ACCOUNTANCY

ACCT 3. Essentials of Accounting
Not open to students majoring in accounting or business administration. Basic concepts in preparation of business financial statements; introduction to understanding, analyzing, and interpreting accounting data by investors, managers, and creditors for decision making, planning, and control. Only minor attention given to record keeping procedures.
Units: 3
Course Typically Offered: Fall

ACCT 4A. Financial Accounting Principles and Systems
Not open to freshmen. Financial accounting; accounting statements, transaction analysis, and data accumulation; partnership and corporation accounting.
Units: 3
Course Typically Offered: Fall, Spring

ACCT 4B. Managerial Accounting Principles and Systems
Not open to freshmen. Prerequisite: grade of C or better in ACCT 4A. Basic coverage of managerial control and decision support tools, job order costing, activity based costing, standard costing, budgeting, relevant costing, and quality control.
Units: 3
Course Typically Offered: Fall, Spring

ACCT 120A. Intermediate Accounting I
Prerequisite: grade of B or better in ACCT 4A, or a minimum GPA of 2.5 in ACCT 4A and ACCT 4B, or ACCT 4A passed with C grade and currently enrolled in ACCT 4B; DS 71 or equivalent recommended. Preparation and analysis of balance sheet and income statements; basic accounting theory and conceptual framework underlying financial accounting; theory of current assets; theory of current liabilities; investments; revenue recognition; error correction and principle changes; and a review of applicable authoritative pronouncements.
Units: 4
Course Typically Offered: Fall, Spring

ACCT 120B. Intermediate Accounting II
Prerequisite: grade of C or better in ACCT 120A; DS 71 or equivalent recommended. An in-depth study of principles, procedures, and reporting requirements in financial accounting as applied to corporate entities; fixed and other noncurrent assets; income tax allocation; noncurrent liabilities, including pensions and leases; inflation accounting; and cash flow. Special attention is given to authoritative pronouncements.
Units: 4

ACCT 132. Cost Accounting
Prerequisites: ACCT 4A passed with B grade or a 2.5 GPA in ACCT 4A/B, or ACCT 4A passed with a C grade and currently enrolled in ACCT 4B. DS 71 or equivalent and IS 52 recommended. Industrial and service industry cost accounting; intermediate level coverage of job order and process costing and standard costing; master budgeting, activity based costing/management, decision support tools, support department joint cost allocations, and quality control issues. FS
Units: 4
Course Typically Offered: Fall, Spring

ACCT 144. Tax Accounting and Planning
Prerequisite: grades of C or better in ACCT 4A. Federal income taxation, research, and planning affecting individuals.
Units: 4
Course Typically Offered: Fall, Spring

Prerequisite: grade of C or better in ACCT 144 and ACCT 4B. Federal income tax laws relating to entities. Primary emphasis placed on tax issues regarding C corporations, S corporations, and partnerships (including limited liability companies). Analysis of the Federal Uniform Estate and Gift tax. Entity tax accounting, return preparation, reporting, and tax research.
Units: 4
Course Typically Offered: Fall, Spring

ACCT 146. Accounting Information Systems and Controls
Prerequisites: grades of C or better in ACCT 4A and ACCT 4B. Design of systems for the collection, organization, and reporting of accounting information. Theory and practice of flowcharting, evaluation of internal accounting controls in computer systems environments, and interrelationships of people, procedures, and equipment.
Units: 4
Course Typically Offered: Fall, Spring

ACCT 148. Accounting for Governmental and Nonprofit Organizations
Prerequisites: grades of C or better in ACCT 120A and ACCT 132. Concepts, principles, and problems of accounting for governmental and nonprofit organizations. Budgeting, fund accounting, cost/benefit analysis, cash planning and control, and independent auditing are introduced in the context of making decisions in governmental and nonprofit organizations.
Units: 4
ACCT 162. Auditing
Prerequisites: grades of C or better in ACCT 120A and ACCT 120B. Objectives and techniques in verification of business financial statements; duties, responsibilities, and professional ethics of the auditor; auditor's reports; analysis of internal controls; audits of computerized systems.
Units: 4
Course Typically Offered: Fall, Spring

ACCT 165. International Accounting
Prerequisites: Grades of C or better in ACCT 4A, ACCT 4B, and ACCT 120A. Accounting concepts, principles, and methods for multinational corporations. Currency for translation of financial statements, financial reporting, international accounting and auditing standards, and the managerial aspects of multinational transactions.
Units: 4
Course Typically Offered: Spring

ACCT 167. Advanced Accounting Problems
Prerequisite: ACCT 120A with a grade C or better. Accounting for corporate consolidations and partnerships.
Units: 4

ACCT 169. Forensic Accounting
Prerequisites: grades of C or better in ACCT 120A and ACCT 132. Basic forensic and investigative accounting. Case studies from financial accounting, cost accounting, federal income taxes, auditing, business law, and other business disciplines will be used to help students analyze facts and provide usable accounting and financial information. (Formerly ACCT 189T)
Units: 4
Course Typically Offered: Fall, Spring

ACCT 170A. CPA Exam Study I: Business Environment and Concepts (BEC) & Financial Accounting and Reporting (FAR)
Prerequisite: grade of C or better in ACCT 120A, ACCT 120B, ACCT 132 and ACCT 187; ACCT 148 and ACCT 167 recommended. The course is available for students in the Professional Accounting Certificate Program only and cannot be used toward undergraduate or graduate degree requirements. The course will cover two of the four exam sections of the national examination required to become a Certified Public Accountant: Auditing and Attestation (AUD) and Regulation (REG).
Units: 3
Course Typically Offered: Fall

ACCT 170B. CPA Exam Study II: Auditing (AUD) & Regulation (REG)
Prerequisite: grade of C or better in ACCT 120A, ACCT 120B, ACCT 132, ACCT 144 and ACCT 187; ACCT 162 and ACCT 145 recommended. The course is available for students in the Professional Accounting Certificate Program only and cannot be used toward undergraduate or graduate degree requirements. The course will cover two of the four exam sections of the national examination required to become a Certified Public Accountant: Auditing and Attestation (AUD) and Regulation (REG).
Units: 3
Course Typically Offered: Fall

ACCT 187. Accounting Ethics and Professional Responsibilities
Prerequisites: ACCT 120A, ACCT 120B and ACCT 132 with a grade of "C" or better. This course examines the Accountants' ethics and professional responsibilities that are integrated in the various roles an accountant undertakes in the recording and reporting of a business processes and financial information.
Units: 3
Course Typically Offered: Fall, Spring

ACCT 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

ACCT 195I. Internship
Prerequisite: permission of internship coordinator. Requires 150 hours of work at a pre-qualified, academically-related work station (business, government or nonprofit agency). As a course substitution, prior department approval required. Only one internship may count towards option requirements. CR/NC grading only.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

MSA 220. Advanced Cost/Managerial Accounting
Coverage of advanced and emerging topics in cost/managerial accounting, including accounting for quality, performance evaluation, transfer pricing, advanced variance analysis, Just-in-Time, Backflush costing, cost accounting history, capital budgeting, and the measurement of the cost of capacity.
Units: 4

MSA 222. Advanced Financial Accounting
Coverage of advanced financial accounting topics with an in-depth study of principles, procedures, and reporting
requirements of consolidated financial accounting and partnerships.

Units: 4
Course Typically Offered: Spring

MSA 224. Professional & Legal Responsibilities
Advanced coverage of legal concepts and topics relevant to professional accountants, including agency, contracts, debtor-creditor relationships, government regulation of business, uniform commercial code, and real property.

Units: 4

MSA 226. Professional Research & Accountancy Theory
Coverage of accounting theory and the components of authoritative sources for fax, accounting, and audit rules and regulations; examination of a variety of issues and topics focusing on the authoritative sources to determine and apply relevant codes, rules and regulations.

Units: 4

MSA 290. Independent Study
Prerequisite: Permission of director and instructor. Approved for RP grading.

Units: 1-4

AEROSPACE STUDIES

ASP 1A. The Foundations of the United States Air Force
The Air Force in the contemporary world. Focuses on the organizational structure and missions of Air Force organizations; officership and professionalism; and includes an introduction to communication skills. Students should first contact the department recruiter at 559.278.6204 for permission number.

Units: 1
Course Typically Offered: Fall

ASP 1B. The Foundations of the United States Air Force
The Air Force in the contemporary world. Focuses on the organizational structure and missions of Air Force organizations; officership and professionalism; and includes an introduction to communication skills. Students should first contact the department recruiter at 559.278.6204 for permission number.

Units: 1
Course Typically Offered: Spring

ASP 2A. The Evolution of USAF Air and Space Power
Prerequisite: ASP 1A completed or in-progress. A study in the general aspects of air and space power through a historical perspective from the first balloons and dirigibles to the space-age global positioning systems of the Persian Gulf War. Historical examples are used to understand the development of Air Force capabilities and missions. The course will also cover Air Force Core Values using operational examples. This course includes writing and briefing exercises as part of a four year Air Force ROTC communication skills development process.

Units: 1
Course Typically Offered: Fall

ASP 2B. The Evolution of USAF Air and Space Power
Prerequisite: ASP 1A/B completed or in-progress. Focuses on factors contributing to the development of air power from its earliest beginnings to the space-age global positioning systems of the Gulf war; the evolution of air power concepts and doctrine; and an assessment of communication skills.

Units: 1
Course Typically Offered: Spring

ASP 3. Leadership Laboratory
Open to students who are members of the Reserve Officer Training Corps or are eligible to pursue a commission as determined by the professor of aerospace studies. Course must be taken each semester of the General Military Course (GMC). A study of Air Force customs and courtesies, issuing military commands, instructing, directing and evaluating the preceding skills, studying the environment of an Air Force officer and learning about areas of opportunity available to commissioned officers. CR/NC grading only.

Units: 1, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

ASP 103C. Air Force ROTC Field Training
Prerequisite: ASP 1 and 2 passed with C grade. Field training provides leadership and officership training in a military environment which demands conformity to high physical and moral standards. Within this structured environment cadets are screened for officer potential as measured against AFROTC field training standards. Motivation and professional development is achieved through various programs such as flight orientation, marksmanship, and survival training.

Units: 3
Course Typically Offered: Fall

ASP 104A. Air Force Leadership Studies
Prerequisite: ASP 2 passed with C grade. Corequisite: ASP 113 Leadership Laboratory (one unit). A study of leadership and management fundamentals, leadership responsibilities, ethics, and communicative skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied.

Units: 3
Course Typically Offered: Fall

ASP 104B. Air Force Leadership Studies
Prerequisite: ASP 2 passed with C grade. Corequisite: ASP 113 Leadership Laboratory (one unit). A study of leadership and
management fundamentals, leadership responsibilities, ethics, and communicative skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied.

Units: 3
Course Typically Offered: Spring

**ASP 105A. National Security Affairs/Preparation for Active Duty**

ASP 105A is not open to students with credit in ASP 105AW. Prerequisite: ASP 104. Corequisite: ASP 113 (one unit). An examination of the needs for national security; an analysis of the evolution of the American defense strategy and policy; aerospace doctrine; overview of alliances and regional security, arms control, and terrorism. Special topics of interest focus on the military as a profession, officership, and the military justice system, and current issues affecting military professionalism. Within this structure, continued emphasis is given to developing communication skills.

Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

**ASP 105AW. National Security Affairs/Preparation for Active Duty**

Not open to students with credit in ASP 105A, ASP 105B. Prerequisite: ASP 104 and satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement. An examination of the needs for national security; an analysis of the evolution of the American defense strategy and policy; aerospace doctrine; overview of alliances and regional security, arms control, and terrorism. Meets the upper-division writing skills requirement for graduation. CR/NC grading only.

Units: 1, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

**AGRICULTURAL BUSINESS**

**AGBS 1. Introductory Agricultural Economics**

Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Microeconomic principles of resource allocation, production, cost, and market price equilibrium with primary application to farms and agribusinesses. Supply and demand in commodity pricing under perfect and imperfect competition. Optimizing single variable input production function; total/marginal approaches to profit maximizing output. G.E.Breadth D3.

Units: 3
Course Typically Offered: Fall, Spring

**AGBS 2. Agricultural Sector Analysis**

Domestic and international forces affecting industry profitability of farm input suppliers, agricultural producers, commodity processors, food marketers; government fiscal, monetary, trade policies interaction with agricultural credit, price support, food subsidy programs; impact on agribusiness asset values, debt accumulation, income levels.

Units: 3
AGBS 5. Survey of Agricultural Economics and Agribusiness
Orientation to agricultural sector, institutions, and historic farm problems. Basic economic concepts and business principles applied to management, marketing, finance, and trade. Consumer demand and producer supply functions. Competitive market price determination. Overview of resource, environmental, consumer, and farming issues and government policies.
Units: 3

AGBS 28. Introductory Agricultural Law
Fundamentals of agricultural law including historical sources; legislative laws and business ethics; administrative regulations, judicial decisions affecting agriculture; express and implied contracts with remedies for their breach in agricultural situations; real and personal property law plus secured transactions in agriculture.
Units: 3

AGBS 31. Farm Accounting
Basic concepts and principles of financial accounting systems applied to farm operations; mechanics of recording single and double entry transactions under cash and accrual accounting methods; preparation and analysis of enterprise records and financial statements to generate management information.
Units: 3

AGBS 32. Agribusiness Managerial Accounting
Prerequisite: AGBS 31 or ACCT 4A. Application and analysis of accounting information for farm and agribusiness management; integration of economic, and financial principles in preparing business plans; equipment cost control and crop enterprise accounting methods; capital investment and profit performance; introduction to computerized farm accounting systems. (2 lecture, 1 arranged)
Units: 3

AGBS 71. Agricultural Business Statistics
Study of statistical techniques and formal reasoning applications to management and social and agricultural sciences. Calculation, interpretation, critical evaluation, and historical relevance of quantitative tools, data analysis, and results including graphical presentations, descriptive and inferential statistics, hypotheses formulation and testing, and regression.
Units: 3

AGBS 76. Agribusiness Microcomputer Applications
Applied microcomputing for agribusiness management; use of spreadsheet, database management, and presentation software; applications to basic farm accounting and financial budgeting, farm production recordkeeping, and commodity price trend tracking.
Units: 3

AGBS 78. Agribusiness Quantitative Analysis
Functional relationships, marginal analysis and decision-making models in agribusiness; logic and probability in diagnosing problems, designing operations and achieving objectives; identification of procedures for efficient resource utilization.
Units: 3

AGBS 80. Undergraduate Research
Prerequisites: AGBS 1 (or ECON 40) and permission of instructor. Directed study or research on particular problems in the field of agricultural economics and business. Consult department policies and procedures governing undergraduate research. Approved for SP grading.
Units: 1-4

AGBS 85T. Topics in Agricultural Business
Agricultural economics, farm management, agribusiness management, financial planning, agricultural development, public policy, product marketing, and decision analysis. Topics may require lab hours.
Units: 1-3

AGBS 100. Intermediate Agricultural Economics
Prerequisites: AGBS 1 (or ECON 40) and MATH 11 (or MATH 75 or MATH 75A & B). Analysis of farm financial statements; institutional sources of farm credit; time value of money and capital budgeting for agricultural investment; cost of debt and equity capital; risk management strategies; insurance, tax, and farm estate planning.
Units: 3

AGBS 105. Agricultural Business Quantitative Methods
Prerequisites: AGBS 1, AGBS 76 (C or better) and MATH 11 (or MATH 75 or MATH 75A & B). Advanced functional relationships, modeling and decision-making analysis in agribusiness; linear programming, sensitivity and regression analysis in spreadsheet models; application of statistical tests for efficient data examination.
Units: 3
Course Typically Offered: Fall, Spring

AGBS 109. Management of Agri-food Supply Chains
Prerequisites: AGBS 100 and AGBS 105. Functional and Institutional approach to agri-food supply chain management, understanding animal protein, commodity crop and produce supply chains, sustainable institutional relationships, logistics and transportation, technology management, supply chain coordination through contracts and negotiations, food safety risk and communication.
Units: 3

AGBS 110. Farm Management
Prerequisites: AGBS 31, AGBS 76, and AGBS 100. Production economics and management techniques for analysis of efficient farm resource use, planning and organization; analysis of budgeting and optimization techniques, and computer applications for developing farm management plans.
Units: 3
Course Typically Offered: Fall, Spring

AGBS 117. Agricultural Labor-Management Relations
Prerequisite: AGBS 1 (or ECON 40). Economic analysis of the farm labor market; labor productivity, agricultural mechanization and farm employment; farm labor laws and government regulations; agricultural labor relations, unionization, and collective bargaining; farm personnel administration practices and supervisory management principles.
Units: 3

AGBS 120. Agribusiness Management
Prerequisite: AGBS 1 (or ECON 40). Organizational forms and management functions of agribusiness firms; human resource management systems; management science principles for optimizing plant location, equipment replacement, inventory control, and sales volume; operations research techniques, including probability-based network and decision models, for solving agribusiness problems.
Units: 3
Course Typically Offered: Fall, Spring

AGBS 122. Agricultural Cooperative Management
Prerequisite: AGBS 120. Philosophical, historical, and legislative evolution of U.S. agricultural cooperatives; uniqueness of cooperative organization, planning, direction and control functions vis-a-vis standard corporations; legal, financial, and tax considerations in managing input-supply and marketing cooperatives; case studies and field trips to cooperatives.
Units: 3

AGBS 124. Food and Fiber Industry Management
Prerequisite: AGBS 1 (or ECON 40). Production management of farm input manufactures, agricultural commodity processing, food/fiber product distribution; functional approach to transformation/value-added operations including planning, organizing, directing, coordinating, controlling; case applications to materials handling, product development, food packaging, quality control, transportation logistics, inventory management.
Units: 3

AGBS 128. Agricultural Leadership
The role of government, industry, and consumers in developing comprehensive and inclusive solutions to current agricultural and food issues is explored. Leadership and communication skills for accomplishing group objectives are developed. A field trip is required. (Formerly AGBS 185T section)
Units: 3
Course Typically Offered: Fall, Spring

AGBS 130. Agricultural Finance
Prerequisites: AGBS 2, AGBS 32, AGBS 76. Prerequisite or corequisite: AGBS 100 or instructor's permission. Analysis of farm financial statements; institutional sources of farm credit; time value of money and capital budgeting for agricultural investment; cost of debt and equity capital; risk management strategies; insurance, tax, and farm estate planning.
Units: 3
Course Typically Offered: Fall, Spring

AGBS 131. Agricultural Capital Markets
Prerequisites: AGBS 2, AGBS 130. Public and private financial intermediaries as sources of agricultural capital; the Cooperative Farm Credit System; credit management policies and practices; government policy, the regulatory environment, and competitive financial markets; legal requirements and financial instruments; external equity capital; and lease financing. (Formerly AGEC 185T)
Units: 3
Course Typically Offered: Fall, Spring

AGBS 136. Farm and Ranch Appraisal
Prerequisites: AGBS 1 (or ECON 40). AGBS 110 recommended. Principles of agricultural appraisal; physical and economic factors affecting land values; estimation of real estate value using income, cost, and market data approaches; case studies and field problems involving the valuation of local farm and ranch properties.
Units: 3
AGBS 140. International Agricultural Economics
Prerequisites: AGBS 1 or ECON 40, AGBS 2 or ECON 50. U.S. agricultural sector in the global economy; trade theory versus government protectionism; domestic farm programs impacts on commodity exports/imports; international agreements, multi-lateral institutions, foreign currency exchange rates, overseas investment; regulatory, fiscal, monetary policies affecting agribusiness competitiveness in world markets.
Units: 3
Course Typically Offered: Fall, Spring

AGBS 150. Agricultural and Food Policy
Prerequisite: AGBS 1 or ECON 40; AGBS 2 or ECON 50. Analysis of public policies affecting the economics of U.S. and California agriculture; government programs influencing agricultural production, commodity distribution, market prices, farm income; environmental and natural resource issues; nutrition, food safety and biotechnology concerns; food industry regulation; international agricultural trade.
Units: 3
Course Typically Offered: Fall, Spring

AGBS 155. Environmental and Natural Resource Policy
Economic Analysis of public policies governing land use, water management, energy generation, mineral exploitation and forest administration; review of population pressures and resource conservation; examination of externalities, property rights issues, resource use planning, agricultural zoning, environmental regulations, and reclamation law. GE Integration I.D.
Units: 3
Course Typically Offered: Fall, Spring

AGBS 160. Agricultural Marketing Analysis
Prerequisite: AGBS 100 or permission of instructor. Commodity transformation and product flow through processing and distribution channels; market structure, conduct and performance; marketing system efficiency and marketing bill components; over supply, marketing orders, grading and standards, and price stabilization; price forecasting, futures market trading, and risk management.
Units: 3
Course Typically Offered: Fall, Spring

AGBS 162. Commodity Futures Trading
Prerequisite: AGBS 160 or permission of instructor. Study of commodity futures and options markets; speculative trading and techniques of fundamental and technical analyses; crop and livestock hedging strategies for commodity procurement and marketing; integrating options and futures trading for risk management; and development of futures trading plans.

AGBS 163. Agricultural Export Marketing
Prerequisite: AGBS 160 or permission of instructor. Determination of potential overseas markets for U.S. agricultural products through export marketing studies; foreign business environment and distribution channels; product preparation and transportation abroad; cultural-specific promotional and advertising programs; international sales agreements, financial transactions, plus banking and shipping documentation.
Units: 3
Course Typically Offered: Spring

AGBS 164. Agribusiness Sales Management
Prerequisite: AGBS 1 or ECON 40. Marketing management strategies for stimulating business and consumer demand for agricultural goods and services; food and fiber merchandising using institutional, functional, value approaches; sales program organization and staff development for effective communication of product information and timely completion transactions.
Units: 3
Course Typically Offered: Spring

AGBS 170S. Advanced Agribusiness Applications
Prerequisites: AGBS 110, AGBS 120, AGBS 130, AGBS 150, AGBS 160; upper-division writing skills requirement and permission of instructor. AGBS 110 and AGBS 160 may be taken concurrently for seniors. Research methods applied to agricultural business in the areas of strategic management. Data collection and analysis using statistics and other techniques will be expected. Culminating activities may include commodity research analysis with price forecasting, development of a business plan, or case studies. A service learning project is expected of all students. (Formerly AGBS 170)
Units: 3
Course Typically Offered: Fall, Spring

AGBS 173. Wine Marketing
Introduction to basic marketing concepts such as pricing, promotion, packaging and place applied to the wine business. Sources of information and methods to conduct market research in the wine industry. Consumer trends, buyer behavior and the structure and legal environment will be discussed.
Units: 3

AGBS 180. Undergraduate Research
Prerequisites: senior standing and permission of instructor. Directed study or research on particular problems in the field of agricultural economics and business. Consult department policies and procedures governing undergraduate research. Approved for RP grading.
Units: 1-4
Course Typically Offered: Fall, Spring

AGBS 185T. Topics in Agricultural Business
Prerequisite: AGBS 1 (or ECON 40). Agricultural economics, farm management, agribusiness management, financial planning, agricultural development, public policy, product marketing, and decision analysis. Topics may require lab hours.
Units: 1-3

AGBS 192. Agricultural Business Field Studies
Prerequisite: AGBS 1 (or ECON 40). Business and economic functions performed by specialized agricultural agencies with emphasis on physical operating patterns. Field trips to production, marketing, and finance firms. Workshops with agribusiness managers. (1 lecture, 2 lab hours) (Field trip fees, $75)
Units: 2

AGBS 194I. Agribusiness Internship
Prerequisites: junior standing. Emphasis on development of decision-making ability through industrial experience integrated with basic principles acquired in the classroom. Only 3 units of internship allowable in the major. CR/NC grading only.
Units: 1-3
Course Typically Offered: Fall, Spring

AGBS 195. Agricultural Business Competitive Teams
Prerequisites: AGBS 1 (or ECON 40). This course provides students with hands-on experience incorporating theories and tools learned through required coursework. Activities will be an "academic playground" that will give students the opportunity to show off their skills in a competitive environment among colleges and universities.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

AGBS 280T. Topics in Agricultural Business
Prerequisite: AGBS 210. Classified standing or permission of instructor. Fields of study include: farm management, agribusiness management, financial planning, international agriculture, public policy, and product marketing.
Units: 3, Repeatable up to 6 units

AGBS 290. Independent Study
See Academic Placement -- Approved for SP grading.
Units: 1-3

AG SCI & TECH INTERDISCIP

AGRI 100H. JCAST Honors Seminar
Prerequisite: Acceptance into the JCAST Honors Program. Survey of critical issues and research in the interrelated fields of agriculture, food, and family. Emphasis on critical thinking and strategic problem solving. Lectures by faculty and agriculture leaders. Spring of junior year. S
Units: 3
Course Typically Offered: Spring

AGRI 101H. JCAST Honors Colloquium
Prerequisite: AGRI 100H. Refinement, completion, and presentation of Honors Thesis/Project.
Units: 3
Course Typically Offered: Spring

AGRI 110. Introduction to Agricultural Leadership
Prerequisite: At least junior standing. Introduction to leadership theory and leadership models; development, application and reflection of personal leadership capabilities through self-assessments and experiential learning activities. (Formerly AGED 160T)
Units: 3
Course Typically Offered: Fall

AGRI 120. Leadership in Groups and Teams
Prerequisite: At least junior standing. Understanding and development of successful teams, multiple roles within teams, improving group performance, planned change and the evaluation of teams within the agricultural industry and related disciplines. (Formerly AGED 160T)
Units: 3
Course Typically Offered: Spring

AGRI 130. Professional Development in Agriculture
Prerequisite: At least junior standing. Development of communication skills, business etiquette, and improved levels of professionalism. Students learn how to organize and lead a professional meeting, create a resume and portfolio, and become better prepared to interview for internships and/or jobs. (Formerly AGED 160T)
Units: 3
Course Typically Offered: Fall

AGRI 140. Leadership and Change
Prerequisite: At least junior standing. Prepares students for addressing complex personal and organizational food, consumer, and agricultural issues related to leading change. Students gain competencies necessary in the diffusion of innovations. (Formerly AGED 160T)
Units: 3
AGRI 150. Agricultural Leadership Project  
Prerequisite: At least junior standing; AGRI 110 and AGRI 130 (or concurrently). Application of communication and leadership skills and abilities through practical experience related to the students chosen career field. CR/NC grading only.  
Units: 1-3  
Course Typically Offered: Fall, Spring

AGRI 160T. Topics in Agriculture  
Prerequisites: Junior standing and permission of the instructor.  
Topics in Agriculture.  
Units: 1-4

AGRI 160T. Framing the Future for Food & Agriculture  
Exploration of current issues in food and agriculture through presentations, readings, group presentations and field trips. Students from all departments in the Jordan College of Ag with particular interest in policy and governance are invited to participate with the goal of deepening their understanding of key issues facing California's food and agriculture industries. Students will learn directly from those involved with the key issues and policy makers in the state. Professionalism is taught and exemplified throughout the course. (Offered Spring 2020)  
Units: 3

AGRI 220. Research Methodology and Communications  
Critical literature review, quantitative and qualitative research design, scientific writing, questionnaire design and use, and presentation of research results. Ethical research issues examined. Approved for RP grading.  
Units: 3

AGRI 298. Project  
Prerequisite: See Criteria for Thesis and Project. Completion of an approved project appropriate to the candidate's area of specialization. A written report and a presentation to candidate's committee is required. Approved for RP grading.  
Units: 2-4

AGRI 300. Integrating Agriculture Across the Curriculum  
This course is designed to help public school teachers integrate agriculture into the academic classroom. Emphasis will be on making science, math, language arts, social science, history and technology more exciting and meaningful for pre-kindergarten through 12th grade students. Teachers will experience first hand a variety of agricultural resources available to them and learn how to locate, select and utilize agricultural topics to enhance the curriculum. Six additional hours of individual work is required beyond the instructional time, for preparing agricultural instructional materials.  
Units: 2, Repeatable up to 6 units

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**ANIMAL SCIENCES & AG EDUCATION**

**AGED 50. Orientation to Agricultural Education**  
An overview of Agricultural Education in California, including the principle components of Agricultural Education, developing academic and career plans, and observation in a secondary agricultural classroom. Two-hour lecture and three-hour school site observation laboratory. CR/NC grading only.  
Units: 3  
Course Typically Offered: Fall, Spring

**AGED 66. Agricultural Communications**  
Agricultural news and information gathering and dissemination to food producers and consumers through print/broadcast media and computer networks; mass communications writing, editing, simulated videotape presentations (Formerly AGEC 66, 166)  
Units: 3

**AGED 80. Undergraduate Research**  
Open to freshmen and sophomores with permission of instructor. Exploratory work on a suitable agricultural problem in agricultural education. Approved for RP grading.  
Units: 1-4  
Course Typically Offered: Fall, Spring

**AGED 115. FFA Activities**  
Organization and administration of various FFA activities. Parliamentary procedure and meeting organization; committee work and structure.  
Units: 2, Repeatable up to 4 units  
Course Typically Offered: Spring

**AGED 120S. Leadership & Communications**  
Students will develop leadership skills, self-confidence, and oral and written communication skills. Also experience the benefits of volunteerism through participation in various service learning activities within their community industries, and the university. Approved for RP grading.  
Units: 2, Repeatable up to 4 units  
Course Typically Offered: Spring

**AGED 135. Introduction to Agricultural Education**  
Survey of agricultural education in California, including qualifications for teaching agriculture, structure and content of vocational agriculture programs. Supervision of vocational youth organizations.  
Units: 3
Course Typically Offered: Fall

AGED 150. Agricultural Resources and Computer Applications
Prerequisite: junior standing or permission of instructor; 12 upper-division units in the major. Development and application of techniques for obtaining and using resource materials including government documents, university and experiment station reports. Development of computer skills utilized in agricultural education. (2 lecture, 2 lab hours)
Units: 3

Course Typically Offered: Spring

AGED 160T. Topics in Agriculture
Prerequisites: junior standing and permission of instructor. Agricultural education. Topics may require lab hours.
Units: 1-4

AGED 166. Agricultural Publication Production
Application of various skills, including writing, editing and layout, in producing agricultural publications with an emphasis on computer software applications for publishing.
Units: 3

Course Typically Offered: Spring

AGED 180. Undergraduate Research
Open to juniors or seniors with permission of instructor. Exploratory work on a suitable agricultural problem in agricultural education. Approved for RP grading.
Units: 1-4

Course Typically Offered: Fall, Spring

AGED 187. Organization, Administration, and Supervision of Agricultural Education
Prerequisite: senior standing. A study of the California and federal plans for vocational education as they pertain to agricultural education.
Units: 3

Course Typically Offered: Fall

AGED 189. Education in Agricultural Mechanics
Prerequisites: MEAG 1S; junior/senior standing. Strategies for organizing, teaching, and administering educational programs in agricultural mechanics for youth and adults.
Units: 3

Course Typically Offered: Fall

AGED 190. Independent Study
See Academic Placement Independent Study. Approved for RP grading.
Units: 1-3

Course Typically Offered: Fall, Spring

AGRI 280. Seminar in Agricultural Education
Maximum total credit 9 units in any given area or any combination of the three areas. Prerequisite: permission of instructor; admission to teacher preparation program; bachelor's degree in agriculture. Advanced problems in agriculture; research and experimentation in a selected area: animal science, plant science, or agricultural mechanics. Approved for RP grading.
Units: 1-3

AGRI 281. Problems in Agricultural Education
Prerequisite: graduate standing. Individual supervised research in agricultural education; appropriate reports and evaluation required. Individual conferences.
Units: 1-3

ASCI 1. Introduction to Animal Science
Prerequisite: Grade of C or better is required to fulfill prerequisite for Animal Science courses. Overview of the livestock and poultry industry; types and breeds, world distributions, foods and products from farm animals, reproduction, genetics, nutrition, and marketing. (3 lecture)
Units: 3

Course Typically Offered: Fall, Spring

ASCI 2. Animal Science Orientation
Provides detailed information for students preparing for a career in Animal Science including course requirements, career opportunities, repairing/building a resume. (Formerly ASCI 185T)
Units: 1

Course Typically Offered: Fall

ASCI 11. Meat Animal Selection and Evaluation
Prerequisite: ASCI 1 or concurrently. Basic factors involved in selection and evaluation of market animals; relationships of live market animal traits to carcass cutability and quality. (2 lecture, 3 lab hours)
Units: 3

Course Typically Offered: Fall, Spring

Biological management of companion animals including dogs, cats and other animals such as rabbits, birds and fish. Course will cover domestication, human-animal bond, breeds, nutrition, reproduction, genetics, health and welfare. (Formerly ASCI 185T)
Units: 3

Course Typically Offered: Fall, Spring

ASCI 21. Beef Cattle Production
Prerequisite: ASCI 1 or concurrently. Overview of world and United States beef production. Evaluation of the structure
ASCI 31. Swine Production  
Prerequisite: ASCI 1 or concurrently. Management principles and practices of purebred and commercial pork production. Nutrition, reproduction, environmental management, health, marketing, selection, and records are studied. (2 lecture, 3 lab hours; field trips)  
Units: 3  
Course Typically Offered: Fall

ASCI 35. Feeds and Feeding  
Prerequisite: ASCI 1 or concurrently. Principles of nutrition; nutrients and their metabolism; comparison of qualitative nutrient requirements of non-ruminant and ruminant animals and formulating diets to meet these requirements. (2 lecture, 3 lab hours)  
Units: 3  
Course Typically Offered: Fall, Spring

ASCI 41. Sheep Production  
Prerequisite: ASCI 1 or concurrently. Management of purebred, commercial, and small farm flocks; principles and practices in breeding, feeding, care of ewes and lambs, and marketing of lamb and wool. (2 lecture, 3 lab hours)  
Units: 3  
Course Typically Offered: Spring

ASCI 51. Horse Production  
Prerequisite: ASCI 1 or concurrently. Breeds, selection, and care and feeding of light horses. (2 lecture, 3 lab hours)  
Units: 3  
Course Typically Offered: Fall

ASCI 56. Beginning Colt Training  
Horse training methods for young horses, primarily ground work including leading, grooming, longeing, saddling and bridling. Emphasis on safe protocols, horse psychology and observable outcomes of training protocols. (Formerly ASCI 185T).  
Units: 3, Repeatable up to 6 units

ASCI 57. Advanced Colt Training  
Advanced training methods for young horses including ground work and basic under saddle training. Emphasis on safe protocols to create a methodical program increasing skill, ability, and confidence in both student and horse. (Formerly ASCI 185T)  
Units: 3, Repeatable up to 6 units

ASCI 61. Dairy Cattle Production  
Prerequisite: ASCI 1 or concurrently. Principles and practices of milking, feeding, breeding, evaluating, housing, health, behavior, and management of dairy cattle. (2 lecture, 3 lab hours)  
Units: 3  
Course Typically Offered: Spring

ASCI 65. Introduction to Animal Health  
The stockman's approach to animal health and disease control in domestic animals. Classification of animal diseases, their causes and appropriate treatments with emphasis on preventative medicine. (2 lecture, 3 lab hours)  
Units: 3

ASCI 67. Animals and Society  
Units: 3  
Course Typically Offered: Fall, Spring, GE Area: E1

ASCI 68. Pre-Vet Orientation  
Detailed information for students preparing for veterinary school including course requirements, admission policies, application procedures, interview sessions, and career opportunities in vet medicine. (Formerly ASCI 185T)  
Units: 1  
Course Typically Offered: Fall, Spring

ASCI 71. Meat Science  
Prerequisite: ASCI 1 or concurrently. Basic meats course covering topics from harvest to consumption. Discussion of meat quality versus quantity, general food safety and meat preparation. Lab will demonstrate all aspects of modern meat industry practices including harvest, fabrication and further processing. (2 lecture, 3 lab hours)  
Units: 3  
Course Typically Offered: Fall, Spring

ASCI 81. Introduction to Livestock, Meat and Dairy Evaluation  
Introductory course in evaluating livestock, meat and dairy cattle. Utilizes visual and performance data in establishing the economic value of animals representing the beef, sheep, swine, dairy, and horse industries. (2 lecture, 3 lab hours)  
Units: 3
ASCI 83. Issues and Opportunities in Animal Sciences  
Prerequisite: ASCI 1. Invited speakers provide insight on current industry issues. Comprehensive study of career opportunities available in animal science. Field experience is offered in specific areas.  
Units: 2, Repeatable up to 4 units

ASCI 91. Poultry Production  
Prerequisite: ASCI 1 or may be taken concurrently. Management principles and practices of commercial poultry production. Nutrition, reproduction, environmental management, health, and processing of broilers and layers. (2 lecture, 3 lab hours)  
Units: 3

ASCI 94I. Agri Internship  
Prerequisite: minimum GPA of 2.0 and instructor approval. Emphasis on acquisition through experience of practical animal production skill integrated with basic principles acquired in the classroom. This course is for on-campus internships at animal science related units only. CR/NC grading only.  
Units: 1-6

ASCI 101. Environmental Management of Farm Animals  
Prerequisite: ASCI 1 or concurrently. Basic principles of environmental management as applied to domestic farm animals. Special emphasis given to animal behavior, animal welfare, and animal performance. The optimal animal environment will be studied in detail.  
Units: 3

ASCI 102. Animal Welfare and Handling  
Prerequisite: ASCI 1 (taken previously or concurrently). Comprehensive study of animal handling applied to domestic farm animals. Handling methods and techniques will be studied in detail. Special emphasis is given to animal behavior, animal welfare, stockmanship, and injury prevention. (Formerly ASCI 185T)  
Units: 3

ASCI 121. Advanced Beef Management  
Prerequisite: ASCI 21. Prevailing and alternative management systems and techniques of beef production in the United States and California including economic analysis. (2 lecture, 3 lab hours)  
Units: 3

ASCI 125. Animal Genetics  
Prerequisite: ASCI 1. Genetic principles and application to livestock production; basic inheritance, qualitative genetics, variation in economic traits of livestock, quantitative inheritance, selection progress; current methods of genetic livestock improvement.  
Units: 3

ASCI 131. Advanced Swine Management  
Prerequisite: ASCI 31. A comprehensive study of the swine industry. Laboratory exercises designed to improve the management decision ability of students. (2 lecture, 3 lab hours; field trips)  
Units: 3

ASCI 135. Animal Nutrition  
Prerequisite: ASCI 35. Principles of nutrition and metabolism; digestive physiology of farm animals.  
Units: 3

ASCI 145. Anatomy and Physiology of Farm Animals  
Prerequisite: BIOL 1A or BIOL 10 or BIOL 12. General structures of farm animals and physiological functions of organs in the animal body. (3 lecture, 3 lab hours)  
Units: 4

ASCI 146. Physiology of Lactation  
Prerequisites: ASCI 61, CHEM 3A. Fundamentals of anatomy, physiology, and endocrinology of milk synthesis and secretion; milking machine systems and management; pathological and environmental factors affecting lactation.  
Units: 3

ASCI 151. Advanced Horse Management  
Prerequisite: ASCI 51. Advanced principles of horse management, reproduction, breeding systems, nutrition, facilities, business aspects, exercise physiology, training colts. (2 lecture, 3 lab hours)  
Units: 3

ASCI 152. Equine Nutrition  
Prerequisite: ASCI 51. Principles of equine nutrition; digestive anatomy and physiology nutrient requirements; feed formulation, nutritional management, and diseases. (Formerly ASCI 185T)
ASCI 153. Stable Management
Prerequisite: ASCI 51. An overview of horse farm and stable management theories and applications. The impact of management practices on the animal, on the environment, and on economic viability is considered. (2 lecture, 3 lab hours) (Formerly A SCI 185T)
Units: 3
Course Typically Offered: Fall

ASCI 155. Animal Reproduction
Principles of reproductive physiology, associated endocrine hormones, and their application to domestic animals.
Units: 3
Course Typically Offered: Fall, Spring

ASCI 156. Applied Reproductive Management
Prerequisites: ASCI 155 (may be taken concurrently). Principles of advanced reproductive management techniques with emphasis on practical applications in the various livestock species. (3 lab hours)
Units: 1, Repeatable up to 2 units
Course Typically Offered: Spring

ASCI 161. Advanced Dairy Farm Management
Prerequisite: ASCI 61. A comprehensive study of daily industry management strategies and practices. Exercises involve recognition of problems and recommendation of solutions associated with managing commercial dairy operations. (2 lecture, 3 lab hours; field trips)
Units: 3
Course Typically Offered: Fall

ASCI 163. Dairy Cattle Nutrition
Prerequisite: ASCI 135. Principles of dairy cattle nutrition. Nutritional requirements of the dairy calf through the mature cow. Special emphasis on computerized diet formulation and feed inventory control.
Units: 3
Course Typically Offered: Spring

ASCI 164. Advanced Commercial Dairy Management Evaluation
Detailed analysis of dairy management. Procedures and methodologies in assessing dairy management productivity and profitability. Actual dairy assessment is emphasized. (Formerly ASCI 185T).
Units: 2, Repeatable up to 4 units

ASCI 165. Infectious Diseases of Domestic Animals
Prerequisite: BIOL 20 or BIOL 120. Microbiological concepts related to bacterial, viral, and fungal diseases in domestic animals with emphasis on specific diseases of veterinary importance. Study of bacterial, viral, and fungal diseases in domestic animals. Discussion of disease identification, prevention, treatment and physiological processes that combat infection.
Units: 3
Course Typically Offered: Fall, Spring

ASCI 171. Advance Meat Science
Prerequisite: ASCI 11 or ASCI 71. Basic advanced meats course: covering comprehensive study of the conversion of muscle to meat and factors that affect meat quality. Topics include muscle structure and function and muscle anatomy. Laboratory exercises involve hands-on techniques of harvest, fabrication and further processing of various products from the major species of production livestock. (2 lecture, 3 lab hours)
Units: 3
Course Typically Offered: Fall

ASCI 172. Meat Technology
Comprehensive study of meat science topics. Emphasis placed on food safety and systems including HACCP and current product development efforts in the meats industry. Laboratory exercises are designed to improve student application of HACCP principles and to strengthen understanding of the vast array of new and innovative products on the market. (2 lecture, 3 lab hours.)
Units: 3
Course Typically Offered: Fall

ASCI 175. Agricultural Food Safety Systems
Provides an understanding of food safety systems utilized in the agricultural industry. Exposes students to best agricultural and manufacturing practices, standard operating procedures, sanitation practices and standards, HACCP and ServSafe.
Units: 3
Course Typically Offered: Fall

ASCI 180. Undergraduate Research
Open to juniors and seniors. Exploratory work on a suitable agricultural problem in animal science. Approved for RP grading.
Units: 1-4
Course Typically Offered: Fall, Spring

ASCI 181. Advanced Livestock, Meat and Dairy Evaluation
Prerequisite: ASCI 11 or ASCI 81 or permission of instructor. Detailed analysis of animal form related to functional efficiency, economic value, and sound livestock production management. Written and oral defense of judgments (dairy, horse, livestock, meats). (2 lecture, 3 lab hours; field trips)
Units: 3, Repeatable up to 6 units
ASC 182. Livestock Marketing and Show Management
Development of skills in the organization, administration, and operation of livestock activities at a district fair level. Emphasis on practical application of skills. Approved for RP grading. (2 lab hours per unit)
Units: 1-2
Course Typically Offered: Fall, Spring

ASC 183. Animal Industry Tour
Animal Industry Tours is designed to expose students to various types of operations and organizations that are involved in and affect livestock production and management. Students will hear from industry experts about various segments of the agriculture industry. Students will also attend tours of working operations ranging from production to manufacturing of livestock and their products. (Course fee, $75) (Formerly ASCI 185T)
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

ASC 185T. Topics in Animal Science
Prerequisites: junior standing and permission of instructor. Anatomy, physiology, pathology, nutrition, genetics, livestock management. Topics may require labs.
Units: 1-4

ASC 185T. Livestock Project Selection, Management and Showing
Development of knowledge and skills related to the selection, feeding and nutrition, management, show preparation, fitting and exhibition of livestock at fairs and shows. Primarily focused on preparing students to supervise 4-H and FFA members beef, sheep, swine and dairy projects. (Offered Spring 2020)
Units: 3

ASC 186. Animal Science Seminar
Prerequisite: senior standing or permission of instructor; 12 upper-division units in the major. Latest developments in research; assigned papers in animal science to be presented in both oral and written form.
Units: 1
Course Typically Offered: Fall, Spring

ASC 187. Equestrian
Women only. (See ATHL 181)
Units: 2, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

ASC 190. Independent Study
See Academic Placement Independent Study. Approved for RP grading.
Units: 1-3

ASC 191. Advanced Poultry Production
Prerequisite: ASCI 91. Advanced management principles and practices of commercial poultry production. Advanced knowledge concerning anatomy, physiology, reproduction, nutrition, environmental management, health, and processing of broilers will be sought. (2 lecture, 3 lab hours)
Units: 3
Course Typically Offered: Fall - odd

ASC 194I. Agricultural Internship
Prerequisites: junior or senior standing and approval of internship committee. This course to be used by students doing off-campus, industry-related internships only. Emphasis on development of decision-making ability through industrial experience integrated with basic principles acquired in the classroom. CR/NC grading only.
Units: 1-8
Course Typically Offered: Fall, Spring

ASC 229. Seminar
Prerequisite: permission of instructor. Students investigate and present current research problems. Observation and evaluation of additional assigned seminars. Oral and written reports required. (Formerly AGRI 229)
Units: 1, Repeatable up to 3 units

ASC 240T. Topics in Animal Science
Prerequisite: upper-division animal science appropriate to study topic; permission of instructor. Investigation of topic in animal science; anatomy, physiology, pathology, nutrition, genetics, or economics. Topics may require lab hours. (Formerly AGRI 240T)
Units: 3, Repeatable up to 12 units

ASC 241. Endocrine and Reproductive Physiology
Prerequisite: ASCI 155. Physiology which deals with neural and hormonal integration and control of the animal body, including scientific aspects of the processes of reproduction and application of current knowledge in improving reproductive efficiency. (Formerly AGRI 241)
Units: 3

ASC 242. Environmental Physiology of Domestic Animals
Prerequisite: ASCI 145A; permission of instructor. A study of environmental factors affecting domestic animals under field and controlled conditions. (Formerly AGRI 242)
Units: 3

ASC 244. Ruminant Nutrition
Prerequisite: ASCI 135, CHEM 150. Ruminant physiology of digestion, absorption, and metabolism and nutrients, and the relationship of enzymes and hormones. (Formerly AGRI 246)
ASCI 247. Concepts in Non-Ruminant Nutrition
Prerequisite: ASCI 135 or equivalent, graduate standing or consent of instructor. Digestion, absorption, nutrient utilization, and interrelationships in poultry, swine, and other non-ruminants. (Formerly AGRI 247)
Units: 3

ASCI 248. Meat Science and Muscle Biology
Prerequisite: ASCI 171, graduate standing or consent of instructor. Evaluation of muscle as meat; biological characteristics, growth and development of skeletal muscle, glycogen metabolism, and factors affecting quality of meat. (Formerly AGRI 248)
Units: 3

ASCI 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading. (Formerly AGRI 290)
Units: 1-3

ASCI 299. Thesis
Prerequisite: See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading. (Formerly AGRI 291)
Units: 2-4

ASCI 299C. Thesis Continuation
Pre-requisite: Thesis 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

CI 161. Mth Mtl Agri
Units: 3, Repeatable up to 999 units

EHD 154B. Final Student Teaching Seminar - Agricultural
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 1

EHD 155A. Student Teaching in Secondary School
Prerequisites: admission to the Single Subject Credential Program; CI 151, 152, and CI 159 must be taken prior to or concurrently with EHD 155A. SPED 121 Special Needs Secondary Education must be taken concurrently. Student teaching in middle school under clinical supervision; assignment requires 3 hours per day, Monday through Friday. CR/NC grading only. (Instructional materials fee, $15).
Units: 4, Repeatable up to 8 units
Course Typically Offered: Fall, Spring

EHD 155B. Student Teaching in Secondary School - Agricultural
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

ANTHROPOLOGY

AIS 5. American Indian History
An interpretive survey of American Indian history from the native point of view including accounts of American Indian origin and the arrival of immigrants from Asia, Africa, and Europe.
Units: 3

AIS 9T. Topics in American Indian Studies
Selected topics at an introductory level in American Indian Studies.
Units: 1-3

AIS 50. Contemporary Life of the American Indian
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Current problems of American Indians and Arctic Natives resulting from culture conflict, acculturation, minority status, and governmental policy. G.E. Breadth D3
Units: 3

GE Area: D3

AIS 65T. Topics in Indian Education
Foundations and history of Indian education, methods of teaching Indian children, curriculum and practices for Indian education, guidance for the Indian student, problems of teachers of Indian children, education of Indian adults.
Units: 3, Repeatable up to 9 units

AIS 90. Intro to American Indian Religion
Introduction to the concepts of religion and belief systems in American Indian societies. Examines American Indian religion as an integration of culture, geography, economic activity,
social obligations and environmental responsibilities. Explores conflicts and adaptations with non-Native religious systems.

Units: 3

**AIS 100. American Indian Religion**
American Indian religious systems, including basic concepts of religion and the sacred, ceremonial life, medicine, functions of religious institutions and practices, and contrast/conflict with non-Native religious systems.

Units: 3

**AIS 101. American Indian Law**
Concepts of laws on Indian reservations, termination, litigation and complaints, strengthening tribal governments. Law related to Indian land and resources.

Units: 3

**AIS 103. Indians of California**
Prerequisite: G.E. Foundation and Breadth Area D. Survey course on the ancient cultures of California, historical development of California Indian cultures according to regional resources, conflict between the California Indian people and various colonial forces, arts and culture of California Indian people, and contemporary issues of California Indians.

Units: 3
GE Area: ID

**AIS 160. The Politics of Indian Education**
This seminar examines the interaction of politics, culture, and education, using case studies of federal financing of Indian education in the mission, Bureau of Indian Affairs, tribal, and public school systems.

Units: 3

**AIS 170. Experience in American Indian Community**
Offers students supervised field experience working for a tribe, tribal/Indian organization, tribal school or Indian education program, public agency, or the university's Indian organizations.

Units: 3, Repeatable up to 6 units

**AIS 189. Fieldwork in Community Relations**
Supervised field observation, participation, and documentation in the operation of minority communities.

Units: 3, Repeatable up to 6 units

**AIS 190. Independent Study**
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3

**ANTH 2. Introduction to Cultural Anthropology**
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Examines the nature of culture, humanity's unique mechanism for adapting to the changing environment. Explores the varieties of human life and explains how culture has made possible the range of different and successful societies, from hunters and gatherers to industrial civilization. G.E. Breadth D3.

Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3

**ANTH 3. Introduction to Prehistory and Physical Anthropology**
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Examines the biological and cultural basis of being human. Compares us with our primate relatives, traces the biological and cultural evolution of our species from earliest ancestors, through the development of agriculture to the emergence of civilization. G.E. Breadth D3.

Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3

**ANTH 30. Critical Thinking in Anthropology**
Distinguish belief vs. knowledge and fact vs. opinion; examine relationship between language/logic; use inductive/deductive reasoning; recognize informal/formal fallacies; appreciate socio-cultural context of critical thinking. These skills are applied to topics of race/intelligence, religion/values, and social policy. Skills demonstrated/assessed through oral and written performance. G.E. Foundation A3.

Units: 3
Course Typically Offered: Fall, Spring, Summer
GE Area: A3

**ANTH 100. Concepts and Applications**
This foundation course demonstrates the use of selected core concepts in research and analysis. Acquaints students with the conceptual framework of the discipline and the basic processes of anthropological inquiry and application of knowledge. (Formerly ANTH 103)

Units: 3
Course Typically Offered: Fall

**ANTH 101. Introductory Fieldwork in Archaeology**
An introduction to basic methods for archeological excavation and site survey. The Involves a block of time in the field away from campus. Can be repeated up to two times for credit. (Class fee $75).

Units: 3-6
Course Typically Offered: Spring

**ANTH 101B. Advanced Fieldwork in Archaeology**
Advanced methods and strategies for archeological excavation and site survey. The course will involve a commitment by
ANTH 102. Introduction to Linguistic Anthropology
A compendium of current thinking on language and culture from a variety of interdisciplinary perspectives. Examines the nature of language, language description, language and worldview, gendered speech, ethnicity and language, power and performance, verbal and nonverbal art, and associated theories and research methods.

Units: 3
Course Typically Offered: Spring

ANTH 104. History and Theory of Anthropology
Prerequisite: ANTH 100. A history of the growth of anthropological thought through an analysis of the informational and explanatory powers of five major theoretical schools: Nineteenth-century Evolutionists, British Functionalists, Boasian Historical Particularists, Neo-Evolutionists/ Marxists, and Cognitivists.

Units: 3
Course Typically Offered: Spring

ANTH 105W. Applied Anthropology
Prerequisite: G.E. Foundation and Breadth Area D, satisfactory completion (C or better) of ENGL 5B or ENGL 10 graduation requirement, to be taken no sooner than the term in which 60 units are completed. Examination and assessment of the use of anthropological data and concepts to address contemporary issues in education, health care, law, environmental planning, and social services. Students work on applied problems and write observations, plans, reports, and research documents geared to the needs of professionals, service providers, and particularly planners in modern institutional contexts. Meets the upper-division writing skills requirement for graduation. Multicultural/International M/I.

Units: 3
Course Typically Offered: Fall, Spring, Summer

ANTH 111. Ethnographic Fieldwork
An introduction to ethnographic field methods. Topics include the ethics of fieldwork, organizing data, and ethnographic writing. Students will conduct fieldwork on cultural locally. Can be repeated up to four times for credit.

Units: 3, Repeatable up to 12 units

ANTH 111B. Intermediate Ethnographic Fieldwork
Prerequisite ANTH 111A. Students conduct an ethnographic field project under the direction of the instructor, employing participant observation. Involves field trips and weekend sessions. Involves a commitment of a block of time away from campus. Not open to students who have taken 111B-S.

Units: 3
Course Typically Offered: Spring

ANTH 115. World Cultures
An examination of contemporary issues in anthropology based on evidence from both classical and modern ethnographies. Considers strategies of qualitative research and reporting, including ethics and the application of ethnographic research in modern societies. (Formerly ANTH 129T)

Units: 3
Course Typically Offered: Spring

ANTH 116W. Anthropology of Religion
Prerequisites: G.E. Foundation and Breadth Area D, satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement, to be taken no sooner than the term in which 60 units are completed. Examines the patterned belief systems of the world's tribal, peasant, and sectarian societies. Stresses the role of religion in individual and group perception, cognition, ritual, and social organization. Topics include myth, magic, shamanism, mysticism, witchcraft, trance, hallucinogens, and cultism. Meets the upper-division writing skills requirement for graduation. G.E. Integration ID. (Formerly ANTH 150W)

Units: 3
Course Typically Offered: Fall, Spring, Summer

ANTH 117. Anthropology of Health, Illness, and Healing
A cross-cultural examination of health practices and cultural assumptions on which they are based. Reviews ethnomedicine, ethnopsychiatry, and epidemiology in the health care systems of diverse cultures and of ethnic communities in pluralistic societies such as the United States. (Formerly ANTH 155)

Units: 3
Course Typically Offered: Spring

ANTH 118. Sex, Gender, Biology and Culture
(ANTH 118 same as WS 170.) A cross-cultural and interdisciplinary analysis. Examines theories and frameworks from across the five-fields of anthropology that explain variations in the expression and human experience of sex, gender, and sexuality, maturation, reproduction, and the lifecycle. Also explores how biology shapes culture and how culture shapes biology.

Units: 3
Course Typically Offered: Fall

ANTH 119. Law and Culture
A comparative, holistic perspective on the evolution of law. Examines its natures and origins, the basic assumptions behind legal systems, their cross-cultural expression and effects, and the directionality of legal evolution. (Formerly ANTH 146)

Units: 3
Course Typically Offered: Spring

**ANTH 120. Ethnic Relations and Cultures**
Prerequisite: G.E. Foundation and Breadth Area D. The cultural and social origins of ethnicity, and its opportunities and problems for contemporary mass societies. Offers a critical review of major theories on ethnic politics, economics, and ideology in the light of cross-cultural evidence. Multicultural/International M/I.

Units: 3

Course Typically Offered: Spring

**ANTH 123. Peoples and Cultures of Southeast Asia**
Prerequisite: G.E. Foundation and Breadth Area D. An introductory survey of the cultural and historical adaptations of societies in Burma, Thailand, Laos, Cambodia, and Vietnam; and of Insular societies in Indonesia, Malaysia, and the Philippines. Examines the major effects of culture contact between East and West. Multicultural/International M/I.

Units: 3

Course Typically Offered: Fall

**ANTH 124. Peoples and Cultures of East Asia**
Examines cultural pluralism. Considers cultural adaptations and change among minorities such as Moslems, Tibetans, and Mongolians in China, and ethnic groups of Japan and Korea. Outlines kinship, religion, organization, and technological factors in the Asiatic culture complex.

Units: 3

Course Typically Offered: Spring

**ANTH 125. Tradition and Change in China and Japan**
(ANTH 125 same as HUM 140.) Examines the current aspirations and problems of the Chinese and Japanese in terms of their traditional cultures, and explains how their histories, values, world views, and intellectual traditions affect their lifestyles and their international relations today. Multicultural/International M/I.

Units: 3

Course Typically Offered: Spring

**ANTH 126W. Asian Eats: Asian American Foodways**
(ANTH 126W same as ASAM 151W.) This is a writing class that explores these various unknown stories of Asians and their foodways. Meets the upper-division writing skills requirement for graduation.

Units: 3

Course Typically Offered: Spring

**ANTH 128. Environmental Anthropology**
Examines the interactions between environment and human culture. Specific topics include theoretical and empirical trends in environmental anthropology, materialist and cognitive approaches to human-environment interactions, human culture in ecosystem perspective, religion and ecology, and contemporary environmental movements.

Units: 3

Course Typically Offered: Fall

**ANTH 130. Peoples and Cultures of the Southwest**
A survey of Native American cultures of the Southwestern United States and Northwestern Mexico from their prehistoric origins to the present. Emphasis is placed on cultural continuity and change during the past 400 years of contact with western culture. (Formerly ANTH 127)

Units: 3

Course Typically Offered: Fall

**ANTH 135. Muslim Communities in the Middle East**
A survey of both rural and urban Muslim cultures and societies in the Middle East. Emphasizes the variety of lived experiences of Islam, gender and ethnic relations, and the impact of the West.

Units: 3

Course Typically Offered: Fall

**ANTH 138T. Topics in Cultural Anthropology**
Prerequisite: varies with title. Special studies in the theory and practice of organized cooperation and conflict in nature and culture. (Formerly ANTH 149T)

Units: 1-6

Course Typically Offered: Fall, Spring

**ANTH 140. Contemporary Archaeology**
Examines archaeological theory (both historical and contemporary) as well as methods and techniques used by archaeologists to gather, analyze, and interpret data. (Formerly ANTH 106)

Units: 3

Course Typically Offered: Fall

**ANTH 141. Prehistory of North America**
Traces the development of Native American cultures from the Arctic to Mesoamerica, from the peopling of the continent to early historic times. Examines the archaeological evidence for the antiquity, spread, and variation of cultural adaptations to changing ecological conditions. (Formerly ANTH 131)

Units: 3

Course Typically Offered: Spring

**ANTH 142. Old World Prehistory**
Examination of current knowledge of the prehistory of one area of the Old World. Chronologies, current findings, and important issues in theory method are reviewed. Consideration of these matters in relation to work in archaeology throughout the world and to work in closely related disciplines such as biology and geology. Some historic archaeology may also be included. Areas include Europe, Asia, the Middle East, Africa, and Australia. (Formerly ANTH 132)
ANTH 143. Archaeology and Prehistory of California
Origins and prehistory of the California Native Americans. Examination of the archaeological record, both statewide and regionally, with emphasis on adaptations to natural and social environments from 12,000 B.P. until early historic times. (Formerly ANTH 139T)
Units: 3
Course Typically Offered: Fall

ANTH 145. Cultural Resources Management
Prerequisites: G.E. Foundation and Breadth Area D. Provides an in-depth overview of historic and prehistoric cultural resources (districts, sites, buildings, and objects), their significance, and their management in the U.S. Topics include the legal context for CRM, identifying and evaluating cultural resources, assessing effects, treatment planning, and careers in CRM. G.E. Integration ID. (Formerly ANTH 139T)
Units: 3
Course Typically Offered: Fall
GE Area: ID

ANTH 159T. Topics in Archaeology
Prerequisite: varies with title. Special studies in archaeological methods, techniques, history and theory, or of prehistoric culture areas not covered in the regular curriculum. (Formerly ANTH 139T)
Units: 1-6
Course Typically Offered: Fall, Spring

ANTH 161. Bio/Behavioral Evolution of the Human Species
Prerequisite: G.E. Foundation and Breadth Area B. Examines the evolution of the human species and its relationship to living and extinct primates. Explores the biological basis of human culture. Integrates evolutionary biology, geochronology, and anthropology in order to understand the bio/behavioral nature of modern man. G.E. Integration IB.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: IB

ANTH 162. Primates
An introduction to the study of primate biological and behavioral evolution. Explores sociobiological theory in order to explain the unity and diversity of social behavior in prosimians, monkeys, and apes.
Units: 3
Course Typically Offered: Fall

ANTH 163. Human Variation
A cross-cultural examination of variations in human morphology, physiology, and biochemistry. Establishes the correlation between variations in human biology and variations in climate, culture, nutrition, and disease.
Units: 3

ANTH 164. Human Osteology
Introduces a range of analytic techniques for extracting information from human skeletal remains: sexing and aging, osteometry, odontometry, the examination and diagnosis of epigenetic traits and pathological lesion, and the statistical interpretation of skeletal data.
Units: 3
Course Typically Offered: Spring

ANTH 169T. Topics in Physical Anthropology
Special studies of the discovery and interpretation of information in physical anthropology, and of the application of this subdiscipline in legal, medical, and scientific research.
Units: 1-6
Course Typically Offered: Fall, Spring

ANTH 169T. Human Paleopathology
This course is a survey of diseases that manifest on the human skeleton and hard tissues of the body. In this course, students will learn how to analyze and identify these diseases from a clinical perspective through all life stages from radiographic analysis, macroscopic analysis, and photographic analysis. Students will learn how to differentiate historic cases of the skeletal diseases covered from their modern manifestations. (Offered Spring 2020)
Units: 3

ANTH 190. Independent Study
See Academic Placement --> Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

ANTH 192. Directed Readings
Supervised reading on a student-selected topic outside the regular curriculum, conducted through regular consultation with a faculty sponsor.
Units: 1-3
Course Typically Offered: Fall, Spring

ANTH 193I. Internships in Anthropology
Interns will work on a variety of tasks involving the analysis and curation of archaeological collections; design and curation of museum displays; the collection and analysis of physical anthropological data, including working with primates at local zoos; and ethnographic data collection. (Formerly ANTH 109)
Units: 1-6
Course Typically Offered: Fall, Spring

ANTH 194. Honors Thesis
Development of a student report or paper into a manuscript of professional and publishable quality. Requires approval by
an Honors Committee of three faculty members. (Formerly ANTH 199)
Units: 1-3
Course Typically Offered: Fall, Spring

ANTH 195. Colloquium
Each spring semester students and department faculty will meet three times to discuss current problems in the field of anthropology. These three hour seminars will be led by a faculty member. Students will be expected to do all assigned readings and complete a paper on one of the topics discussed.
Units: 1
Course Typically Offered: Fall

ANTH 196. Seminar: Anthropological Futures
Culminating experience course in which students reflect on their experiences as anthropologists in training and assess the way they can carry their knowledge, skills and competencies forward.
Units: 2
Course Typically Offered: Spring

ANTH 197T. Current Topics in Anthropology
Subject matter of these courses combines topics from the various subfields of anthropology, providing the student with a more integrated view of the discipline.
Units: 1-6
Course Typically Offered: Fall, Spring

ASAM 15. Introduction to Asian Americans
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Historical, social, and psychological factors in the changing status and identity of Americans from Asia. Examines variables such as cultural heritage, family organization, intergenerational conflict, and the experience of racism in the changing world of Asian Americans. G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall, Spring

ASAM 30. Japanese Americans in the United States
A survey of social adaptations and cultural changes among Japanese Americans in different communities such as California and Hawaii. Considers identity, marginality, acculturation, and cultural traditions in Japan and in American communities.
Units: 3
Course Typically Offered: Fall

ASAM 110. Asian American Communities
Prerequisites: G.E. Foundation and Breadth Area D. A multidisciplinary study of Asian American communities and their relations with the larger society. Analyzes values, lifestyles, processes of group identity and boundary maintenance, social organization, and cultural change. Examination of Chinese, Japanese, Filipino, and other Asian American subcultures. Multicultural/International M/I.
Units: 3
Course Typically Offered: Fall, Spring

ASAM 138. Asian American Women
(ASAM 138 same as WS 138) Addresses race, ethnic, and class issues from the vantage point of Asian American women. For Asian American and Southeast Asian communities, the status of women has long been neglected. Yet women play an important role in the family and its economy even as they enter new roles in U.S. society. Helpful to students in sciences and applied fields.
Units: 3

ASAM 140. Hmong, Laotian and Cambodian American Experience
The Southeast Asian American population in the central San Joaquin Valley is 44,542 and Hmong, Laotians and Cambodians make up 6.18% of the district population. This course focuses on the experience of Hmong, Laotian, and Cambodian refugees and immigrants who have resettled in the United States since the end of the Vietnam War in 1975. Beyond refugee status and the Vietnam War, students also explore how ethnicity, race, class, gender, education, and generation shapes their communities in Fresno and America.
Units: 3
Course Typically Offered: Spring

ASAM 151W. Asian Eats: Asian American Foodways
(ANTH 126W same as ASAM 151W.) This is a writing class that explores these various unknown stories of Asians and their foodways. Meets the upper-division writing skills requirement for graduation.
Units: 3

ASAM 180T. Topics in Asian American Studies
Prerequisites: ASAM 15, permission of instructor. Detailed consideration of a single topic concerning the past or present position of Asian Americans in U.S. society.
Units: 3, Repeatable up to 6 units

ASAM 190. Independent Study
See Academic Placement -- Independent Study. Approved for SP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

ASAM 195. Diversity in the United States: Race and Gender Issues
Units: 3
ART & DESIGN

ART 1. Art Forms
Slide lecture-discussion. An introduction to art/seeing and appreciating the visual world around us. G.E. Breadth C1. (Course fee, $5)
Units: 3
Course Typically Offered: Fall, Spring GE Area: C1

ART 13. Design
Exploration of basic art concepts through two- and three-dimensional design problems. Field trips may be required. G.E. Breadth E1. (6 lecture-lab hours)
Units: 3
Course Typically Offered: Fall, Spring GE Area: E1

ART 14. 3 Dimensional Design
The course introduces students to the basic elements and principles of 3D design (6 lecture-lab hours). Students will develop the ability to apply these elements and principles to their own design or artwork within the context of a given project.
Pre-requisite: ART 13.
Units: 3
Course Typically Offered: Fall, Spring

ART 20. Drawing
Introductory experiences in drawing using observation, imagination, and expressive means. Fundamentals of form, space, techniques, and composition will be studied. G.E. Breadth C1. (6 lecture-lab hours).
Units: 3
Course Typically Offered: Fall, Spring GE Area: C1

ART 21. Figure Drawing
Introductory course in the basic concepts of figure drawing problems and techniques. Drawing from the nude model, both male and female, is basic to this course. (6 lecture-lab hours) (Course fee, $35)
Units: 3
Course Typically Offered: Fall, Spring

ART 24. Printmaking
Introduction to the printmaking processes of intaglio, lithography, and woodblock printing. (6 lab hours) (Course fee, $50)
Units: 3
Course Typically Offered: Fall, Spring

ART 25. Intaglio Processes
Studio class offering in printing in the intaglio process using such techniques as etching, drypoint, aquatint, and soft-ground on metal plates. Printing in black ink as well as color will be covered. (6 lab hours) (Course fee, $30)
Units: 3

ART 27. Screenprinting
Investigation into techniques of printing with a screen. Paper, film, tusche, and glue techniques for creating printing stencils will be covered. (6 lab hours) (Course fee, $50)
Units: 3
Course Typically Offered: Fall

ART 30. Introduction to Photography
Introductory course in photography. Basic theoretical and practical aspects of the photographic process as an art form. Introduction to historical and contemporary photographic practices in art. Digital camera with adjustable aperture and shutter speed controls required. (6 lecture-lab hours) (Course fee $25). FS
Units: 3
Course Typically Offered: Fall, Spring

ART 35. Historic and Contemporary Issues in Photography
Introduction to the history of photography from the early 19th century to the present. Examines contemporary issues in photography and the role of photography as a social commentary on culture as an approach to cultivate lifelong learning.
Units: 3

ART 37. Introduction to Computer Art
Prerequisites: ART 13. Introduction to the practice of creating art through the use of the computer. Integrates concepts from painting, drawing, design, and computer-specific processes. (6 lecture-lab hours) (Course fee: $35)
Units: 3
Course Typically Offered: Fall, Spring

ART 40. Painting
Introduction to painting processes through creative experiences and critiques. Emphasis on concepts and processes of contemporary painting. G.E. Breadth C1. (6 lecture-lab hours).
Units: 3
Course Typically Offered: Fall, Spring GE Area: C1

ART 45. Watercolor
Introduction to techniques in watercolor painting with emphasis on transparencies. (6 lecture-lab hours)
Units: 3

ART 50. Beginning Sculpture
Introductory course in the experiential application of the methods and materials of sculpture. Creative expression and exploration of sculptural form through ideas and aesthetic concepts. Studio safety. G.E. Breadth C1. (6 lab hours) (Course fee, $25)

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ART 60. Beginning Ceramics
A survey of ceramic materials and their functions in the arts. Basic studio practices in the handbuilding processes, glazing, and throwing on the potter's wheel. (6 lab hours) (Course fee, $30)
Units: 3
Course Typically Offered: Fall, Spring

ART 60UNTRK. Beginning Ceramics
A survey of ceramic materials and their functions in the arts. Basic studio practices in the handbuilding processes, glazing, and throwing on the potter's wheel. (6 lecture-lab hours) (UNITRACK)
Units: 3

ART 70. Crafts
Fundamental exploration of several media (may include any of fiber, wood, leather, clays, paper) with emphasis on understanding the potential of the various materials for crafts. Field trips may be required. (6 lecture-lab hours)
Units: 3
Course Typically Offered: Spring

ART 80. Beginning 3D Digital Art - Modeling
Prerequisite: ART 37 or GD 37 or permission of the instructor. Recommended ART 14 or ID 112. Introduction to three-dimensional digital modeling, texturing, lighting, and rendering in a fine arts context using Autodesk Maya. Intermediate rendering topics are included. (6 lecture-lab hours)
Units: 3
Course Typically Offered: Fall

ART 102. Ideas of Visual Culture: Art, Media, and the Computer
Prerequisites: G.E. Foundation and Breadth Area C. Overview of ideas in visual culture and critical theory. Examines visual culture in the form of video, film, new works in visual art, the computer, and visual spectacles in contemporary culture. G.E. Integration IC. (3 lecture/lab hours)
Units: 3
GE Area: IC

ART 106. Art Tours
Explore the extraordinary art and artistic experience in California by touring museums and galleries in Los Angeles and San Francisco. Two weekend trips include exposure to diverse collections of art in the state. (Course fee, $220)
Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

ART 109T. Topics in Studio Art
Prerequisite: permission of instructor. Specific advanced studio processes not normally covered in regular course offerings. Areas offered may be drawing, painting, ceramics, sculpture, photography, printmaking, design, crafts, motion-picture, art education, computer graphics. (6 lecture-lab hours)
Units: 1-3

ART 109T. Public Art: Mural Project
This studio art course introduces theoretical and practical aspects of murals as public art. The course includes an actual practicum of creating a large-scale mural using various techniques, materials and processes. The course will enable students to control scale, color, specific techniques and safety measures aimed at public spaces. The objective of this course is for students to develop understanding about some of the social roles of public art and the impact of murals in communities, based upon its historical and contemporary applications. (Offered Fall 2019 and Spring 2020)
Units: 3

ART 109T. Digital Concept and Character Development
A topics course teaching fundamental digital art skills relevant to the effective creation of characters and environments in both vector and bitmap programs. The course is divided into thirds: exercises and techniques that develop confidence and speed in the beginning, building upon fundamental techniques by developing character and environmental designs in several styles, and refining skills and encouraging the development of the student's own style at the end. Art techniques include realistic lighting, atmospheric perspective, anatomy, facial expressions, costuming, and designing props. (Offered Fall 2019 & Spring 2020)
Units: 3
ART 109T. Senior Professional Practices
Advanced studio art students will prepare work for a graduating senior exhibition and professional portfolio development. This course plans to inform students about the realities of postgraduate life by honing skills needed to navigate the professional world. This includes development of a portfolio and written artist statement, web representation, self-promotional materials, creative entrepreneurship and professional practice alongside hands-on experience preparing, hanging, lighting and planning a culminating senior exhibition. (Offered Spring 2020)
Units: 3

ART 109T. Prison Art
A topics course where students will instruct prison inmates through artistic outreach. Students will develop and present a program to the prison inmates that integrates their knowledge of art history, cultural elements, and artistic techniques into practical exercises. (Offered Fall 2019 and Spring 2020)
Units: 3

ART 109T. Alternative Process Photography
This course will cover historical 19th Century techniques in nonsilver alternative process photographic printing, such as Cyanotypes, Van Dyke, Brown, Salt Prints, and Gum Bichromate Printing, along with contemporary innovations not technologically available to historical practitioners, such as using digital internegatives to allow the easy creation of composite images, enlargement, and precise contrast control. Many of the original historical processes were largely abandoned and forgotten as the photographic practice became standardized to silver gelatin and dye coupler based prints, but are now undergoing a renaissance of interest and research as artists rediscover the expressive possibilities inherent in these methods. (Offered Spring 2020)
Units: 3

ART 112. Gallery Techniques
Introduction to museum practices related to exhibition selection, design, and installation techniques. Field trips, lectures, projects, and critiques. (6 lecture-lab hours)
Units: 3, Repeatable up to 9 units
Course Typically Offered: Fall, Spring

ART 113. Design
Prerequisite: ART 13. Continuation of the exploration of two- and three-dimensional design problems. (6 lecture-lab hours)
Units: 3, Repeatable up to 9 units

ART 116. Interaction of Color
Pre-requisite: ART 13. Interaction of color as developed by Joseph Albers; basic design principles in connection with color work. (6 lecture-lab hours)
Units: 3, Repeatable up to 9 units
Course Typically Offered: Fall, Spring

ART 120. Intermediate Drawing
Prerequisite: ART 20. Investigation of intermediate concepts through the techniques of the drawing medium. (6 lecture-lab hours)
Units: 3
Course Typically Offered: Fall

ART 120T. Portfolio Preparation
Units: 1

ART 121. Figure Drawing
Prerequisite: ART 21. The human figure and its relevancy to advanced drawing concepts and techniques, emphasis on individual exploration in studio problems. Drawing from the nude model, both male and female, is basic to this course. (6 lecture-lab hours) (Course fee, $35)
Units: 3, Repeatable up to 9 units
Course Typically Offered: Spring

ART 123. Advanced Drawing
Prerequisites: ART 20 and ART 120. Investigation of advanced approaches and expanded concepts in the drawing medium; development of independent research and personal direction in drawing (6 lecture-lab hours).
Units: 3, Repeatable up to 9 units
Course Typically Offered: Spring

ART 125. Lithography
Prerequisite: ART 24. Studio class designed for advanced work in stone and metal plate printing in both black as well as color inks. Emphasis placed on imagery development. (6 lab hours) (Course fee, $50)
Units: 3, Repeatable up to 9 units
Course Typically Offered: Fall

ART 126. Intaglio Processes
Prerequisite: ART 24 or ART 26. Studio class designed to offer advanced work in intaglio printing processes such as etching, drypoint, and aquatint in black ink as well as color. Multiple plate printing will also be covered. Emphasis placed on imagery development. (6 lab hours) (Course fee, $50)
Units: 3, Repeatable up to 9 units
ART 127. Screenprinting  
Prerequisite: ART 27. Investigation into techniques of screenprinting. Paper, film, tusche, glue, and photo techniques for creating printing stencils will be covered. Emphasis placed on imagery development. (6 lab hours) (Course fee, $50)  
Units: 3, Repeatable up to 9 units  
Course Typically Offered: Fall

ART 130. Intermediate Black and White Photography  
Prerequisite ART 30 or equivalent and permission of the instructor. Emphasis on black and white photography in the darkroom. Increased exploration into the medium for individual expression and discovery. Further studies in photographic history, theory and contemporary issues (6 lecture-lab hours) (Class fee, $55) FS  
Units: 3, Repeatable up to 9 units  
Course Typically Offered: Fall, Spring

ART 133. Alternative Approaches to Digital Imagery  
Prerequisite: ART 30 & ART 37 or equivalent. Approaches to non-traditional photography and the manipulated image in digital photography with an emphasis on producing personal imagery. (6 lecture-lab hours) (Course fee, $50)  
Units: 3, Repeatable up to 6 units

ART 140. Intermediate Painting  
Prerequisite: ART 40. Individual investigation of advanced aesthetic concepts; continued search into personal direction. (6 lecture-lab hours)  
Units: 3  
Course Typically Offered: Fall, Spring

ART 141. Advanced Painting  
Prerequisite: ART 140. Designed primarily for students with two or more semesters of experience in painting. Emphasis on individual involvement in the painting process aiming toward advanced formal and technical expression. (6 lecture-lab hours)  
Units: 3, Repeatable up to 9 units  
Course Typically Offered: Fall, Spring

ART 152. Intermediate Sculpture  
Prerequisite: ART 50. Continued investigation in the experiential application of selected methods and materials of sculpture. Emphasis on promoting a greater awareness of sculptural form and development of ideas and aesthetic concepts. (6 lab hours) (Course fee, $25)  
Units: 3  
Course Typically Offered: Fall, Spring

ART 153. Advanced Sculpture  
Prerequisite: ART 152. Individual involvement in the studio practice of sculpture. Emphasis focused on conceptual development, refinement of technique, choice of materials, professional presentation, and portfolio. (6 lab hours) (Class fee, $25)  
Units: 3, Repeatable up to 9 units  
Course Typically Offered: Fall, Spring

ART 155. Sculpture: Foundry  
Prerequisite: ART 50 or permission of instructor. Foundry techniques: mold-making, wax sculpting, metallurgical technology, and patination. Research of historical and contemporary approaches to the art of metalcasting. (6 lab hours) (Course fee, $50)  
Units: 3, Repeatable up to 9 units  
Course Typically Offered: Fall, Spring

ART 160. Intermediate Ceramics  
Prerequisite: ART 60. Emphasis will be on promoting a greater awareness of form as developed on the potter's wheel. A concentrated study of surface treatments and their integration with clay forms. (6 lab hours) (Course fee, $30)  
Units: 3, Repeatable up to 9 units  
Course Typically Offered: Fall, Spring

ART 161. Advanced Ceramics  
Prerequisite: ART 160. Advanced study in ceramic art. Individual projects in selected ceramic areas with emphasis on showing and portfolio presentation of work. (6 lab hours) (Course fee, $30)  
Units: 3, Repeatable up to 9 units  
Course Typically Offered: Fall, Spring

ART 165. Ceramic Glazes  
Prerequisites: ART 160, permission of instructor. Concentrated study in glazes through the empirical methods with some discussion on historical and technical integration of glazes with clay forms. (6 lecture-lab hours) (Course fee, $40)  
Units: 3, Repeatable up to 9 units  
Course Typically Offered: Fall

ART 166. Glass Blowing Studio  
Prerequisites: ART 13, ART 20, and ART 60, or permission of instructor. A course in studio glass blowing techniques with technical information on glass compositions, furnace design, and construction. (6 lab hours) (Course fee, $50)  
Units: 3, Repeatable up to 9 units
Course Typically Offered: Fall, Spring

**ART 170. Crafts**
Prerequisite: ART 70. Advanced design in a variety of materials. Study of contemporary designer craftsmen. (6 lecture-lab hours)
Units: 3, Repeatable up to 9 units
Course Typically Offered: Spring

**ART 171. Textile Design: Dyeing and Printing**
Design relating to fabrics, tie dye, batik, and silk screen. Field trips may be required. (6 lecture-lab hours) (Course fee, $15)
Units: 3, Repeatable up to 9 units
Course Typically Offered: Spring

**ART 177S. Community Crafts Workshop**
Introductory studio experiences in traditional crafts media in community service-learning settings. Fundamental exploration of several media (e.g. clays, plaster, fibers, leather, wood); understanding materials; historical and cultural context of art products. Field trips required.
Units: 1-3
Course Typically Offered: Spring

**ART 179. Development of Artistic Expression**
Art materials and techniques, as they apply to the elementary school curriculum; introduction to current philosophies in art education, theories of the development phases of artistic expression in children. Field trips may be required. (6 lecture-lab hours) (Course fee, $15)
Units: 3, Repeatable up to 9 units
Course Typically Offered: Fall, Spring

**ART 181. 2-D Animation 1**
Prerequisites: ART 37 or GD 37 or permission of instructor. An introduction to the process of creating animation in a fine arts context. Students will learn the fundamentals of creating animations with traditional, camera-based and digital processes. (6 lab hours) (Formerly ART 107)
Units: 3
Course Typically Offered: Fall, Spring

**ART 182. Large Format Photography**
Prerequisite: ART 30 or equivalent and permission of instructor. Study of the large format camera and its creative application. Emphasis on individual assistance in both field and laboratory work. Introduction to selective exposure and development control, optical effects, and applied compositional design. (2 lecture, 3 lab hours) (Course fee, $25)
Units: 3, Repeatable up to 9 units

**ART 183. Extended Projects in Photography**
Prerequisite: ART 30 or equivalent and permission of instructor. Individual formulation of exploratory multi-image essays on a specific theme. Emphasizes individual conceptual goals and acquiring communicative skills appropriate to medium. Further photographic theory and its practical application to individual creative objectives. (6 lecture/lab hours) (Course fee, $25)
Units: 3, Repeatable up to 12 units

**ART 184. 2D Animation 2**
Prerequisites: ART 101, 181 or permission of instructor. Building upon ART 181 this course explores intermediate concepts in 2D animation and compositing within a fine arts context. Both traditional and digital animation processes are explored. (6 lecture-lab hours)
Units: 3
Course Typically Offered: Spring

**ART 185. Color Photography**
Prerequisite: ART 30 or equivalent. Emphasis is on both technical and aesthetic expression of digital color photography, from initial image capture to finished print along with color symbolism and composition. Introduction to contemporary color photographers. (6 lecture-lab hours) (Course fee, $55)
Units: 3, Repeatable up to 9 units

**ART 186. Intermediate 3D Digital Art - Animation**
Prerequisites: ART 80 and ART 181. This course explores 3D digital animation in a fine arts context. The course focuses on 3D keyframe techniques, hierarchies and an introduction to particles. (6 lab hours) (Formerly ART 180)
Units: 3
Course Typically Offered: Spring

**ART 187A. Advanced 3D Digital Art - Environment**
Prerequisite: ART 101, 186 or permission of the instructor. Building upon ART 186 this course explores advanced techniques used in creating complex 3D environments. Both realistic and virtual spaces will be explored with an emphasis on conceptual and historical aspects. (6 lab hours)
Units: 3
Course Typically Offered: Fall - even

**ART 187B. Advanced 3D Digital Art - Indirect Animation**
Prerequisite: ART 101, 186 or permission of the instructor. Building upon ART 186 this course explores animation techniques beyond keyframing. Topics include advanced dynamics, advanced particles, external influences, and scripting. There will be a special focus on non-narrative works. (6 lab hours)
Units: 3
ART 187C. Advanced 3D Digital Art - Character  
Prerequisite: ART 101, 186 or permission of the instructor. Advanced concepts in character creation and animation. Techniques explored include character modeling, texturing, rigging, and animation. Pre-rigged characters will be utilized to fully explore animation techniques. (6 lab hours)  
Units: 3

Course Typically Offered: Fall - odd

ART 188. Digital Video Art  
Introduction to the medium of video art. Students will examine video concepts and forms through production, readings, and discussions, as well as by viewing students' and artists' works. (6 lecture/lab hours)  
Formerly ART 109T  
Units: 3, Repeatable up to 9 units

ART 190. Independent Study  
See Academic Placement - Independent Study. Approved for RP grading. (Course fee, $30)  
Units: 1-3

ART 198I. Internship in Art  
Prerequisites: permission of instructor and sponsoring agency. Experience in art related professions with agency under the Department of Art and Design supervision. Maximum credit toward an art major, 6 units. CR/NC grading only. (Minimum of 3 field hours per week per unit.)  
Units: 1-6

ART 220T. Topics in Studio Processes  
Prerequisite: permission of instructor. Investigation of advanced studio topics selected by the department. Coursework includes studio productions, their critiques and evaluations.  
Units: 3, Repeatable up to 9 units

ART 230. Seminar in Art Theory  
Prerequisite: permission of instructor. Theories of the visual arts as developed by artists, critics, and philosophers, and their application to art criticism in our time. Oral presentation and defense of critical papers required. Meets the graduate writing skills requirement.  
Units: 3, Repeatable up to 9 units

ART 240. Seminar in Art Studio  
Prerequisite: permission of instructor. Work individually with selected staff in chosen area of concentration. Concurrent obligation to meet regularly scheduled seminars for group progress reports and critiques.  
Units: 3, Repeatable up to 15 units

ART 241. Graduate Painting  
Prerequisite: ART 141 or portfolio for review. Studio course in painting for graduate students. Selected concepts and problems in contemporary painting. Emphasis on individual exploration and development of personal direction. (6 lecture-lab hours)  
Units: 3, Repeatable up to 9 units

ART 253. Graduate Sculpture  
Prerequisite: ART 153 or submission of portfolio for review. Faculty guided independent research and studio practice. Includes consultation, critiques, and portfolio development. Relates sculptural form to ideas, aesthetic concepts, and contemporary issues. Emphasis on professionalism and personal direction. (6 lecture-lab hours)  
Units: 3, Repeatable up to 9 units

ART 260. Seminar in Art History  
Prerequisites: 6 units of upper-division art history and permission of instructor. Research problems applicable to art history students or studio artists. Meets the graduate writing skills requirement.  
Units: 3, Repeatable up to 9 units

ART 290. Independent Study  
See Academic Placement - Independent Study. Approved for RP grading. (Course fee, $30)  
Units: 1-3

ART 298. Project  
Prerequisite: permission of the Art and Design Department graduate coordinator; see Criteria for Thesis and Project. Preparation, production, design, and installation of original works produced while engaged in the graduate program. Exhibit committee must approve of the work, location, and quality of installation. Abstract required. Approved for RP grading. (Course fee, $30)  
Units: 2-6

ART 298C. Project Continuation  
Pre-requisite: Project 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.  
Units: 0

ART 299. Thesis  
Prerequisite: permission of the Art and Design Department graduate coordinator; see Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.  
Units: 2-6
ART 299C. Thesis Continuation
Pre-requisite: Thesis 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

ART 421T. Dgtl/Film Photo
Units: 3

ART 431T. Music/Movement
Units: 3

ART 432T. Strytell - Int Art
Units: 3

ART 621T. Glass/Sculpture
Units: 3

ART 621T. Dgtl/Film Photo
Units: 3

ART 631T. Music/Movement
Units: 3

ART 632T. Strytell-Int Art
Units: 3

ARTDS 7A. Art and Design Fundamentals I
Introductory success strategies for Art and Design students through orientation to university resources, academic skills, and the arts community. Topics include academic skills, time management, wellness, communication, and interacting with arts communities. Internet-assisted. Service-learning and field trips required.
Units: 1

ARTDS 7B. Art and Design Fundamentals II
Prerequisite: ARTDS 7A. Intermediate success strategies for Art and Design students through orientation to university resources, academic skills, and the arts community. Topics include academic skills, time management, wellness, communication, and interacting with arts communities. Internet-assisted. Service-Learning and field trips required.
Units: 2

ARTDS 9T. Studio Topics in Art and Design
Specific introductory studio processes not covered in regular course offerings. Areas offered may be drawing, painting, ceramics, sculpture, photography, printmaking, design, crafts, motion picture, art education, computer graphics, graphic design, and interior design.
Units: 1-3

ARTDS 10T. Lecture Topics in Art and Design
Specific lecture area not normally covered in regular course offerings in art, graphic design, or interior design. Topics may include African American art, aesthetics of electronic imagery, careers in art and design, portfolio preparation, interior design, and graphic design.
Units: 1-3

ARTH 10. The Ancient Medieval Worlds
An introductory survey of the arts of the ancient and medieval worlds, beginning with the Paleolithic and including Near Eastern, Egyptian, and European (Aegean, Greek, Roman, medieval) traditions through the mid-14th century. G.E. Breadth C1.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C1

ARTH 11. The Early Modern World
An introductory survey of Western art from the Renaissance through the 18th century, including Mannerism, Baroque, Rococo, and Neoclassicism from the mid-14th century to the end of the 18th century. G.E. Breadth C1.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C1

ARTH 12. Asian Art
An introductory survey of the arts of Asia from prehistory to the twentieth century, including but not limited to, art traditions of India, China, Japan and Southeast Asia. G.E. Breadth C1.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C1

ARTH 109T. Topics in Art History
Specific areas in art history not normally covered in the regular course offering. Possible topical areas include Arts of the South Pacific, Buddhism, Chinese Painting, Happenings, History of Modern Art through Film, Museums and Monuments of Europe, Fountains of Baroque Rome, Popes and Patrons of Renaissance Europe, 17th Century Holland, and the Rise of the Secular in Art.
Units: 1-3

ARTH 109T. Arts of Colonial Mexico
This course aims to provide a comprehensive survey of the major artistic and architectural manifestations of colonial Mexico and other territories of the Viceroyalty of New Spain from ca. 1520-1820s. Through lectures, readings, multimedia, discussions, we will examine the overseas expansion of the Spanish empire and the role played by the arts in the process of colonization, evangelization, accommodation, and
construction of multicultural and multi-ethnic societies in the Novohispanic territories. (Offered Spring 2020)

Units: 3

**ARTH 109T. Museum Studies**
The course investigates historical, theoretical and practical issues of Museum Studies considering the history of museums, and the museum's main activities of collecting, exhibiting, and educating. Although the course looks specifically at art museums, the basic principles apply to other types of museums such as history, science and nature. The first part of the course focuses on the history of the museum investigating its social, cultural, and political role from its origin to the present day. The student gains insight into the museum's organizational structure and various museum careers. The second part of the course provides an understanding of museum collections and exhibitions. The discussions focus on the importance of the object, the building and managing of collections and the curating of exhibitions. The final part of the course considers the museum's educational programs in the context of its audiences and various interpretative methods. The course also includes a field trip looking behind the scenes of a local museum.

Units: 3

**ARTH 120. Italian Renaissance**
Artistic revival of classical antiquity in Italy between 1300-1550.

Units: 3

**ARTH 122. Northern Renaissance**
Painting and sculpture from the Netherlands, France, and Germany between 1300-1550.

Units: 3

Course Typically Offered: Fall

**ARTH 124. Italian Baroque**
Baroque art from its conception in Rome to its dispersal throughout Italy from 1600-1750.

Units: 3

Course Typically Offered: Spring

**ARTH 126. Northern Baroque**
Diffusion of Italian Baroque art to the Netherlands, France, Spain, Germany, and Austria between 1600-1750.

Units: 3

Course Typically Offered: Spring

**ARTH 131. Nineteenth Century Modern Art**
A more developed critical look at modern art in its relationship to the needs of the social political context of the 19th century.

Units: 3

**ARTH 132. Twentieth Century Modern Art**
A more developed critical look at modern art in its relationship to the needs of the social political context of the 20th century, up to the mid-1950s.

Units: 3

Course Typically Offered: Fall

**ARTH 136. Contemporary Art**
A comprehensive survey of contemporary art focusing on the issue of postmodernism from the mid-1950s onward.

Units: 3

Course Typically Offered: Spring

**ARTH 160. Africa**
Sculpture, painting, architecture, festivals, and personal adornment of sub-Saharan Africa.

Units: 3

Course Typically Offered: Spring

**ARTH 170. Native North American**
Arts of the indigenous North American cultures from the Arctic to the American Southwest.

Units: 3

Course Typically Offered: Spring

**ARTH 173. Pre-Columbian Mexico**
Art of the Olmec through the Aztec cultures.

Units: 3

Course Typically Offered: Fall

**ARTH 175. Pre-Columbian Andes**
Art of the Chavin through the Inca cultures.

Units: 3

Course Typically Offered: Fall

**ARTH 180. Methods and Theories of Art History**
Prerequisites: ARTH 10 and ARTH 11. It is strongly recommended that students complete at least 2 upper-division (100-level) Art History courses before enrolling in ARTH 180. Methods and theories of art historical research and interpretation.

Units: 3

Course Typically Offered: Fall

**ARTH 190. Independent Study**
See Academic Placement - Independent Study. Approved for RP grading.

Units: 1-3

Course Typically Offered: Fall, Spring

**CI 161. Mth Mtl Art**
Units: 3, Repeatable up to 999 units

EHD 154B. Final Student Teaching Seminar - Art
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 1

EHD 155B. Studt Tchg Art
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

GD 35. Visual Communications Fundamentals
Foundational visual and cognitive organizational processes for the practice of visual communication, presented through lectures and applications through studio exercises. Includes visual perception and organization, visual ideation, and visual problem solving processes techniques and principles. (2 lecture, 2 lab hours) (Course fee, $30).
Units: 3
Course Typically Offered: Fall

GD 37. Graphic Design: Computer Imaging
Prerequisites: ART 13, GD 35. Emphasis on basic skills, theories, and principles of graphic design including photo manipulation and illustration software applications as related to the graphic design field. (6 lab hours). (Formerly GD 40) (Course fee, $30).
Units: 3
Course Typically Offered: Fall, Spring

GD 39. Graphic Design: Computer Layout Design
Prerequisite: ART 13, GD 37. Exploration and application of layout design and pre-press software as related to the graphic design field through projects encompassing the basic skills, theories, and principles of graphic design. (Course fee, $30).
Units: 3
Course Typically Offered: Fall, Spring

GD 41. Typography
Prerequisite: ART 13, GD 37. Typographic principles, elements, and techniques. Type classification, selection, design, and layout. Computer projects. (6 lab hours) (Course fee, $30). FS
Units: 3
Course Typically Offered: Fall, Spring

GD 42. Graphic Design
Prerequisite: GD 35 and GD 41 or concurrently. Advertising and graphic design projects taken through steps from thumbnail sketches through rough layouts to computer-generated comprehensive presentations. Emphasis on evaluation of market and audience and development of aesthetic solutions to communication problems. (6 lab hours) (Formerly GID 142) (Course fee, $30).
Units: 3
Course Typically Offered: Fall, Spring

GD 50. Web Design
Prerequisites/co-requisites: GD 41, GD 39. Introduction to web design for graphic designers, focusing on current web standards. Emphasis on page structure, typography and user experience design principles. (6 lab hours). (Course fee, $30).
Units: 3
Course Typically Offered: Fall, Spring

GD 60. Illustration Techniques
Prerequisites: ID 43 or ART 20. Introduction to various traditional drawing and painting techniques. Emphasis on the application of rendering solutions to graphic design problems. (6 lab hours). (Course fee, $5). (Formerly GD 143).
Units: 3
Course Typically Offered: Fall, Spring

GD 135. History of Graphic Design
Prerequisites: ARTH 10 and ARTH 11. A survey of characteristic design approaches, solutions, materials, and technologies, their relationship to popular culture and trends, and their social and political history. Course includes lectures and studio projects. (2 lecture and 2 lab hours) (Course fee, $30).
Units: 3
Course Typically Offered: Fall, Spring

GD 142. User Experience and Interface Design
Prerequisite: GD 42, GD 50. An Intermediate web design class for graphic designers. The class focuses on user experience design methods and practices to improve the usability and aesthetic of a user interface. Students will use user experience methods to engineer the whole experience surrounding a digital environment, emphasizing how data-driven research can improve the layout, hierarchy, typography, and color scheme of a user interface.
Units: 3
Course Typically Offered: Fall

GD 150. Advanced Web Design
Prerequisite: GD 50. Advanced application and exploration of web standards-based web design. Emphasis on user experience design methods, and responsive design solutions. (6 lab hours). (Course fee, $30).

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

GD 153. Data and Design
Prerequisite: GD 150. Introduction to programming as a platform for graphic design. Emphasis on fundamental programming concepts, data visualization, creative exploration, and web integration. (6 hours) (Course fee $30).

Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

GD 155. Designing for Interactions
Prerequisites: GD 150, GD 157. Integration and development of interactive content for web/multimedia, including new upcoming technologies. Emphasis on experimentation & concept development driven by UX & usability research. Introduction to innovative technologies, & UX design research skills/methods. Students will develop self-driven projects over the course of the semester focusing on research, UX, and development/implementation of new technology. (6 lab hours). (Course fee $30).

Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

GD 157. Motion Graphics
Prerequisite: GD 150 (or concurrent). Understand and implement animation principles for time based media. Application of software to create visually integrated, concept driven motion graphics and interactive web animations. Emphasis on research, including usability research, and production of advanced time based media projects.

Units: 3, Repeatable up to 6 units

GD 158. Design Practicum
Prerequisites: GD 150, GD 155. Collaborative design and development of a real-world digital product for a non-profit partner. Emphasis on the iterative design process loop of research and analysis, prototyping, visual design, and evaluation.

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall

GD 159. Immersive Design
Prerequisites: GD 150 and GD 157 or permission of the instructor. This course explores 3D digital modeling and its incorporation into augmented and virtual environments. Students will research and explore different ways to implement augmented and virtual reality. (6 lab hours)

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall

GD 163. Illustration
Prerequisite: GD 60 and ART 116. Understanding how illustration functions with text. Experiences in the conceptualization, and organized development of illustrative images, Creative illustrative strategies applied to design situations. (6 lab hours). (Formerly GD 146, Advanced Rendering).

Units: 3
Course Typically Offered: Fall, Spring

GD 165. Digital Illustration Techniques
Prerequisite: GD 42, GD 60, and GD 163. Introduction to digital illustration, appreciation of its strengths. Applying basic digital illustration techniques to characteristic graphic design problems and formats. (6 lab hours). (Formerly GD 147, Advertising Illustration) (Course fee $30).

Units: 3
Course Typically Offered: Fall, Spring

GD 167. Advanced Illustration
Prerequisites: GD 163, Illustration. Advanced techniques in non-digital illustration. Creative illustrative visual solutions to a range of problems in graphic design, including complex, and abstract subjects. Developing distinctive individual work. (6 lab hours).

Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

GD 169. Advanced Digital Illustration
Prerequisites: GD 163, and GD 165. Advanced digital illustration techniques. Analyzing and applying components of a visual style. Combining traditional and digital illustrative components. (6 lab hours).

Units: 3
Course Typically Offered: Fall

GD 170. Typographic Design
Prerequisite: GD 41 and GD 42. Advanced principles of typography, including design of typefaces utilizing contemporary software. Exploration of sophisticated typographical projects incorporating commercial and student designed fonts. Emphasis is placed upon typographical experimentation. (6 lab hours). (Formerly GD 141) (Course fee $30).

Units: 3
Course Typically Offered: Fall, Spring

GD 171. Advanced Typographic Design
Prerequisite: GD 170. Creation of unique typefaces for use in typographic solutions to projects such as brand identity, packaging design, environmental graphics, and publication design.
(Course fee $30).
Units: 3
Course Typically Offered: Spring

GD 174. Graphic Systems
Prerequisite: GD 41 and GD 42. Examination of the structures of primary/secondary and co-equal communication systems as applied to identity, packaging and other graphic design projects. (6 lab hours). (Formerly GD 142) (Course fee $30).
Units: 3
Course Typically Offered: Spring

GD 175. Graphic Concept Development
Prerequisite: GD 174. Examination of the importance of an underlying concept development to successful graphic design solutions. Emphasis placed on the development of strong concepts in projects such as identity applications and environmental graphics. (6 lab hours) (Course fee $30).
Units: 3
Course Typically Offered: Fall, Spring

GD 176. Packaging Design
Prerequisite: GD 171 and GD 175. Advanced projects in packaging with emphasis on the application and exploration of the socio-cultural, physical, and legal requirements of packaging systems. (6 lab hours) (Course fee $30).
Units: 3
Course Typically Offered: Fall

GD 178. Professional Advertising Design
Prerequisites: GD 171, GD 174. Advanced advertising/graphic design projects from concept development to finished product. Emphasis on complex methods and approaches relating to advertising media, production procedures, and professionalism. (Course fee $30) (Formerly GD 148)
Units: 3
Course Typically Offered: Fall, Spring

GD 179. Professional Practices In Graphic Design
Prerequisites: GD 176 and GD 178, or GD 155 and GD 157, or GD 167 and GD 169. Advanced exploration of the fields of graphic and advertising design, and the standards and practices common in advertising agencies and design studios. Covers workplace structures, time and record-keeping, estimating, self-promotion, and working with vendors and employees. (6 lab hours). (Formerly GD 149) (Course fee $30).
Units: 3

Course Typically Offered: Spring

GD 180. Graphic Portfolio Development
Prerequisites: (GD 176 and GD 178), or (GD 155 and GD 157), or (GD 167 and GD 169). Organization and creation of a professional portfolio. Advanced approaches and production of various media and professional applications including practices encompassing the portfolio, exhibitions and competitions. (6 lab hours).
Units: 3
Course Typically Offered: Spring

GD 190. Independent Study in Graphic Design
See Academic Placement - Independent Study. Approved for RP grading.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

GD 198I. Internship in Graphic Design
Prerequisites: permission of instructor and supervising agency. Experience in graphic design related professions with a design studio or advertising agency or for a publication under the supervision of graphic design faculty. Maximum credit toward a graphic design option is 6 units. CR/NC grading only. (Minimum of 3 field hours per unit.)
Units: 1-6
Course Typically Offered: Fall, Spring

ID 7. Design Studio I
Basic design concepts and drafting techniques; working drawings, introduction to codes and standards; lettering; metric & imperial systems. (8 lab hours) FS
Units: 4
Course Typically Offered: Fall, Spring

ID 43. Design Graphics I
An introductory course in design graphics/visualization. Includes: conceptual/expressive sketching, analytical/diagrammatic drawing, 2D/3D drawing, and visual perception/communication for artists/designers. Includes mixed media. (6 lab hours) (Course fee $5) FS
Units: 3
Course Typically Offered: Fall, Spring

ID 70. Design History, Theory & Criticism I
Aesthetic and functional aspects of interior design. Integration of design principles: color, space planning, furniture selection, creative expression, product information, and design process.
Units: 3
Course Typically Offered: Fall, Spring

ID 71. Design Studio II
Prerequisite: ID 7, ID 43, ID 70 (or concurrently). An examination of the complex relationships between form,
space, perception, culture, conduct and social activity. Studio work includes creative aesthetics, spatial arrangements, design process and programming. (8 lab hours) (Course fee, $5)

Units: 4
Course Typically Offered: Fall, Spring

ID 77. Design Graphics II
Prerequisites: ID 43. Computer graphics. Topics include 2D/3D digital graphics (digital) photographic editing and illustration, typography, computer/web graphics, presentation and communication. (6 lab hours).

Units: 3
Course Typically Offered: Fall, Spring

ID 110. Building Systems, Construction Documents & Codes
Prerequisite: ID 7, ID 71. Fundamentals of building systems and codes; construction drawings & documents, acoustics, electrical, mechanical, plumbing and HVAC. May include fieldtrips. (1 lecture 2 lab hours) FS

Units: 2
Course Typically Offered: Fall, Spring

ID 111. Design Graphics III
Prerequisites: ID 7, ID 43, ID 77. Topics include: Computer Aided Design, Computer Media, 2D/3D modeling, rendering, lighting and environmental effects. (6 lab hours) (Course fee $5) FS

Units: 3
Course Typically Offered: Fall, Spring

ID 112. Design Studio III
Prerequisites: ID 7, ID 71 & ID 111. Design programming, schematic planning/sequencing, code application, and anthropometrics in medium-scale, mixed-use projects. Emphasis on design research directed toward social/cultural contexts. (8 lab hours) (Course Fee $5) FS

Units: 4
Course Typically Offered: Fall, Spring

ID 113. Design History, Theory & Criticism II
A sampling of architecture and interior space. Tours include northern, central, and southern California architecture. Residential and contract showrooms visited. Expenses for required off-campus visits incurred by the student. (6 lecture-lab hours) (Course fee, $220) (Formerly GID 113)

Units: 3
Course Typically Offered: Fall

ID 116. Design Graphics IV
Prerequisite: ID 77, ID 111. Advanced topics in digital design and multi-media art. Topics include advanced modeling, materials, lighting, environmental effects & animation (6 lab hours) (Course Fee $25) FS

Units: 3
Course Typically Offered: Fall, Spring

ID 120. Design History/Theory & Tours III
Prerequisites: ID 70, ID 113. The intellectual, stylistic and cultural characteristics of art, design and architecture up to the modern times with emphasis on global contexts. Includes field trips in California. (2 lecture 2 lab hours) FS

Units: 3
Course Typically Offered: Fall

ID 130. Lighting Design
Prerequisites: ID 7, ID 70, ID 110. Lighting design and details. Includes schematic design, reflected ceiling-plans, laboratory testing and lighting calculations. (1 lecture, 2 lab hours) (Course fee, $10) FS

Units: 2
Course Typically Offered: Fall, Spring

ID 131. Design Materials & Specifications
Prerequisites: ID 70, Selection, specifications, and computations for design materials. (2 lecture, 2 lab hours) (Course fee, $10) FS

Units: 3
Course Typically Offered: Fall, Spring

ID 132T. Topics in Interior Design
Topics related to interior design. Some topics may have labs. (Formerly GID 132T)

Units: 1-4

ID 133. Professional Practices
Prerequisites: ID 70, ID 131, ID 138. Principles and procedures of organizing and executing design projects from client contact to final billing and collecting - in collaboration with architects, product/furniture designers and public/private organizations. Includes developing a portfolio of design work. (1 lecture 2 lab hours) (Course fee $10)

Units: 2
Course Typically Offered: Spring

ID 134. Restoration and Preservation
Prerequisites: ID 112 and permission of instructor. Principals and methods of restoration, case studies of the restoration and preservation of historically significant structures in the United States. Working drawings, details, and specifications. (6 lab hours) (Course fee, $5)

Units: 3

ID 136. Design Studio IV: Furniture/Product Design
Prerequisite: ID 111, ID 112, ID 131. Contemporary furniture/product design in context. Studio work to include formal concepts, schematics, details, and construction drawings. Emphasis on contemporary trends in furniture/product design. (6 lab hours)
Units: 3
Course Typically Offered: Spring

ID 137. Interior Architectural Graphics and Models
Prerequisites: ID 77, ID 111; and ID 112 (or concurrently).
Three dimensional interior architectural models and graphic
techniques integrating color and composition and its impact
of design communication; media to include illustration board,
balsa wood, photography, markers, color pencil, pastel, and
watercolor. (6 lab hours) (Formerly GID 137)
Units: 3
Course Typically Offered: Spring

ID 138. Design Studio V
Prerequisites: ID 112, ID 116; ID 133 (or concurrently).
Design for mixed-use environments, diverse clients and
budgets. Emphasis on design ideation, advanced schematics,
prestations, codes/specifications. (8 lab hours) (Course fee,
$25) (Formerly GID 138)
Units: 4
Course Typically Offered: Fall, Spring

ID 145. Design Studio VI-c: Human/Environmental Topics
Prerequisite: ID 138. Studio to cover topics in human and
environmental design and/or healthcare facilities and systems.
Projects may also engage topics such as green design, aging,
ilness, and wellness. (8 lab hours) FS
Units: 4
Course Typically Offered: Spring

ID 149S. Design Studio VII: Advanced Design
Prerequisites: ID 137 or ID 145, ID 138. Advanced
design projects covering public, civic, cultural, institutional,
educational, commercial, administrative and related themes.
Emphasis on critical & multidisciplinary thinking, mature
communication, social responsibility, and global awareness. S
sections include a service-learning requirement. (8 lab hours)
(Course Fee $25)
Units: 4
Course Typically Offered: Fall

ID 150. Senior Thesis Exhibits
Prerequisites: ID 149, (ID 155 concurrently.) Discussion and
gallery-presentation of senior thesis projects. Includes group
discussions, and conferences with faculty on senior projects.
Culminates in the Senior Exhibit (4 lab hours) (Course fee,
$10) S
Units: 2
Course Typically Offered: Spring

ID 152I. Design Practicum & Entrepreneurship
Prerequisites: ID 133, (ID 149 or ID 155 concurrently.)
Supervised professional practice in architecture/design or
related industry. Experience with diverse methods of job
costing, profit/loss analysis and project management. SF
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

ID 155. Design Studio VIII: Senior Thesis
Prerequisites: ID 149. ID 150 to be taken concurrently.
Capstone design thesis studio. S
Units: 4
Course Typically Offered: Spring

ID 190. Independent Study
See Academic Placement-- Independent Study. Approved for
RP grading. (Formerly GID 190)
Units: 1-3
Course Typically Offered: Fall, Spring

ATHLETICS

ATHL 10. Strategies for Student-Athlete Success
Only open to students in intercollegiate athletics. Designed
to help entering student-athletes make a smooth transition
into the university and increase knowledge of policies,
procedures, resources, and requirements especially pertaining
to student-athletes. Introduces techniques to improve learning
and promotes awareness about relevant career and health
issues.
Units: 1

ATHL 100. Conditioning of Athletes
Prerequisite: must be enrolled in a varsity team sport (ATHL
176-199). Refer to current Schedule of Courses for appropriate
section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/Women Water Polo
Prerequisite: must be enrolled in a varsity team sport (ATHL
176-199). Refer to current Schedule of Courses for appropriate
section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/WLcr
Prerequisite: must be enrolled in a varsity team sport (ATHL
176-199). Refer to current Schedule of Courses for appropriate
section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/WTennis
Prerequisite: must be enrolled in a varsity team sport (ATHL
176-199). Refer to current Schedule of Courses for appropriate
section and schedule number.
Units: 1, Repeatable up to 999 units
ATHL 100. Cond of Athl/WGolf
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/WBk
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/MTennis
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/Eq
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Conditioning of Athletes
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/Vb
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/Trk
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/Women Swimming and Diving
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/Soc
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/Sb
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/Pep
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/MGolf
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/Fb
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/MBk
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 100. Cond of Athl/Bb
Prerequisite: must be enrolled in a varsity team sport (ATHL 176-199). Refer to current Schedule of Courses for appropriate section and schedule number.
Units: 1, Repeatable up to 999 units

ATHL 176. Baseball
Men only.
Units: 2, Repeatable up to 999 units

ATHL 177. Men's Basketball
Men only.
Units: 2, Repeatable up to 999 units
ATHL 178. Women's Basketball
Women only.
Units: 2, Repeatable up to 999 units

ATHL 180. Cross Country
Units: 2, Repeatable up to 999 units

ATHL 181. Equestrian
Women only. (See ATHL 181)
Units: 2, Repeatable up to 99 units

ATHL 182. Football
Units: 2, Repeatable up to 999 units

ATHL 183. Men's Golf
Men only.
Units: 2, Repeatable up to 999 units

ATHL 184. Women's Golf
Women only. This class is intended for experienced women's golfers with college level technical skills and advanced knowledge of tactics. The course objectives are achieved through the practical experience of a daily practice and training environment combined with a competitive tournament schedule. Theoretical sessions include video-tape analysis twice weekly and tactical classroom sessions. An emphasis of study will also be placed upon the following topics; mental rehearsal techniques, re-focusing techniques and functional goal-setting for academic and athletic success.
Units: 2, Repeatable up to 99 units

ATHL 185. Soccer
Women only.
Units: 2, Repeatable up to 999 units

ATHL 187. Softball
Women only.
Units: 2, Repeatable up to 999 units

ATHL 189. Swimming and Diving
Women only.
Units: 2, Repeatable up to 999 units

ATHL 191. Men's Tennis
Men only.
Units: 2, Repeatable up to 999 units

ATHL 192. Women's Tennis
Women only.
Units: 2, Repeatable up to 999 units

ATHL 193. Track and Field
Units: 2, Repeatable up to 999 units

ATHL 194. Women Lacrosse
Women Only.
Units: 2, Repeatable up to 999 units

ATHL 196. Volleyball
Women only.
Units: 2, Repeatable up to 999 units

ATHL 197. Women's Water Polo
Units: 2, Repeatable up to 999 units

ATHL 199. Wrestling
Men only.
Units: 2, Repeatable up to 999 units

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BIOLOGY

BIOL 1A. Introductory Biology
Course one of two-semester sequence required of all biology majors. Thematic introduction to the unifying concepts of life science: chemical basis of life; cellular processes; energy metabolism; genetics; evolution. G.E. Breadth B2. (3 lecture, 3 lab hours) (Formerly BIOSC 1A) (Course fee, $15)
Units: 4
Course Typically Offered: Fall, Spring GE Area: B2

BIOL 1B. Introductory Biology
Prerequisite: BIOL 1A passed with C or better. First-time enrollees must take BIOL 1BL concurrently. Course two of a two-semester sequence required of all biology majors. Continuation of thematic introduction to the unifying concepts of life science: classification and diversity of life; survey of the living organisms; physiology; ecology and environmental biology. (3 lecture hours) (Formerly BIOSC 1B).
Units: 3
Course Typically Offered: Fall, Spring

BIOL 1BL. Introductory Biology Laboratory
First-time enrollees must take BIOL 1B concurrently. Required of all biology majors. Continuation of thematic introduction to the unifying concepts of life science: laboratory exercises in evolution, classification and diversity of life; survey of the living organisms; physiology; ecology and environmental biology. (3 lab hours) (Course fee, $15) (Formerly BIOSC 1B)
Units: 1
BIOL 10. Life Science
Not open to students with credit in BIOL 1A. How living things work and why they work that way. Biology from chemical and physical foundations to ecological and evolutionary processes. Biology and its relationship to human affairs. G.E. Breadth B2. (2 lecture, 2 lab hours) (Course fee, $5)
Units: 3

BIOL 11. Plant Biology
Not open to students with credit in BIOL 1B (formerly BIOSC 1B). Structure, function, and development of plants. G.E. Breadth B2. (2 lecture, 2 lab hours) (Formerly BOT 10) (Course fee, $15)
Units: 3

BIOL 12. Animal Biology
Not open to students with credit in BIOL 1B. Structural and functional comparison of animals; principles and human implications of inheritance, evolution, and ecology; physiology as applied to man. G.E. Breadth B2. (2 lecture, 2 lab hours) (Course fee, $15)
Units: 3

BIOL 20. Introductory Microbiology
Not open to students with credit in BIOL 120. Prerequisites: CHEM 1A/1AL or CHEM 3A. Introduction to microbiology; principles and selected applications. (3 lecture, 3 lab hours) (Course fee, $25) (Formerly MICRO 20)
Units: 4

BIOL 20N. Introductory Microbiology
Not open to students with credit in BIOL 120. Prerequisites: CHEM 1A/1AL or CHEM 3A. Introduction to microbiology; principles and selected applications. Reserved for nursing major only. (3 lecture, 3 lab hours) (Course fee, $25)
Units: 4

BIOL 33. Introductory Human Anatomy and Physiology
Three units allowed for students with prior credit in human anatomy; 2 units allowed for students with prior credit in human physiology. An integrated study of the structure and function of the human body. (4 lecture, 3 lab hours) (Course fee, $25) (Formerly PHYAN 33)
Units: 5

BIOL 67A. Human Anatomy & Physiology I
Prerequisites: BIOL 20, grade of C or better OR BIOL 1A AND CHEM 1A/1AL (or 3A*), grade of C or better.* only if allowed by major. Not open to students with credit in BIOL 33, 64, or 65. Histology, cellular communication, embryological development, and the anatomy and physiology of the following human systems: integumentary, skeletal, muscular, nervous, and special senses. (3 lecture, 3 lab hours) (Course fee, $25)
Units: 4

BIOL 67B. Human Anatomy and Physiology II
Prerequisites: BIOL 67A, grade of C or better. Not open to students with credit in BIOL 33, 64, or 65. The anatomy and physiology of the following human systems: endocrine, cardiovascular, lymphatic/immune, respiratory, urinary, digestive, and reproductive as well as introductory nutrition and metabolism, exercise physiology, and human development and aging. (3 lecture, 3 lab hours)
Units: 4

BIOL 101. General Ecology
Prerequisites: BIOL 1A and BIOL 1B/1BL; PSYCH 42 or MATH 101, or EES 178 (EES majors only). MATH 70 or equivalent recommended. Required of all biology majors. The structure, function, organization, and regulation of populations, communities, and ecosystems. The role of evolution in environmental relationships. (3 lecture, 3 lab hours)* (Formerly BIOSC 130) (Course fee, $15)
Units: 4

BIOL 102. Genetics
Prerequisites: BIOL 1A and BIOL 1B/1BL and CHEM 8 or CHEM 128A passed. CHEM 8 or CHEM 128A may be taken concurrently. Required of all biology majors. Fundamentals of inheritance, including an introduction to the underlying molecular mechanisms. (3 lecture hours) (Formerly BIOSC 140A)
Units: 3

BIOL 103. Cellular Biology
Prerequisites: BIOL 102 and either CHEM 150 or CHEM 155A. Fundamentals of inheritance and cellular biology for both prokaryotic and eukaryotic systems, including an introduction to the underlying molecular mechanisms. (3 lecture hours) (Formerly BIOSC 140B)
Units: 3
BIOL 104. Genetics and Cell Biology Lab
Prerequisite: BIOL 102 and BIOL 103 (BIOL 103 may be taken concurrently.) Required of all biology majors. Must be taken a minimum of four semesters from completing BIOL 103. Basic techniques in molecular genetics and cell biology. No credit if BIOSC 140B taken prior to fall 2005. (3 lab hours) (Course fee, $20) (Formerly BIOSC 140L lab)
Units: 1
Course Typically Offered: Fall, Spring

BIOL 105. Evolution
Prerequisites: senior standing or permission of instructor; BIOL 101, BIOL 102, and BIOL 103. Required of all biology majors. Evolutionary processes and patterns. Satisfies the senior major requirement for the B.S. in Biology. (Formerly BIOSC 180)
Units: 3
Course Typically Offered: Fall, Spring

BIOL 110. Human Ecology
The study of the relationships between humans and their environment, both natural and man-made; emphasis on scientific understanding of root causes of current environmental problems. (Formerly BIOL 105)
Units: 3

BIOL 111H. Honors Experimental Design & Writing
Prerequisites: Admission to the biology honors program or permission of instructor. Experimental Design for Biologists offers an overview of the philosophy of science and the scientific method, and helps students establish the framework for their experimental projects. (Formerly BIOL 189T.)
Units: 1
Course Typically Offered: Spring

BIOL 112H. Honors Peer Instruction
Prerequisites: Admission to the biology honors program or permission of instructor. The development of improved oral communication, reinforcement of foundational biology knowledge, and development of teaching skills through service as a peer-instructor in biology. (Formerly BIOL 189T.)
Units: 1
Course Typically Offered: Fall

BIOL 113H. Honors Colloquium
Prerequisites: Admission to the biology honors program, BIOL 1A and 1B, or permission of instructor. Students explore selected topics in biology through engagement with speakers. Speakers from within and outside the department and university will speak on topics in their specialty. The students will gain familiarity to current ideas and research in biology and gain experience evaluating and critiquing scientific research presentations and articles. (Formerly BIOL 189T.)
Units: 1
Course Typically Offered: Spring

BIOL 119. Molecular Virology
Prerequisite: BIOL 120. This course will emphasize the molecular basis of viral replication, survival, and spread within a host population, the key virus-host interactions that lead to disease, and the basic molecular approaches of inhibiting viral infection. (3 lecture hours)
Units: 3

BIOL 120. Microbiology
Prerequisites: BIOL 1A, BIOL 1B/1BL; CHEM 8 or CHEM 128A; or BIOL 11 and CHEM 150. Emphasis on prokaryotes (bacteria); microbial physiology, genetics, ecology, classification, and identification; applications of microbiology. Prerequisite to most upper-division microbiology courses. (3 lecture, 3 lab hours) (Course fee, $25) (Formerly MICRO 140)
Units: 4

BIOL 121. Medical Microbiology
Prerequisite: BIOL 120; BIOL 157 recommended. The role of microorganisms in causing infection and disease; strategies for diagnosing and treating infections. (3 lecture hours) (Formerly MICRO 183)
Units: 3
Course Typically Offered: Fall

BIOL 122. Nonvascular Plants
Prerequisites: BIOL 1A and BIOL 1B/1BL or permission of instructor. Comparative structure and phylogeny of the fungi, algae, mosses, and liverworts. (2 lecture, 3 lab hours) (Course fee, $20) (Formerly BOT 132)
Units: 3

BIOL 123. Phycology
Prerequisites: BIOL 1A and BIOL 1B/1BL or permission of instructor. Morphology, cytology, ecology, physiology, economic importance, and cultivation of the algae. (2 lecture, 6 lab or field hours) (Course fee, $30) * (Formerly BOT 142)
Units: 4

BIOL 124. Vascular Plants
Prerequisites: BIOL 1A and BIOL 1B/1BL or permission of instructor. Morphology, reproduction, and evolution of the major groups of vascular plants (both living and extinct). Emphasis placed upon the seed plants. (2 lecture, 6 lab hours) (Formerly BOT 131)
Units: 4
BIOL 125. Plant Taxonomy
Prerequisites: BIOL 1A and 1B/1BL or permission of instructor. Principles of plant classification; local flora. (1 lecture, 6 lab or field hours) (Formerly BOT 144) (Course Fee, $35)
Units: 4

BIOL 130. Invertebrate Zoology
Prerequisites: BIOL 1A, BIOL 1B/1BL. Systematics and phylogeny (based primarily upon external and internal anatomy) and general ecology of free-living invertebrates (excluding insects). Includes field studies of marine and occasionally freshwater habitats. (2 lecture, 6 lab or field hours) (Course fee, $25) * (Formerly ZOOL 141)
Units: 4
Course Typically Offered: Fall

BIOL 131. Parasitology
Prerequisites: BIOL 1A, BIOL 1B/1BL and CHEM 1A/1AL or CHEM 3A. A study of the biology of parasitic organisms, including those of humans. Lecture topics: life history strategies, infectious processes, epidemiology, ecology, parasite evolution and phylogeny, diagnosis and treatment. Laboratory and field exercises: identification and sampling techniques, taxonomy, investigation of biological processes. (3 lecture, 3 lab hours*) (Course Fee, $20) (Formerly ZOOL 148)
Units: 4
Course Typically Offered: Spring

BIOL 132. General Entomology
Prerequisites: BIOL 1A, BIOL 1B/1BL. Anatomy, physiology, life history, and classification of insects and other arthropods. (2 lecture, 3 lab or field hours) (Formerly ZOOL 120) (Course Fee, $35)
Units: 3
Course Typically Offered: Spring

BIOL 133. Natural History of Vertebrates
Prerequisite: BIOL 101. Systematics, distribution, morphology, behavior, and ecology of fish, amphibians, reptiles, birds, and mammals. Fieldwork includes capture and sampling techniques, species identification and habitat analysis, and may require weekend field trips to coastal, desert, and mountain environments. (3 lecture, 3 lab hours) (Formerly ZOOL 150)
Units: 4

BIOL 134. Ichthyology
Prerequisite: BIOL 101. Ecology, evolution, and diversity of the fish of the world with emphasis on California fish, freshwater and marine. (2 lecture, 3 lab or field hours) (Formerly ZOOL 171)
Units: 3

BIOL 135. Biology of Reptiles and Birds
Prerequisite: BIOL 101. Ecology, ethology, and evolution of the reptiles and birds of the world. Encompasses the traditional areas of herpetology and ornithology. (3 lecture, 3 lab or field hours) (Course fee, $25) * (Formerly ZOOL 174)
Units: 4

BIOL 136. Mammalogy
Prerequisite: BIOL 101. Ecology, evolution, and diversity of the mammals of the world. (2 lecture, 3 lab or field hours)* (Formerly ZOOL 177)
Units: 3

BIOL 140. Plant Anatomy
Prerequisites: BIOL 1A and BIOL 1B/1BL or permission of instructor. Structure and development of flowering plants at the cellular and tissue levels. (2 lecture, 3 lab hours) (Formerly BOT 133) (Course Fee, $20)
Units: 3

BIOL 141. Histology
Prerequisites: BIOL 103. Identification and study of vertebrate cells, tissues, and organs. (2 lecture, 6 lab hours) (Formerly PHYAN 134)
Units: 4

BIOL 142. Vertebrate Embryology
Prerequisites: BIOL 1A and BIOL 1B/1BL. Morphogenesis of vertebrates from gamete formation through organogenesis, including physiological and experimental aspects of development. Laboratory emphasis on frog, chick, and pig. (2 lecture, 6 lab hours) (Formerly PHYAN 135)
Units: 4

BIOL 143. Comparative Vertebrate Morphology
Prerequisites: BIOL 1A, BIOL 1B/1BL. Comparative structure of vertebrate organ systems; laboratory study of representative vertebrates. (2 lecture, 6 lab hours) (Formerly ZOOL 132) (Course fee, $30)
Units: 4
Course Typically Offered: Spring

BIOL 144. Neuroanatomy
Prerequisites: BIOL 33 or BIOL 64 or BIOL 65. Macroscopic and microscopic study of the structure and functional relationships of the human nervous system. (3 lecture, 3 lab hours) (Formerly PHYAN 130) (Course Fee, $25)
Units: 4

BIOL 150. Molecular Biology
Prerequisites: BIOL 102; BIOL 103; CHEM 150 or CHEM 155A. The study of genome structure and fluidity, prokaryotic
and eukaryotic gene expression, and genomics. If GENET 142 was taken prior to Fall 2005, it is equivalent to BIOL 150 and BIOL 151 (formerly GENET 143). (3 lecture hours) (Formerly GENET 142)

Units: 3
Course Typically Offered: Spring

BIOL 151. Bioinformatics
Prerequisite: BIOL 102; and BIOL 103; CHEM 150 or 155A. Recommended pre- or co-requisite, BIOL 150. Practical use and application of computational tools for the analysis nucleic acids and proteins. Genomic database searching. Sequence alignment, molecular phylogenetic analysis, secondary and tertiary structure modeling of biological macromolecules. No credit if GENET 142 was taken prior to Fall 2005. (1 lecture, 3 lab hours) (Course fee, $10) (Formerly GENET 143)

Units: 2
Course Typically Offered: Spring

BIOL 152. Experimental Molecular Genetics
Prerequisite: BIOL 102 and BIOL 103. The nature of genetic information, its mutation, transfer, and recombination in cells. (2 lecture, 6 lab hours) (Course fee, $30) (Formerly GENET 171)

Units: 4

BIOL 153. Microbial Genetics
Prerequisite: BIOL 102 and BIOL 120 or permission of instructor. Genetic variation, gene transfer, and regulation of gene expression in model microbial systems and medically and industrially important microbes. (3 lecture, 3 lab hours) (Course Fee, $35)

Units: 4

BIOL 155. Developmental Biology
Prerequisite: BIOL 102 and BIOL 103. Investigations concerning the variety of mechanisms acting during the several stages of development of the living organism, from gamete formation to morphological and biochemical differentiation of organ systems; emphasis on different genetic control. (3 lecture, 3 lab hours) (Course fee, $20) (Formerly GENET 172)

Units: 4
Course Typically Offered: Spring

BIOL 156. Plant Growth and Development
Prerequisites: BIOL 102 or permission of instructor. Processes involved in plant growth with emphasis on the development of form in higher plants and the experimental approach. (2 lecture, 3 lab hours) (Course fee, $20) (Formerly BOT 137)

Units: 3

Course Typically Offered: Fall

BIOL 157. Immunology
Prerequisites: BIOL 103. Principles of mammalian immune response, featuring the molecular and cellular interactions involved in both humoral and cell-mediated immunity. Regulatory controls and adverse clinical conditions involving immune functions are addressed. Experimental basis of inquiry is emphasized. (Formerly PHYAN 160)

Units: 3
Course Typically Offered: Fall

BIOL 157L. Immunology Laboratory
Prerequisites: BIOL 157 and BIOL 103; BIOL 157 may be taken concurrently. Experimental illustration of immune response; classical and contemporary immunology techniques; interpretation and presentation of experimental outcomes. (6 lab hours, 1 hour discussion) (Course fee, $30) (Formerly PHYAN 160L)

Units: 3

BIOL 158. The Biology of Cancer
Prerequisite: BIOL 103 (Cell Biology) or permission of the instructor. Examination of the environmental causes of cancer, the underlying genetic and cellular changes that lead to a cancer diagnosis, and new strategies for treatments.

Units: 3
Course Typically Offered: Fall

BIOL 160. Microbial Physiology
Prerequisite: BIOL 120. Structure, function, energy metabolism, growth, and regulatory mechanisms of microorganisms. (2 lecture, 6 lab hours) (Course fee, $25) (Formerly MICRO 161)

Units: 4

BIOL 161. Plant Physiology
Prerequisites: BIOL 1A and BIOL 1B/1BL (or BIOL 11); CHEM 1A/1AL or CHEM 3A; CHEM 3B or CHEM 8 or CHEM 128A; or permission of instructor. General metabolism (photosynthesis, water relations, respiration, nutrient use, etc.) of plants and functional integration with structure. (3 lecture, 3 lab hours) (Course fee, $20) (Formerly BOT 130)

Units: 4
Course Typically Offered: Fall, Spring

BIOL 162. Comparative Animal Physiology
Prerequisite: BIOL 102 and BIOL 103. Evolution of physiological systems; functional adaptations to different environments; physiological principles as applied to animals. (3 lecture) (Formerly PHYAN 151 lecture)

Units: 3
BIOL 162L. Comparative Animal Physiology Lab
Prerequisite: BIOL 102 and BIOL 103. BIOL 162 is a pre- or co-requisite. Comparative experimental approach to understanding how animals adapt to different environmental challenges and investigations into physiological processes. (3 lab hours) (Course fee, $20) (Formerly PHYAN 151 Lab component)
Units: 1
Course Typically Offered: Fall, Spring

BIOL 163. Advanced Human Physiology
Prerequisites: BIOL 103 and either BIOL 65 or equivalent. Primarily for students in biology and in the health professions. Advanced study of the cardiovascular, respiratory, excretory, and digestive systems. Concepts explaining normal functioning will be illustrated through study of specific examples, such as exercise. (Formerly PHYAN 163)
Units: 3

BIOL 164. Hematology
Prerequisite: BIOL 103; BIOL 65 and BIOL 157 recommended. Development, structure, identification, and quantification of cellular blood elements; qualitative and quantitative considerations of hemoglobin, coagulation, and immunohematology. (Formerly PHYAN 162)
Units: 3

BIOL 165. Endocrinology
Prerequisite: BIOL 102 and BIOL 103. A systems approach to the study of hormone synthesis, secretion, function as intercellular signals, and their role in both controlling and integrating normal physiological processes. (Formerly PHYAN 165)
Units: 3
Course Typically Offered: Spring

BIOL 166. Neurophysiology
Prerequisites: BIOL 33 or BIOL 67A or BIOL 67B or BIOL 103 or BIOL 162. Function of the human nervous system with emphasis on molecular mechanisms of electrical and chemical signaling. (Formerly PHYAN 140)
Units: 3
Course Typically Offered: Fall

BIOL 169L. Physiology Laboratory
Prerequisites: Biol 102, Biol 103; May be paired with any Line 2 (Physiology) lecture course under Other Major Requirements in order to fulfill the Biology B.S. degree requirement of completing a physiology course with a laboratory. This course offers students the opportunity to conduct original research in animal physiology, in order to train students in experimental design and scientific method. (Formerly BIOL 189T.)
Units: 1
Course Typically Offered: Fall, Spring

BIOL 170. Microbial Ecology
Prerequisites: BIOL 101 and BIOL 120. Physiological ecology of microorganisms; interactions of microorganisms with abiotic and biotic factors in the environment; microbial habitats including soil, water, and organisms; techniques of microbial ecology (field laboratory). (3 lecture, 3 lab hours)* (Course Fee, $30)
* Late afternoon, Saturday and/or overnight field trips may be required.
Units: 4
Course Typically Offered: Spring

BIOL 171. Terrestrial Ecology
Prerequisite: BIOL 101. The interaction of organisms and communities with the physical and biotic environment, with emphasis on the biotic communities of Central California. (3 lecture, 3 lab or field hours) (Course fee, $20) * (Formerly ECOL 151)
Units: 4
Course Typically Offered: Fall

BIOL 172. Aquatic Ecology
Prerequisite: BIOL 101. Physical-chemical features of inland waters as related to their biology; community structure and function, ecological interactions, adaptations, and identification of aquatic organisms. (3 lecture, 3 lab or field hours) (Course fee, $25) * (Formerly BIOL 172S)
Units: 4
Course Typically Offered: Spring

BIOL 173. Marine Biology
Prerequisite: BIOL 1B/1BL or BIOL 12. Introduction to the marine environment with emphasis on the biological aspects; systematics, ecology, and morphological and physiological adaptations of marine organisms, especially intertidal and shallow water forms; pollution; utilization of marine resources. (One field trip required) (Formerly ECOL 135)
Units: 3

BIOL 174. Animal Behavior
Prerequisite: BIOL 101; one additional course in ecology or natural history recommended. Principles of ethology with emphasis on mechanisms of behavior. (2 lecture, 3 lab hours)* (Formerly ZOOL 152)
Units: 3
BIOL 175. Case Studies in Ecology
Prerequisites: BIOL 101. Discussion-based course focusing on analysis and problem solving in ecology. Cases are grounded in basic ecological and environmental science, but include relevance and application to sociological, economic, and political considerations. (2 lecture hours, 1 TBA) (Formerly ECOL 140)
Units: 3

BIOL 176. Field Methods Ecology
Prerequisite: BIOL 101. Teaches a broad range of field methods used in ecology. Focuses on quantitative techniques for studying animal populations: census techniques, capture/marking, radio telemetry, habitat assessment, behavioral observation and experiments, and design and logistics of field experiments. (2 lecture; 3 lab hours) (Course fee, $25) (Formerly ECOL 141)
Units: 3

BIOL 177. Conservation Biology
Prerequisites: BIOL 1A, BIOL 1B, and BIOL 1BL. Topics include the development and application of theory, principles, factual knowledge, and techniques of population ecology, genetics, evolutionary biology, community ecology, behavioral ecology, biogeography, and systematics to the conservation of biodiversity. (3 lecture, 3 lab hours) (Formerly BIOL 189T) (Course Fee, $35)
Units: 4
Course Typically Offered: Spring

BIOL 178. Systematic Biology and Macroevolution
Prerequisites: BIOL 1A, and BIOL 1B/1BL; BIOL 102 and BIOL 103 are recommended but not required. Topics include modern theory and methods of phylogenetic analysis applied to the study of biodiversity and evolution. (3 lecture, 3 lab hours) (Formerly ECOL 174)
Units: 4
Course Typically Offered: Fall

BIOL 179. Population Biology
Prerequisites: BIOL 1A, BIOL 1B, and BIOL 1BL. Integrative approach to ecology and evolution at the unit of the biological population. We will use the primary literature to investigate how populations are defined and used in theoretical and applied studies.
Units: 3
Course Typically Offered: Fall, Spring

BIOL 180. Biology Colloquium
Prerequisites: BIOL 1A and 1B/1BL. The aim of the Biology Colloquium is to expose students to selected topics in biology. Speakers from within and outside the department and university will speak on topics in their specialty. The course assumes basic knowledge of biology. (Formerly Biol 189T).
Units: 1, Repeatable up to 2 units
Course Typically Offered: Fall, Spring

BIOL 181. Seminar in Cellular and Molecular Biology
Prerequisites: BIOL 150 or permission of instructor; BIOL 150 may be taken concurrently. Trends and breakthroughs in cellular and molecular biology accessed through the primary literature. (1 seminar hour) (Formerly GENET 170)
Units: 1
Course Typically Offered: Spring

BIOL 189T. Topics in Biology
Prerequisite: permission of instructor. Investigation of selected areas in the field of biology. (Lecture and/or laboratory)
Units: 1-4

BIOL 189T. Fungal Biology
Prerequisites: BIOL 1A, BIOL 1B/1BL; CHEM 8 or CHEM 128A; or BIOL 11 and CHEM 150. This course focuses upon the diversity, physiology, and ecology of Kingdom Fungi and other organisms traditionally studied as fungi. Laboratory instruction will be divided between direct study of fungal anatomy and project-based work generating a collection of fungal specimens. (3 lecture, 3 lab hours). (Offered Spring 2020)
Units: 4

BIOL 189T. Ecology and Evolution of Birds
Prerequisite: BIOL 1B. The goal of the class is to engage students in the field of ornithology. In lectures we will investigate the role of bird evolution and ecology on avian morphology, phylogeny, physiology, and behavior. Labs and field trips will provide hands-on experience with bird morphology, identification (visual and auditory), behavior, and data analyses. (3 lecture hours/3 units, 3 lab hours/1 unit) (Offered Spring 2020)
Units: 4

BIOL 189T. Animal Ecological Physiology
Prerequisites: BIOL 101; BIOL 67A highly recommended. Instruction will include lecture and discussion of primary literature on animal ecophysiology. Lab will be project based, students will design and implement experiment related to topics covered in lecture. The course will focus on physiological trials most important for population persistence in changing environments including metabolic physiology, thermal physiology, water balance, and stress physiology. (3 lecture, 3 lab hours) (Offered Spring 2020)
Units: 4
BIOL 190. Independent Study
See Academic Placement - Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

BIOL 199H. Honors Thesis in Biology
Prerequisites: BIOL 111H. Preparation, completion, and submission of an acceptable thesis for the honors in biology designation.
Units: 3
Course Typically Offered: Fall, Spring

BIOL 204. Biology of Speciation
Prerequisites: BIOSC 140A-B and 180. Evolution of the species as a unit of biological organization.
Units: 2

BIOL 208. Biological Field Studies
Prerequisite: permission of instructor. Integrated studies or specialized topics, including botanical, environmental, microbiological, or zoological field studies. Approved for SP grading.
Units: 1-6

BIOL 224. Evolutionary Developmental Biology
This course examines principles and mechanisms of animal development. Emphasis will be held on the evolution of developmental pathways, and how the alteration of these pathways has led to the evolution of animal morphology.
Units: 3

BIOL 225. Molecular Evolution
Patterns and processes by which biological molecules evolve. Lecture topics include rates and modes of DNA sequence evolution, molecular phylogenetics, gene duplication, concerted evolution, genome organization, and application of computers to comparative
Units: 3

BIOL 230. Foundations of Ecology
Prerequisites: permission of instructor. Ideas and papers that defined ecology as an independent scientific discipline are discussed, both in the context of their time of publication and in comparison to current ecological paradigms. Time period covered is late 19th century to present.
Units: 2

BIOL 240. Systems Ecology
Prerequisites: BIOL 130, MATH 70. Quantitative approach to the analysis of whole ecosystems including data acquisition and statistical treatment, conceptual and mathematical ecosystem modeling, and computer simulations in FORTRAN or BASIC. No programming experience needed. (2 lecture, 3 lab hours)
Units: 3

BIOL 241A. Molecular Biology I-II
(BIOL 241A same as CHEM 241A and FBS 241A.) Prerequisites: BIOL 102, BIOL 103, CHEM 150 or CHEM 155A or permission of instructor. Current topics in molecular biology are addressed, including protein and nucleic acid structure, DNA replication, transcription, translation, prokaryotic and eukaryotic regulation, mechanisms of exchange of generic material, and recombinant DNA technology.
Units: 3

BIOL 241B. Molecular Biology I-II
(Same as BIOL 241A and BIOL 241B.) Prerequisites: BIOL 140A, BIOL 140B, CHEM 150 or CHEM 155A, or permission of instructor. BIOL 241A/CHEM 241A is prerequisite for BIOL 241B or CHEM 241B. Current topics in molecular biology are addressed, including protein and nucleic acid structure, DNA replication, transcription, translation, prokaryotic and eukaryotic regulation, mechanisms of exchange of generic material, and recombinant DNA technology.
Units: 3

BIOL 242. Techniques in Protein Purification and Analysis
(Same as BIOL 242.) Prerequisite: CHEM 151 or CHEM 156 or permission of instructor. Corequisite: BIOL 241A or CHEM 241A. Deals with the technologies relevant to protein isolation, purification, analysis, immobilization, and modification in micro and macro quantities. (1 lecture, 6 lab hours) (Class fee, $40)
Units: 3

BIOL 243. Nucleic Acid Technology Lab
(Same as BIOL 243.) Prerequisites: BIOL 241A or CHEM 241A and BIOL 242 or CHEM 242. Corequisite: BIOL 241B or CHEM 241B. A lecture/laboratory course focusing on the technologies used in nucleic acid chemistry; specifically, synthesis, translation, mutagenesis, and genetic engineering. (1 lecture, 6 lab hours) (Course fee, $40)
Units: 3

BIOL 244. Cell Culture Techniques
(Same as BIOL 244.) Prerequisites: BIOL 103 and BIOL 104. The theory and practice of in vitro propagation of eukaryotic cells, including growth characteristics, metabolic requirements, genetic analysis, and screening assays. Special focus is on cancer cell lines with the potential for stem cell manipulation relative to cell biology culture and application to biotechnology. (1 lecture, 6 lab hours) (Course Fee, $40)
Units: 3

BIOL 245. Industrial Biotechnology
Prerequisites: BIOL 120 and CHEM 150 or CHEM 155A or permission of Instructor. Theory and current practices of bioprocessing, including hands-on experience with standard techniques and formulation of a strategic plan for a new technology or product. (2 lecture, 3 lab hours).
Units: 3

BIOL 248. Seminar in Molecular Biology and Biotechnology (CHEM 248 same as BIOL 248.) Prerequisite: admission to the biology or chemistry graduate program. Preference will be given to students enrolled in the Master of Biotechnology Program. Reviews and reports on current literature in various aspects of biotechnology and molecular biology.
Units: 1-2

BIOL 250. Scientific Writing
Prerequisite: permission of instructor. Prepare a writing sample to fulfill Graduate Writing Requirement; how to write a proposal for a research project, including language (composition for scientific writers), structure (elements of proposals), and content (literature review, scientific question). (3 lecture hours)
Units: 3

BIOL 251. Experimental Design for Biologists
Experimental Design for Biologists offers an overview of the philosophy of science and the scientific method and helps students frame research questions and develop hypotheses, choose appropriate methods and design experiments, and interpret and present their experimental results. (Formerly BIOL 260T)
Units: 3

BIOL 255T. Topics in Botany
Prerequisite: permission of instructor. Investigation of new fields, areas not in current courses, or advanced studies in a given area. (Lecture and/or laboratory)
Units: 1-3

BIOL 256. Plant Development Genetics
This seminar course is intended for graduate students and will cover recent progress made in plant molecular genetics to understand how plants develop and how they respond to the biotic and abiotic environment.
Units: 3. Repeatable up to 9 units
Course Typically Offered: Fall - even

BIOL 260T. Invasion Biology
A comparative approach to examine the role of invasive species in altering the environment, mechanisms that increase susceptibility, mechanisms of transport, evolutionary impacts through hybridization, predictability and risk assessment, methods of eradication, and impact assessment. (Offered Spring 2020)
Units: 3

BIOL 260T. Analysis of Ecological Data
Course topics will focus on the rapidly advancing and evolving methods of statistical analyses in the ecological literature. Additional emphases on the most recent software and computer models used in ecological research. (Offered Spring 2020)
Units: 3

BIOL 260T. Molecular Phylogenetics and Evolution
Application of molecular markers to studies of species, populations and natural history of aquatic and terrestrial organisms; Biodiversity and historical biogeography.
Units: 2, Repeatable up to 8 units

BIOL 265T. Topics in Physiology
Prerequisite: permission of instructor. Investigation of new fields, areas not in current courses, or advanced studies in a given area. (Lecture and/or laboratory)
Units: 1-3

BIOL 266. Neuroethology
Neuroethology links brain function to natural behavior. This course will explore the underlying neural and molecular mechanisms that drive animal behavior and how the nervous system has evolved and adapted to the specific challenges in the environment.
Units: 3

BIOL 267. Behavioral Endocrinology
Interaction between hormones and behavior from an interdisciplinary perspective will be examined throughout this course. This interaction is bidirectional: hormones affect behavior and behavior can influence hormones. The course focuses on how prenatal hormonal levels influence hormone-behavior interactions as adults.
Units: 3

BIOL 270T. Topics in Zoology
Prerequisite: permission of instructor. Investigation of new fields, areas not in current courses, or advanced studies in a given area. (Lecture and/or laboratory)
Units: 1-3
BIOL 270T. College Science Teaching
For people wanting to improve their teaching and/or pursuing careers in college teaching. Students will develop: (1.) Deeper understanding of what it means to learn science, (2.) Ability to set goals for student learning, (3.) Teaching strategies for diverse learners, (4.) An understanding of the importance of linking assessment with learning goals, (5.) Assessment strategies and use goals, and assessment to develop curricula and, (6.) Reflection on practice and how to seek out development opportunities. (Offered Spring 2020)
Units: 3
Course Typically Offered: Fall, Spring

BIOL 281. Seminar in Biological Science
Prerequisite: permission of instructor. Reviews and reports on current literature in the various phases of biology.
Units: 1-2

BIOL 290. Independent Study
See Academic Placement regarding Independent Study. Approved for SP grading.
Units: 1-3

BIOL 295. Research
Prerequisite: permission of instructor. Independent research by the advanced graduate student.
Units: 2-6

BIOL 298C. Project Continuation
Project Continuation
Units: 0

BIOL 299. Thesis
Prerequisite: Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for SP grading.
Units: 2-4

BIOL 299C. Thesis Continuation
Prerequisite: BIOL 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

BIOTC 275. Biotechnology Industrial Experience
Prerequisites: PSM Program Classification; BIOL 241B or CHEM 241B; BIOL 248 or CHEM 248; BUS 272; or permission of instructor. Internship to develop familiarity with biotechnology business practices. Requires a minimum of 150 hours of onsite work and completion of a project for written and oral presentation. Specific placement is facilitated by the PSM coordinator. Approved for RP grading.
Units: 3

BIOTC 298. Biotechnology Culminating Project
Prerequisites: PSM Advancement to Candidacy and completion of all other courses in the program of study. Field studies, including appropriate experimentation, addressing a biotechnology business/science problem identified through student's independent analysis. Extensive written documentation on the plans and outcomes are required. A final progress report meeting the requirements of the
culminating experience for a Master's degree and an oral defense are required. Approved for RP grading.

Units: 4

BIOTC 29C. Project Continuation
Pre-requisite: Project BIOTC 29. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

BIOTC 299. Thesis
Prerequisites include PSM advancement to candidacy and completion of all other courses in the program of study. Preparation, completion and submission of an acceptable thesis for a Master's Degree addressing. An oral defense is required. Approved for RP grading.

Units: 4

BIOTC 299C. Thesis Continuation
Pre-requisite: Thesis BIOTC 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

CI 161. Methods and Materials for Teaching Science
Prerequisites: CI 152 and CI 159 or concurrent enrollment; admission to the Single Subject Credential Program or teaching experience. Planning, delivering, and assessing content-specific instruction; academic and common core standards; identifying specific standards that require literacy strategies. (Instructional materials fee for Single Subject - Art Methods and Materials enrollees, $10)

Units: 3

EHD 154B. Final Student Teaching Seminar - Biology
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.

Units: 1

EHD 155B. Studt Tchg Biol
Prerequisites: admission to student teaching. EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.

Units: 5-10
Course Typically Offered: Fall, Spring

CRAIG M B A PROGRAM

MBA 200. Managerial Economics
Prerequisites: finite mathematics, admission to graduate business program or permission of director. Logic and method of economic analysis for business decisions. Production, cost, supply; buyer behavior, consumer demand, derived demand.; forecasting; market structure, pricing, negotiation; government regulation; risk, uncertainty, macroeconomic concepts.

Units: 3

MBA 201. Accounting and Information Systems
Prerequisites: electronic spreadsheet literacy, and either admission or permission of director. Concepts and terminology of financial and managerial accounting and information systems. Transaction processing systems and planning and control systems integrated with data capture, data classification, information storage and organization, information access and display/reporting.

Units: 3

MBA 203. Methods of Decision Sciences
Prerequisites: linear functions, familiarity with PC-based microcomputing and spreadsheets, and either admission to the graduate business program or permission of director. Statistical concepts, inferential statistical methods, management science techniques. Descriptive statistics; discrete random variables; expected value decision theory; continuous distributions; sampling distributions; estimation; hypothesis testing; analysis of variance; linear regression and correlation; chi-square tests; time series analysis and forecasting; simulation. (2 seminar, 2 lab hours)

Units: 3

MBA 204. Global Environment of Business
Prerequisite: admission to the graduate business program or permission of director. Introduction to global business environment. Cultural, economic, political, and legal systems. Advances in global trade, marketing, production, accounting, taxation, financial and payment systems. Impact of technological advances, multinational corporations, and nation-states on the performance and competitiveness of businesses. Lecture and case.

Units: 3

MBA 205. Production and Operations Management
Prerequisites: MBA 203 or concurrently, admission to the program or permission of director. Production and operations systems; product development; process selection; facility location and design; transportation management; method analysis; job design; work measurement; planning and
control; project management; inventory control; just-in-time philosophy; total quality management.

Units: 3

MBA 206. Business Communication
Investigation and analysis of the communication process as it relates to managerial effectiveness. Business communication theory; analysis of communication alternatives; effective business writing and speaking; case studies.

Units: 3

MBA 210. Leadership and Organizational Behavior
A seminar that examines management functions and behavioral processes as they relate to complex problems in today's dynamic organizations. Special emphasis on leadership, organizational change, and motivational issues. Lectures, discussions, case studies, and experiential exercises.

Units: 3

MBA 211. Management Information Systems
Prerequisites: MBA 200 and MBA 201. Management and technical aspects of computer-based information systems. Emphasis is on issues for non-IS managers in the areas of inter- and intra-organizational systems; system development, acquisition, and implementation; software, hardware, and data resource management and control.

Units: 3

MBA 212. Financial Management
Prerequisites: MBA 200, MBA 201, and MBA 203. Theories, concepts, and techniques in financial management; financial analysis, planning, forecasting, and working capital; risk and return analysis, valuation models, cost of capital budgeting; capital structure, dividend policy and long-term financing. Special contemporary topics in financial management.

Units: 3

MBA 213. Managerial Accounting
Prerequisites: MBA 200 and MBA 201. In-depth consideration of several topical areas in accounting analysis related to both profit and non-profit organizations, with emphasis on currently controversial issues. Analysis includes budgetary planning, cost analysis, internal control and case studies.

Units: 3

MBA 214. Marketing Management
Prerequisites: MBA 200, MBA 201, MBA 204; MBA 203 or concurrently. Analysis of the concept of marketing, the marketing strategy development process at strategic business unit level, and segmentation and positioning strategies. The development of product, price, promotion, and distribution strategies. Examination of product, price, promotion, sales, and distribution management topics and issues through case analysis.

Units: 3

MBA 215. Regulatory and Ethical Environment of Business
Prerequisites: MBA 210, MBA 211, MBA 212, MBA 213, MBA 214 or concurrently. Relationships among personal ethics, corporate social responsibility, and regulatory policy on business decision making. Evaluation of business decisions, corporate goals, and regulatory statutes and process in terms of their ethical quality and adherence to sound policy.

Units: 3

MBA 216. Business Research

Units: 3

MBA 220. Seminar in Cost Accounting
Prerequisites: MBA 200, MBA 201, MBA 203, MBA 204, MBA 205 and MBA 213. The development, interpretation, and uses of accounting reports for management planning, control, and decision-making. Cost-volume-profit analysis; linear programming; capital budgeting; inventory models; standards, budgets, and analysis variance for planning and control purposes; divisional performance; and transfer pricing issues. (Formerly BUS 263)

Units: 3

MBA 221. Seminar in International and Nonprofit Accounting
Prerequisites: MBA 200, MBA 201, MBA 203, MBA 204, MBA 205 and MBA 213. Accounting for various types of funds as applied to governmental and other not-for-profit organizations. Global practices and accounting standards. Managerial problems of multinational enterprises. International auditing standards and taxation issues.

Units: 3

MBA 230. Seminar in Advanced Financial Management
Prerequisite: MBA 212. An applied case-method analysis of theories, concepts, and analytical techniques of financial management, financial analysis and planning, capital budgeting, leasing, refunding, mergers and acquisitions, corporate restructuring, financial engineering, derivative securities. Lecture and cases.

Units: 3

MBA 231. Seminar in International Finance
Prerequisite: MBA 212. An advanced study of theories and techniques in global finance and investment. The international financial system; currency markets; risks and
exposure management; balance of payments; political risks; international banking and capital markets; euro-currencies; portfolio and foreign direct investment.

Units: 3

MBA 232. Seminar in Investments and Portfolio Management
Advancement analysis of equity and fixed income securities and mutual funds; operation of financial markets and investment environments; contemporary theories and techniques of security selection and management available to the institutional portfolio manager; and portfolio performance evaluations. Lecture and cases.

Units: 3

MBA 233. Seminar in Management of Financial Institutions
Prerequisite: MBA 212. Comprehensive analysis of the role of financial institutions and markets in allocating capital. Application of economic and financial analytical techniques to the managerial problems of financial institutions. Lecture and cases.

Units: 3

MBA 234. Seminar in Options, Futures, and Other Derivatives
Introduction to the use and pricing of derivative assets such as option, futures, swaps, and option-like features embedded in corporate securities. It covers mathematical concepts underlying derivative markets and contracts and basic pricing models. The use of derivatives for speculative purposes, hedging purposes, and arbitrage will be discussed. Lecture and cases. (Formerly MBA 289T)

Units: 3

MBA 235. Urban Economics with UrbanPlan
Prerequisites: Current MBA student or by permission from instructor. This course will cover the fundamentals of real estate analysis at a graduate level and is developed around the Urban Land Institute's UrbanPlan project.

Units: 3

MBA 240. Managing Human Capital-Applications of Human Resource Management Theory to Practice
Analysis of theories and application of the major human resource management functions that affect managerial decisions. Particular emphasis on strategy, program evaluation, legal issues, employee and labor relations, and managing human resources in a global environment. Lecture and cases.

Units: 3

MBA 241. Seminar in Comparative - Human Resource and Industrial Relations Systems
Analysis of human resource and industrial relations practices of transnational and multinational corporations operating in the global environment. Particular emphasis on the emergence, evaluation, structures, functions and challenges of labor movements in developed and less developed countries. Lecture and cases.

Units: 3

Prerequisite: MBA 240. Analysis of theories/techniques for "getting the right people into the right jobs at the right time." Specifically, recruiting, selecting, and placing employees to meet strategic goals, while developing/maintaining a diverse workforce, addressing legal issues, and staffing in an evolving environment. Lecture and cases.

Units: 3

MBA 243. Seminar in Training, Compensation, and Performance Appraisal
Prerequisite: MBA 240. Analysis of the behavioral, social, legal, and economic issues involved in designing, administering, and evaluating effective orientation and training programs, and employee performance management systems to maintain a qualified and motivated workforce. Lecture and cases.

Units: 3

MBA 244. Seminar in Applications of Technology in Human Resource Management
Analysis of the use and implications of technology in human resource management. Topics include human resource information systems, employee monitoring and telecommuting.

Units: 1-2

MBA 245. Seminar in Negotiation and Conflict Resolution Topics
Analysis of resolving conflicts in the workplace. Address the behavior of individuals, groups and organizations in the context of organizational conflict. Topics include negotiation, dispute resolution systems in the workplace, and employee relations.

Units: 3

MBA 246. Seminar in Workforce Issues
Analysis of special topics as they relate to the current workforce such as empowered work teams, virtual teams, changing demographics, and the human resource professional acting as a change agent.

Units: 1-2

Analysis of current human resource management trends, including workplace safety, ergonomics/workplace design, and genetic testing.

Units: 1-2
MBA 250. Seminar in End User Computing
Prerequisite or concurrent MBA 211. Use of database and geographic information systems in the analysis and solution of business problems; management of end-user computing; innovative application of cutting-edge technologies.
Units: 3

MBA 251. Seminar in Information Systems in a Global Environment
Analysis of systems through study and application of systems theory; special emphasis on information systems. Application of systems theory in national and international environments; lecture and case analysis.
Units: 3

MBA 252. Seminar in Information Systems Management
Prerequisite: MBA 211. Study of information systems management from the viewpoint of the chief information officer. Study of the strategic and innovative use of technology and the managerial, political, legal, ethical, financial, and behavior issues involved in managing the IS function.
Units: 3

MBA 253. Seminar in Information Technology
In-depth analysis of a selected information technology with application to business problem solving and decision making. Topics from database; telecommunications; decision support systems; expert systems; artificial intelligence. Lecture and cases.
Units: 3

MBA 254. Seminar in Market Research and Analysis
Prerequisite: MBA 214. Traditional as well as hi-tech research methodology. Research project management from conception of research ideas and design to data analyses and presentation of findings. Blending art and science of research, qualitative and statistical interpretations, and leveraging the information in decision-making. (Formerly BUS 240)
Units: 3

MBA 255. Seminar in Global Marketing and E-Business
Prerequisite: MBA 214. Analysis of problems of produce design, channel structure, promotion, and inter-organization cooperation and control in international marketing. Negotiation, bargaining, and contracting across national boundaries. Special emphasis on the importance of logistics in generating customer satisfaction in both domestic and international markets.
Units: 3

MBA 256. Strategic Market Planning
Prerequisite: MBA 214 or permission of instructor. Strategic market planning and decision making in both start-up and existing businesses. Emphasis on detailed planning, clear strategy articulation, and good marketing plan preparation. Actual consulting projects and/or case analysis.
Units: 3

MBA 257. Seminar in X Marketing
Prerequisites: MBA 214. With approval of instructor, students explore a current hot topic in marketing and prepare a major investigative paper and presentation for professional critique. Example topics include relationship marketing, e-marketing, societal marketing, green marketing, non-profit marketing, and database marketing.
Units: 3

MBA 258. E-Marketing
Prerequisite: MBA 214. Examines the impact of the Internet on marketing processes and the marketing mix. Emphasis on the Internet as a content, communication, and distribution resource. Role of customer service, fulfillment, and customer relationship management in achieving long run customer satisfaction.
Units: 3

MBA 260. Seminar in Business Ventures
Overview of the entrepreneurial process beginning with the initial idea through start-up, growth, and harvesting the business. Using the business plan as a primary learning vehicle, students learn to manage all elements of a business in the entrepreneurial context. Course is team taught.
Units: 3

MBA 261. Seminar in New Venture Management
Prerequisite: MBA 270 or permission of professor. Study of the management and growth of a new firm. Skill and knowledge building through case analysis, interaction with community entrepreneurs, and readings. Students are encouraged to do an internship with an entrepreneurial firm while enrolled in the course. Course is team taught.
Units: 3

MBA 262. New Venture Creation
Prerequisite: MBA 270, MBA 272, or permission of instructor. Through team projects emphasizing real world experience, this course covers the process by which business ideas are developed, screened, and tested. Topics include business idea generation, techniques for screening ideas, the development of product and business concepts, prototype development, and feasibility analysis. This course is team taught.
Units: 3

MBA 263. New Venture Launch
Prerequisite: MBA 270, MBA 272, and MBA 273, or permission of instructor. Through team projects emphasizing real world experience and hands-on instruction, this course
provides an understanding of the process of starting-up, growing, and harvesting a new business. Case analysis, and a heavy emphasis on practical exercises. This course is team taught.

Units: 3

**MBA 279. Seminar in Business Policy and Strategy**
Prerequisite: completion of Group II or concurrently. Evolution of strategic management, globalization of strategy, role of multinationals, competitive advantage strategy formulation; implementation; control issues; role of top and middle management; ethics; and culture.

Units: 3

**MBA 281. International Business**
Examination of current topics related to international business. Areas of study will include but are not limited to international marketing, finance, logistics, regulatory environments, trade including import/export concerns, the transition of economies, and relevant political environments. Lecture and cases.

Units: 3

**MBA 289T. Seminar in Business Topics**
Theory and developments in accounting, administration and organization, business education, communication, consumer economics, finance, industrial and regional studies, real estate and urban economics, information systems, decision sciences, resource economics, risk and insurance, or transportation.

Units: 1-3

**MBA 290. Independent Study**
Prerequisite: Advanced to Candidacy; permission of director and instructor. Approved for SP grading.

Units: 1-3

**MBA 292. Readings in Business**
Prerequisite: Advanced to Candidacy; permission of director. Approved for SP grading.

Units: 2-3

**MBA 295I. Internship**
Prerequisite: permission of internship coordinator and the graduate program director. Requires at least 150 hours of work at a pre-qualified, academically-related work site. Final report and presentation of findings also required. Only one internship may count toward the Group III requirements.

Units: 1-3

**MBA 298. Management Project**
Prerequisite: MBA 216. Advanced to Candidacy, and permission of director. See Criteria for Thesis and Project. Examination of the work and problems general managers of business units face as chief strategists and organization builders. Independent analysis of an operating industry, business, or a principals functional area of an organization. Case studies and field research project. Approved for SP grading.

Units: 3

**MBA 298C. Project Continuation**
Pre-requisite: Project MBA 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

**MBA 299. Thesis**
Prerequisites: MBA 216. Advanced to Candidacy, and permission of director. See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for SP grading.

Units: 3

**MBA 299C. Thesis Continuation**
Pre-requisite: Thesis MBA 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

**CHICANO & LATIN AMER STUDIES**

**CLAS 3. Introduction to Chicano/Latino Studies**
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Introduction to the historical and contemporary experiences of Chicanos and other Latinos in American society. Their contributions to the United States and their current economic, political, and social status are discussed. G.E. Breadth D3.

Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3

**CLAS 5. Chicano Culture**
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. A historical examination of Chicano culture from the pre-Columbian period to the present. The customs, values, belief-systems, and their symbols are analyzed; important events and changes occurring through time are emphasized. G.E. Breadth D3.

Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3

**CLAS 9. Chicano Artistic Expression**
Introduction to Chicano artistic expression, with special attention to cultural continuity and change; the
interrelationships between popular music, dance, drama, literature, and the graphic arts are analyzed. G.E. Breadth C1.

Units: 3
Course Typically Offered: Fall, Spring

GE Area: C1

CLAS 30. Critical Thinking in Chicano and Latin American Studies
Distinguishes belief vs. knowledge and fact vs. opinion; examines relationship between language/logic in structuring around arguments; uses deductive/inductive reasoning; distinguishes and evaluates unsupported beliefs. Critical thinking skills are applied to topics concerning questions race, ethnicity, ender, culture and class with a focus on Chicanos and Latin America. G.E. Foundation A3.

Units: 3
Course Typically Offered: Fall, Spring

GE Area: A3

CLAS 42B. Introduction to Chicano-Latino Research Methods
Prerequisite: CLAS 42A or permission of instructor. Introduces students to basic research methodologies and theories pertaining to Chicano/Latino communities. Focuses on identifying specific areas in need of further research; locating and formulating problems; basic techniques including methods of observation, gathering, and analysis of data; interpretation of data; access database programs; preparation of research paper. (Formerly CLS 180T section)

Units: 3
Course Typically Offered: Spring

CLAS 70. Introduction to Latin American Studies
A basic overview of Latin America; its nations, history, problems, and realities. Theoretical paradigms utilized to analyze Latin American issues are discussed.

Units: 3

CLAS 100. Chicano Literature
An interpretive analysis of written Chicano literature: poetry, drama, short story, novel, and essay. The relationship between literature and a changing Chicano sociocultural environment is explored.

Units: 3

CLAS 102W. Contemporary Chicana/Latina Writing and Culture
Critical, written analysis of Chicana and Latina writing and culture with emphasis on gender, race, sexuality, and social class. Meets the upper-division writing skills requirement for graduation.

Units: 3

CLAS 106. Folkloric Dance
History and performance of Mexican folk music and dance; Indian, African, Spanish, and European influences; contemporary relationships to Chicano culture.

Units: 3, Repeatable up to 12 units

CLAS 107. Latino Dance
Examination of origins, composition, and performance of various types of Chicano/Latino music and dance: boleros, huapangos, cumbias, chachas, salsa; emphasis on contemporary and cross-cultural influences in Chicano/Latino music-and-dance. CR/NC grading only.

Units: 2, Repeatable up to 4 units

CLAS 108. Chicano Theatre

Units: 1-3

CLAS 112. Pre-Hispanic Civilizations
Historical examination of the origins of the Maya-Aztec civilizations in Mesoamerica until 1521. The values, social organization, religion and their daily lives, technological and scientific achievements will be examined.

Units: 3

CLAS 114. Mexico and the Southwest 1810-1910
Prerequisite: G.E. Foundation and Breadth Area D. Examines the development of the Mexican nation from the Independence period to the Mexican Revolution (1810-1910). Special attention is given to the nineteenth-century Mexican-American and Chicano experience in the Southwest United States before the Treaty of Guadalupe Hidalgo (1848). G.E. Integration ID.

Units: 3

GE Area: ID

CLAS 115. Mexico-U.S. Relations Since 1910
Historical perspective of the changing relationship between Mexico and the United States during the 20th century. Analysis of the Mexican Revolution, the Great Depression, World War II, immigration, and their impact on Mexico-U.S. relations. Special emphasis on the status of Mexicanos/Chicanos in the United States. G.E. Integration ID.

Units: 3

GE Area: ID

CLAS 120. Latina/o Cultural Changes
Prerequisite: CLAS 5 for CLAS majors. The course examines the diversity of the Latina/o population in the U.S. It analyzes cultural, political, social, and economic complexities facing Latinas/os. (Formerly CLAS 116).
Units: 3

CLAS 128. Contemporary Political Issues
Political philosophies, goals, and strategies of Chicanos and Latinos as reflected in their attempts to gain political power.

Units: 3

CLAS 130. Latinx Culture and Media Studies
Evaluates roles of mass media institutions in cultural/social development of Latinx communities and vice versa. Media and Latinx community social/cultural impacts are observed in terms of gender, race/ethnicity, and social class constructs, and ideological agendas in national and international media. G.E. Integration IC.

Units: 3
GE Area: IC

CLAS 141. The Chicano Family
(CLAS 141 same as WS 141.) Traditional and changing relationships in the family structure of the Chicano; interaction with wider institutional social system. (Formerly CLAS 152).

Units: 3
Course Typically Offered: Spring

CLAS 143. Bilingual/Bicultural Education
Prerequisite: CLAS 120 for CLAS majors; CLAS 120 and recommended for CLAD/BCLAD students. Investigation into what it means to be bilingual and bicultural; review of programs scaled toward a more meaningful education for the Chicano child. (Bilingual Education majors see department chair for further prerequisites.)

Units: 3

CLAS 145S. Service Learning in Chican@/Latin@ Settings
Prerequisite: CLAS 3 or permission of instructor. Supervised placement in community and educational settings. Provides a variety of learning experiences in community agencies, organizations, or educational institutions with a service-learning component.

Units: 3
Course Typically Offered: Fall, Spring

CLAS 150. Research Methods
This course takes an interdisciplinary approach to research design and methods. The course culminates with a research proposal/project to give students the opportunity to think about the application of observation, gathering, and analyzing data in a research project. (Formerly CLAS 142).

Units: 3

CLAS 160. Sex, Race, and Class in American Society
From an interdisciplinary perspective, focuses on ethnic identity and gender and their interrelationship with socioeconomic class structure in American society. Special attention is given to analyzing how inequities in race, gender, and class structures influence and shape social, economic, and political relations in society. Multicultural/International M/I.

Units: 3
Course Typically Offered: Fall, Spring

CLAS 162. Chicana Women in a Changing Society
(CLAS 162 same as WS 139) Focuses on current issues relevant to Chicana women in the workforce, the family, the health care system, and the educational system. The intersection of race, class, and gender will be the analytical context for examining both their historical and contemporary roles.

Units: 3
Course Typically Offered: Fall

CLAS 170. Latin American Studies
Prerequisites: G.E. Foundation and Breadth Area D. Overview of the dynamic changes in the nations of Latin America. Uses an interdisciplinary approach that integrates a cultural, political, social, and economic perspective to the study of Latin American countries. Helps students develop a better understanding of the historical roots and circumstances that are shaping the current realities of each nation. Multicultural International M/I.

Units: 3

CLAS 171. Multicultural Brazil
(CLAS 171 same as HIST 161). This course analyzes Brazil's social, economic, and political relations from a historical perspective. It emphasizes topics such as the contradictory legacy of slavery and its consequences, including inequality and multiculturalism. It also examines Brazil's international relations, its roles as a regional power, and its potential as a global power.

Units: 3
Course Typically Offered: Spring

CLAS 172S. Migration in the Americas
This course will examine Latin American migration from the late nineteenth century to the present. The central question we will cover is: why do people migrate? This course has a service learning component.

Units: 3
Course Typically Offered: Spring

CLAS 173. Latin American Politics
(CLAS 173 same as PLSI 148) Discusses the role of the military and violence in Latin American politics, the role of civilian groups with emphasis on democratization, and the influence of other nations - especially the United States - on Latin American politics.

Units: 3
CLAS 180T. Topics of Chicano Society
Culture, art forms, economy, and societal organization. Certain CLAS 180T classes are CR/NC grading only. See department for further information.
Units: 1-3

CLAS 180T. Latinx in Education
This course will explore the historical, institutional foundations that shaped the education experiences of Latinxxs in the U.S., particularly along the southwestern U.S. and California. Equally important, this course will examine the experiential and cultural knowledge that Latinx students carry with them to enrich their formal education. This course is open to all students interested in learning more about the foundations and implications of Latinx students in the past, present, and for the future. (Offered Fall 2019 and Spring 2020)
Units: 3

CLAS 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

CHEMISTRY

CHEM 1A. General Chemistry 1A
Prerequisites: High school chemistry. Pre or co-requisites: G.E. Foundation B4 and CHEM 1AL. Not open to students with credit in CHEM 1B. Fundamental principles of chemistry such as chemical bonding and structure, stoichiometry, thermochemistry, oxidation-reductions, and states of matter. G.E. Breadth B1 with CHEM 1AL. (3 lecture hours).
Units: 3
GE Area: B1

CHEM 1AL. General Chemistry Laboratory 1A
Pre or Co-requisite: CHEM 1A. Introduction to laboratory methods in general chemistry. G.E. Breadth B1 with CHEM 1A. (3 lab and 1 discussion hours) (Course fee, $15).
Units: 2
GE Area: B1

CHEM 1B. General Chemistry 1B
Prerequisite: CHEM 1A and 1AL with grades of C or better. Pre or co-requisite: CHEM 1BL. Acid-base theory; chemical kinetics; equilibrium (acid-base, hydrolysis, and solubility); thermodynamics, electrochemistry; selected topics in nuclear chemistry, coordination chemistry, and/or chemistry of selected groups. (3 lecture hours)
Units: 3

CHEM 1BL. General Chemistry Laboratory 1B
Pre or Co-requisite: CHEM 1B. Introduction to laboratory methods in general chemistry. (6 lab hours) (Course Fee $15)
Units: 2

CHEM 3A. Introductory General Chemistry
Prerequisite or co-requisite: G.E. Foundation B4. No credit for CHEM 3A after CHEM 1A. High school chemistry recommended. For applied science and nonscience majors. Composition of matter and physical and chemical changes; fundamental laws and principles; atomic and molecular structure; acid-base theory, redox and equilibria; qualitative and quantitative theory and techniques. G.E. Breadth B1* (Course fee, $15)
Units: 4
Course Typically Offered: Fall, SpringGE Area: B1

CHEM 3B. Introductory Organic and Biochemistry
Prerequisite: CHEM 3A. No credit for CHEM 3B to students with credit in CHEM 1B. Primarily for students in health-oriented professions; not a substitute for CHEM 8. Introduction to the basic concepts of organic and biochemistry. Structure and behavior of organic and biological compounds, metabolism, and regulation.
Units: 3
Course Typically Offered: Fall, Spring

CHEM 3BL. Introductory Organic and Biochemistry Laboratory
Prerequisite: CHEM 3A and CHEM 3B (or concurrently). Introductory laboratory study of the properties and chemistry of carbon containing compounds and biological molecules. (3 laboratory hours) (Course fee, $20)
Units: 1
Course Typically Offered: Fall, Spring

CHEM 8. Elementary Organic Chemistry
Prerequisite: CHEM 1B or CHEM 3A. Not open to chemistry majors. Recommended for students requiring a one-semester course in the field. Lectures, discussions, and demonstrations of fundamental principles; structure and chemical behavior of organic compounds.
Units: 3
Course Typically Offered: Fall, Spring

CHEM 10. Chemistry and Society
Not open to students with credit in college chemistry; for nonscience majors. Prerequisite: completion of the General Education B4 area requirement. The significance of chemical principles in contemporary society; benefits and hazards relative to areas such as energy, health, diet, environment, and agriculture. G.E. B1. (3 Lecture, 2 lab hours) (Course fee, $7)
* (Formerly CHEM1)
CHEM 102. Quantitative Analytical Chemistry  
For chemistry majors; recommended for other science majors. Prerequisites: CHEM 1B (with a grade of C or better) and CHEM 128A. Students with credit in a similar lower-division quantitative analysis course will receive only one additional unit of credit. Introduction to principles and methods of analytical chemistry. (3 lecture, 6 lab hours) (Course fee, $25)
Units: 5  
Course Typically Offered: Fall, Spring

CHEM 105. Quantitative Analysis Laboratory  
Not open to chemistry majors. Prerequisites: CHEM 1A (with a grade of C or better), or CHEM 3A (with a grade of B or better), or permission of instructor. Laboratory study of principles and methods of applied quantitative analysis. (2 lecture, 6 lab hours) (Course fee, $25)
Units: 4  
Course Typically Offered: Fall, Spring

CHEM 106. Analytical Measurements Laboratory  
Prerequisites: CHEM 102 (with a grade of C or better), CHEM 108 or CHEM 110A, or permission of instructor. Completion of Upper Division Writing Exam or passing a "W" course with a C or better. Principles and methods of analytical measurements of organic and inorganic substances by instrumental and non-instrumental techniques. (2 lecture, 6 lab hours) (Course fee, $25)
Units: 4  
Course Typically Offered: Fall

CHEM 106S. Instrumental Analysis in Industrial Settings  
Prerequisites: CHEM 102 (with a grade of C or better), CHEM 108 or CHEM 110A, completion of the upper-division writing requirement, or permission of instructor. Principles and methods of analytical measurements using instrumental techniques. Meets off campus and focuses on the use of techniques within industry settings for environmental monitoring in the Central Valley. (2 lecture, 6 lab hours). $25.00 course fee
Units: 4

CHEM 108. Introductory Physical Chemistry  
Prerequisites: MATH 76 (MATH 77 strongly recommended), CHEM 8 or CHEM 128A and PHYS 2A, PHYS 2B or PHYS 4A, PHYS 4AL, PHYS 4B, PHYS 4BL, and PHYS 4C. Basic treatment of gas laws, thermodynamics, phase equilibria, properties of solutions, kinetics, and spectroscopy.
Units: 4

CHEM 110A. Physical Chemistry  
Prerequisites: MATH 76; CHEM 1B, CHEM 8 or CHEM 128A; PHYS 2B or PHYS 4B. MATH 77 and PHYS 4C strongly recommended. Mathematical treatment of the elementary statistical and quantum mechanics, crystal structure, molecular structure, and molecular spectroscopy.
Units: 3  
Course Typically Offered: Fall

CHEM 110B. Physical Chemistry  
Prerequisites: MATH 77; CHEM 110A; PHYS 4C or permission of instructor. Mathematical treatment of the laws of thermodynamics, reaction kinetics, statistical thermodynamics, properties of solutions, kinetic theory of gases, and nuclear chemistry.
Units: 3  
Course Typically Offered: Spring

CHEM 111. Physical Chemistry Laboratory  
Prerequisite: CHEM 110B or CHEM 112 or concurrently; CHEM 102. Completion of Upper Division Writing Exam or passing a "W" course with a C or better. Techniques of physical measurements, error analysis and statistics; ultra-violet, infrared, and nuclear magnetic resonance spectroscopy; dipole moments, viscosity, calorimetry, kinetics phase diagrams, thermodynamic measurements, and report writing. (1 lecture, 6 lab hours) (Course fee, $25)
Units: 3  
Course Typically Offered: Spring

CHEM 112. Biophysical Chemistry  
Prerequisites: CHEM 108 or 110A. Principles of thermodynamics, equilibria, and kinetics applied to biological processes and systems including proteins, nucleic acids, and membranes. Microscopic structure and assembly, statistical analyses, spectroscopy, photobiology, and biological magnetic resonance.
Units: 3  
Course Typically Offered: Spring

CHEM 123. Advanced Inorganic Chemistry  
Prerequisites: CHEM 1B, CHEM 102 and CHEM 110A (or concurrently). Treatment of ionic and covalent bonding, atomic structure, molecular structure, and reaction mechanisms. Introduction to visible and infrared spectroscopy of transition metal complexes, special topics.
Units: 3  
Course Typically Offered: Fall

CHEM 124. Synthesis and Characterization  
Prerequisite: CHEM 123 or concurrently. Completion of Upper Division Writing Exam or passing a "W" course with
Techniques of preparation to include high temperature reactions, vacuum line and glove box preps, nonaqueous syntheses, solid state reactions. Emphasis on structural characterizations using instrumental methods. (6 lab hours) (Class fee, $35)

Units: 2
Course Typically Offered: Spring

CHEM 125. Applied Analytical Techniques
Prerequisites: CHEM 8 or CHEM 128A and CHEM 102 or CHEM 105. Analytical techniques and their applications in clinical, environmental, agricultural and forensic analytical and bioscience laboratories. (2 lecture, 3 lab hours)

Units: 3

CHEM 128A. Organic Chemistry
Prerequisites: CHEM 1B with a grade of C or better, CHEM 8 with a grade of C or better, or permission of instructor. For chemistry majors; recommended for premedical, prepharmacy, preveterinary, predental, preoptometry students and other science majors. Introduction to structure and reactivity of principal classes of organic compounds with emphasis on theory and mechanism.

Units: 3
Course Typically Offered: Fall, Spring

CHEM 128B. Organic Chemistry
For chemistry majors; recommended for premedical, prepharmacy, preveterinary, predental, preoptometry students and other science majors. Prerequisites: CHEM 128A with a grade of C or better. Introduction to structure and reactivity of principal classes of organic compounds with emphasis on theory and mechanism.

Units: 3
Course Typically Offered: Fall, Spring

CHEM 129A. Organic Chemistry Laboratory
Prerequisites: CHEM 8 or CHEM 128A with a grade of C or better. CHEM 128A can be taken concurrently. Introduction to experimental techniques used in organic chemistry, including the preparation, purification, and identification of organic compounds. (6 lab hours) (Course fee, $25)

Units: 2
Course Typically Offered: Fall, Spring

CHEM 129B. Organic Chemistry Laboratory
CHEM 129A is a prerequisite. CHEM 128B is a prerequisite or corequisite. Preparation, purification, and identification of organic compounds. Introduction to chemical research by way of independent projects. (Course fee, $15)

Units: 2

CHEM 140T. Topics in Chemistry
Prerequisite: permission of instructor. Seminar covering special topics in one of the areas of chemistry: analytical, biochemistry, inorganic, organic, physical. Some topics may have a laboratory.

Units: 1-4

CHEM 140T. Introduction to Computing in Chemistry
Prerequisites: CHEM 1B and MATH 76. This course will explore the various uses of computers in chemistry. Students will learn about and use tools for data analysis and scientific computing such as MATLAB and shell scripting, as well as tools more specific to chemistry, including software for molecular visualization and ab initio quantum chemistry. Particular emphasis is placed on interpreting results and understanding methods used in modern research, and students will apply the material to a computational research project. (Offered Spring 2020)

Units: 3

CHEM 140T. Chemistry and the Law
The course will start with regulatory aspects of doing chemistry such as interacting with the FDA in the course of getting approval of a new drug. The course will continue with intellectual property considerations and discuss patents and their impact on industry and academia. The course will finish with how chemists may be impacted by litigation, including criminal law, tort law, and patent law. Each topic will also introduce the student to the career opportunities in that area. (Offered Spring 2020)

Units: 3

CHEM 150. General Biochemistry
Prerequisite: CHEM 3B or CHEM 8, or both CHEM 128A and CHEM 128B. (CHEM 150 and CHEM 155B together constitute a year sequence.) Chemistry and metabolism of basic cellular constituents including carbohydrates, lipids, proteins, and nucleic acids.

Units: 3
Course Typically Offered: Fall, Spring

CHEM 155A. Fundamentals of Biochemistry
Prerequisites: CHEM 128B. Primarily for chemistry majors; recommended for premedical students and graduate students in the sciences. Structure, function, and metabolism of chemical entities in living systems.

Units: 3
Course Typically Offered: Fall

CHEM 155B. Physiological Chemistry and Metabolism
Prerequisite: CHEM 150 or CHEM 155A. Continuation of CHEM 150 or CHEM 155A. Intensive discussion of the
degradation and biosynthesis of major cellular constituents; energy metabolism; control of metabolic processes and pathological implications in mammalian systems. (Formerly CHEM 153)

Units: 3
Course Typically Offered: Spring

CHEM 156. Biochemical Laboratory Techniques
Prerequisites: senior standing or permission of instructor; CHEM 150 or CHEM 155 or 155A (or concurrently), CHEM 102 or CHEM 105, CHEM 129A. Completion of Upper Division Writing Exam or passing a "W" course with a C or better. Provides the student with a range of techniques and methodology appropriate to the study or phenomena at the biochemical, cellular, and organismic levels. Satisfies the senior major requirement for the B.A. in Chemistry. (1 lecture, 6 lab hours) (Course fee, $30)

Units: 3
Course Typically Offered: Spring

CHEM 161W. Scientific Writing Workshop
Prerequisites: GE Foundation and Breadth Area B, ENGL 5B or ENGL 10 (C or better), to be taken no sooner than the term in which 60 units are completed. A review of common conventions and forms of scientific and technical writing including practical assignments in the preparation of laboratory procedures, research grant proposals, and research manuscripts. Meets the upper-division writing skills requirement for graduation.

Units: 3

CHEM 170. Chemistry in the Marketplace
Not open to chemistry majors. Prerequisites: completion of General Education Quantitative Reasoning (Area B4) and Area B2 Breadth requirements. The impact of chemistry and chemicals on society and individual lives. G.E. Integration IB. (3 lecture hours)

Units: 3
GE Area: IB

CHEM 190. Independent Study
Prerequisite: Permission of instructor. See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

CHEM 201. Chemistry Laboratory Teaching Techniques
Prerequisites: concurrent appointment as a teaching associate in the department of Chemistry or permission of instructor. Discussion and practice of effective laboratory teaching techniques, laboratory safety, common equipment setups, and grading. (2 activity hours)

Units: 1
CHEM 227. Analytical Spectroscopy  
Prerequisites: CHEM 106, CHEM 110A, CHEM 110B, or permission of instructor. Theory, instrumentation, and application. Recent developments and literature of spectroscopic techniques. May include laboratory.  
Units: 1-3

CHEM 228. Mass Spectrometry  
Prerequisites: CHEM 106 or CHEM 125, CHEM 128B, CHEM 108 or CHEM 110A, and CHEM 110B; or permission of instructor. Seminar on the theory and application of mass spectrometry techniques to chemical analysis and identification. May include laboratory.  
Units: 1-3

CHEM 230. Advanced Organic Chemistry  
Prerequisites: CHEM 128B, CHEM 129B. Seminar on recent advances in organic chemistry including reaction mechanisms and synthetic applications with references to current literature.  
Units: 3

CHEM 235. Physical Organic Chemistry  
Prerequisites: CHEM 110A, CHEM 110B, CHEM 128B. Seminar in application of modern theoretical concepts to the chemical and physical properties of organic compounds.  
Units: 3

CHEM 240T. Topics in Advanced Chemistry  
Seminar covering special topics in one of the areas of chemistry: analytical, biochemistry, inorganic, organic, physical. Some topics may have a laboratory.  
Units: 1-3

CHEM 241A. Molecular Biology I-II  
(BIOL 241A same as CHEM 241A and FBS 241A.) Prerequisites: BIOL 102, BIOL 103, CHEM 150 or CHEM 155A or permission of instructor. Current topics in molecular biology are addressed, including protein and nucleic acid structure, DNA replication, transcription, translation, prokaryotic and eukaryotic regulation, mechanisms of exchange of generic material, and recombinant DNA technology.  
Units: 3

CHEM 241B. Molecular Biology I-II  
(Same as BIOL 241A and BIOL 241B.) Prerequisites: BIOL 140A, BIOL 140B, CHEM 150 or CHEM 155A, or permission of instructor. Prerequisite for BIOL 241B or CHEM 241B. Current topics in molecular biology are addressed, including protein and nucleic acid structure, DNA replication, transcription, translation, prokaryotic and eukaryotic regulation, mechanisms of exchange of generic material, and recombinant DNA technology.  
Units: 3

CHEM 242. Techniques in Protein Purification and Analysis  
(Formerly CHEM 242. Same as BIOL 242.) Prerequisite: CHEM 151 or CHEM 156 or permission of instructor. Corequisite: BIOL 241A or CHEM 241A. Deals with the technologies relevant to protein isolation, purification, analysis, immobilization, and modification in micro and macro quantities. (1 lecture, 6 lab hours) (Class fee, $40)  
Units: 3

CHEM 243. Nucleic Acid Technology Lab  
(Same as BIOL 243.) Prerequisites: BIOL 241A or CHEM 241A and BIOL 242 or CHEM 242. Corequisite: BIOL 241B or CHEM 241B. A lecture/laboratory course focusing on the technologies used in nucleic acid chemistry; specifically, synthesis, translation, mutagenesis, and genetic engineering. (1 lecture, 6 lab hours) (Course fee, $40)  
Units: 3

CHEM 244. Cell Culture Techniques  
(Formerly CHEM 244. Same as BIOL 244.) Prerequisites: BIOL 103 and BIOL 104. The theory and practice of in vitro propagation of eukaryotic cells, including growth characteristics, metabolic requirements, genetic analysis, and screening assays. Special focus is on cancer cell lines with the potential for stem cell manipulation relative to cell biology culture and application to biotechnology. (1 lecture, 6 lab hours) (Course Fee, $40)  
Units: 3

CHEM 245. Industrial Biotechnology  
(Formerly CHEM 245) Prerequisites: BIOL 120 and CHEM 150 or CHEM 155, or permission of instructor. The study of bioprocessing, both theory and current practices, including hands-on experience with standard techniques and formulation of a strategic plan for a new technology or product. (2 lecture, 3 lab hours).  
Units: 3

CHEM 248. Seminar in Molecular Biology and Biotechnology  
(CHEM 248 same as BIOL 248.) Prerequisite: admission to the biology or chemistry graduate program. Preference will be given to students enrolled in the Master of Biotechnology Program. Reviews and reports on current literature in various aspects of biotechnology and molecular biology.  
Units: 1-2

CHEM 250. Forensic Micropscopy & Materials Analysis  
Forensic science methods for analysis of inorganic evidentiary materials, including composition and comparison of trace and impression evidence and their interpretation and
significance. This course will cover topics in microscopy (confocal, polarized, brightfield, phase contrast, dissecting, compound, comparison, electron), impression evidence (fingerprints, firearms/toolmarks), trace evidence (hair, fibers, and biological), arson, ink comparisons, evidentiary statistics, and quality assurance/quality control (QA/QC). (2 hours lecture, 2 hours lab)

Units: 3

CHEM 260. Advanced Research Techniques
Prerequisites: classified standing or permission of the instructor. Advanced concepts in experimental design. Development of practical research expertise and communication skills through the planning, completion, and presentation (both written and oral) of a short laboratory project. (1 lecture, 6 lab hours)

Units: 3

CHEM 280. Seminar in Chemistry
Approved for RP grading.

Units: 1, Repeatable up to 3 units

CHEM 290. Independent Study
See Academic Placement -- [LINK-]. Approved for RP grading.

Units: 1-3

CHEM 295. Research
Prerequisite: permission of instructor. Independent investigations of an advanced character for the graduate student with adequate preparation. Approved for SP grading. (May include conferences, laboratory, library.)

Units: 2

CHEM 298. Project
Prerequisite: Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.

Units: 4

CHEM 298C. Project Continuation
Pre-requisite: Project CHEM 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

CHEM 299. Thesis
Prerequisite: See [LINK-]. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.

Units: 5

CHEM 299C. Thesis Continuation
Pre-requisite: Thesis BIOL 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

CHEM 340T. Topics in Chemistry
A professional development seminar covering special topics in one of the areas chemistry: analytical, biochemistry, forensic, inorganic, organic, physical. Some topics may have a laboratory or activity component.

Units: 1-3

EHD 154B. Final Student Teaching Seminar - Chemistry
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss a variety of topics and strategies and to reflect on issues that surface during their student teaching experience.

Units: 1

EHD 155B. Studt Tchg Chem
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.

Units: 5-10
Course Typically Offered: Fall, Spring

LEE 101S. Early Learning for School Success
This class looks at young children, birth to grade three, and early learning experiences at home and school that promote academic success for children having diverse backgrounds. Topics include life skills, literacy development, community learning resources, social interaction and early intervention.

Units: 3
Course Typically Offered: Fall, Spring

LEE 103. Pedagogy for Teaching Ethnic Studies
Focuses on the development of critical pedagogy for preservice and in-service teachers interested in teaching Ethnic Studies in K-12. Students will learn: The history and social foundations of U.S. education; the origins, present, and future of critical pedagogy; common core state-adopted standards and
strategies to promote student success in multiple content areas; how to enact culturally and linguistically sustaining pedagogy.

Units: 3
Course Typically Offered: Fall

LEE 109S. Literacy Engagement in the Community
This 3-unit course is intended to provide an in-depth experience in individualized literacy assessment and instruction through service-learning. Students will work with children and their families as part of their coursework. This course is a service-learning course that will involve at least 23 hours of work with children and families.

Units: 3
Course Typically Offered: Fall, Spring

LEE 120CL. Problems in Education - Children's Literature
In-depth study of Children's Literature in education. Might require activities.

Units: 2-3
Course Typically Offered: Fall, Spring

LEE 120ST. Problems in Education - Storytelling
In-depth study of storytelling in education. Might require activities.

Units: 2-3

LEE 129. Hmong in Bilingual Schools: BCLAD
Prerequisite: HMONG 101 or equivalent. Emphasis on Hmong language development for bilingual teachers. Includes basic content area instruction in Hmong, evaluation of teaching materials, and conferencing with parents. (Formerly HMONG 104)

Units: 3
Course Typically Offered: Fall

LEE 135. Teaching Content in Hmong
Prerequisites: Hmong language fluency or permission of instructor. L1 methods and materials used to teach content in bilingual classrooms. Designed for BCLAD candidates. Students will deliver lessons in the Hmong language in bilingual classrooms in local schools under university supervisor. (Formerly LEE 139)

Units: 3
Course Typically Offered: Spring

LEE 136. Teaching Content in Spanish
Prerequisites: Spanish Language fluency or permission of instructor. L1 methods and materials used to teach content in bilingual classrooms. Designed for BCLAD candidates. Students will deliver lessons in the Spanish language in bilingual classrooms in local schools under university supervisor. (Formerly LEE 139)

Units: 3

Course Typically Offered: Fall

LEE 144S. Service-Learning Pedagogy and Practice
Prepares students to design and implement service-learning in K-12 schools and community settings. Examines theoretical roots, methods of effective teaching practice, and academic, social, emotional outcomes for student learning. Practical experiences involves implementing project with local school districts.

Units: 3

LEE 146. Teaching Reading in K-3 Classrooms
Prerequisites: (1) admission to the Multiple Subject Credential Program or the Special Education Credential Program (2) CI 130 and CI 140, and CI 150 or LEE 148 (or concurrent enrollment); (3) concurrent enrollment in EHD 110 or EHD 112 (if Option II) is highly recommended. LEE 146 and LEE 149 must be taken concurrently with EHD 110 (except for option II and Special Education.) Balanced reading/writing program for grades K-3, assessment strategies to guide literacy instruction, explicit skills teaching in a literacy instruction, explicit skills teaching in a literature-based classroom, and techniques for culturally/linguistically diverse learners.

Units: 3

LEE 148. Integrated Curriculum
Concurrent enrollment with EHD 114. Integrated curriculum design, facilitation, and assessment in early childhood programs, including preschool, kindergarten, and grades 1-6. Lecture supported by curriculum development activities.

Units: 3

Course Typically Offered: Fall

LEE 149. Teaching Reading in 4-8 Classrooms
Prerequisites: (1) admission to the Multiple Subject Credential Program or the Special Education Credential Program; (2) CI 130 and CI 140, and CI 150 or LEE 148 (or concurrent enrollment); (3) concurrent enrollment in EHD 110 or EHD 112 (if Option II) is highly recommended. LEE 146 and 149 must be taken concurrently with EHD 110 (except for Option II and Special Education). Balanced reading/writing program for grades 4-8; assessment techniques to guide instruction, emphasizing comprehension and strategy teaching; integration language arts with content area instruction; and techniques for culturally/linguistically diverse students. (Formerly LEE 156M)

Units: 3

Course Typically Offered: Fall

LEE 153. Transitional Kindergarten Classroom Environments
The TK/ECE classroom environment is responsive to young children's learning and development. It includes organization, standards-based, core curriculum, grouping, materials, activity centers and partnering with parents. Adapting program for cultural
and language differences and special needs are covered. (Formerly LEE 180T)

Units: 3
Course Typically Offered: Fall, Spring

LEE 154. Content Area Language and Literacy Instruction
Prerequisite: Admission to the Single Subject credential program and prior or concurrent enrollment in EHD 155A or EHD 155B. Educational issues, methodologies, and materials to improve students' listening, speaking, reading and writing in content areas at the secondary level (7-12). Special emphasis on skills necessary to deliver comprehensive instruction to English learners. (Formerly LEE 180T)

Units: 5
Course Typically Offered: Fall, Spring, Summer

LEE 156. Content Area Literacy and Communication in Secondary Classrooms
Research-based literacy strategies; vocabulary development; academic language; reading comprehension; writing using discipline-specific formats. Teaching content-based reading and writing skills to a full range of students.

Units: 3

LEE 157. Teaching English Learners in Secondary Classrooms
Prerequisites: Admission to the Single Subject Credential Program and concurrent enrollment in EHD 155A or EHD 155B. Educational issues, methodologies, and materials to improve students' listening, speaking, reading, and writing in content areas at the secondary level (7-12). Special emphasis on skills necessary to deliver comprehensive instruction to English learners.

Units: 3

LEE 158. Literacy Foundation TK-8
Teacher candidates will define literacy and investigate influential factors in becoming literate in multiple subject areas. Using Universal Design for Learning guiding principles, candidates will design and implement integrated, thematic literacy instruction and engage in cycles of reflective practice. (Formerly LEE 180T)

Units: 3
Course Typically Offered: Fall, Spring

LEE 159. Culturally and Linguistically Sustaining Pedagogy in the TK-8 Context
This course will address: 1) the impact of language and culture on teaching and learning in the elementary school, 2) language acquisition theory, socio-cultural context in teaching and instructional strategies for Emergent Bilinguals in the classroom, and 3) strategies to promote student success. (Formerly LEE 180T)

Units: 3

Course Typically Offered: Fall, Spring

LEE 160. Inquiry and Puzzles of Practice A
Prerequisite: Admission to the multiple subject credential program. This course will focus on action research, situate it within an equity-based paradigm, and focus on development of inquiry as stance. Students will explore problems of practice through engagement in cycles of inquiry from their fieldwork. In order to develop the stance necessary for reflective teaching, students need time to explore their own field-based problems of practice with an eye on critical, data-driven problem solving. (Formerly LEE 180T)

Units: 3
Course Typically Offered: Fall, Spring

LEE 166. Disciplinary Literacies and Integrated Curriculum
Teacher candidates will examine how reading, writing, talking, listening and viewing are tools for learning content across the disciplines. A disciplinary literacy framework will guide an inquiry-based approach to curriculum planning, curriculum implementation, and assessment principles. (Formerly LEE 180T)

Units: 3
Course Typically Offered: Fall, Spring

LEE 167. Inquiry and Puzzles of Practice B
Prerequisite: LEE 160. This course will focus on action research, situate it within an equity-based paradigm, and focus on development of inquiry as stance. Students will explore problems of practice through engagement in cycles of inquiry from their fieldwork. In order to develop the stance necessary for reflective teaching, students need time to explore their own field-based problems of practice with an eye on critical, data-driven problem solving. (Formerly 180T)

Units: 3
Course Typically Offered: Fall, Spring

LEE 169S. Inquiry and Puzzles of Practice C
Prerequisite: LEE 167. This course will focus on formal engagements with inquiry and the development of teacher-as-researcher identity. In order to develop the stance necessary for reflective teaching, students will explore puzzles of practice through engagement in cycles of inquiry while conducting a service-learning project at their school site.

Units: 3

LEE 170. Social-Emotional Learning: Anti-Bullying and Classroom Intervention
This is an active learning course for teachers, counselors, psychologists, social workers and other school personnel interested in creating psychologically and physically safe learning environments through anti-bullying prevention and intervention activities and by establishing conflict resolution programs.

Units: 3
LEE 171. Trends and Issues in Early Childhood Education
A comprehensive study of the field of early childhood education, including principles of early childhood education, parent relations, use of community resources, and organization of programs in early childhood education.

Units: 3
Course Typically Offered: Fall, Spring

LEE 172. Cultural & Language Context of the Classroom
Prerequisite: Admission to the Multiple Subject Credential Program. CI 171 or concurrent enrollment. Students not concurrently enrolled in EHD 174 need to make special arrangements with instructor. The impact of culture on teaching and learning in the elementary school. Language acquisition theory and instructional strategies for English Learners. Promoting student success, including achievement of state-adopted content and language-development standards.

Units: 3
Course Typically Offered: Fall, Spring, Summer

LEE 172ECES. Cultural Contexts of Teaching and Learning
Prerequisites: Admission to Multiple Subject Credential, Early Childhood Education Program; completion or concurrent enrollment in CI 171ECE. Culture is interpreted broadly including: student family, ethnicity, language, the culture of the profession, and classroom culture.

Units: 3
Course Typically Offered: Fall, Spring

LEE 173. Teaching Reading and Social Studies in Grades 4-8
Prerequisite: Admission to Multiple Subject Credential Program. CI 171, LEE 172, LEE 173, EHD 174, CI 175, CI 176 (or concurrent enrollment). Concurrent enrollment in EHD 174. Teaching state-adopted English-Language Arts (4-8) and history-social science (K-8) content standards using research-based methods. Use of a variety of assessments to determine students' progress. Organizing, managing, and planning instruction for reading and social studies. Developmentally appropriate practices to make content accessible to all students

Units: 3
Course Typically Offered: Fall, Spring, Summer

LEE 173ECE. Teaching Literacy and English Language Development in Grades 4-8
Prerequisites: Admission to Multiple Subject Credential, Early Childhood Education Program; concurrent enrollment in EHD 174ECE; completion or concurrent enrollment in CI 171ECE and LEE 172ECE. Teaching reading, writing, language arts, and English language development in grades 4-8, and making content area reading (e.g. in history/social studies) accessible.

Units: 3

Course Typically Offered: Fall, Spring, Summer

LEE 177. Teaching Reading and the Arts in K-3
Prerequisite: CI 171, LEE 172, LEE 173, EHD 174, CI 175, CI 176 (or concurrent enrollment). Concurrent enrollment in EHD 178. Assessment and instructional approaches for the balanced teaching of reading/language arts in the primary grades: using developmentally appropriate practices, studying state standards for literacy development and component strands for visual and performing arts, and selecting techniques for culturally/linguistically diverse learners

Units: 3
Course Typically Offered: Fall, Spring

LEE 177ECE. Language and Literacy Development and Instruction
Prerequisites: Completion of Phase I Multiple Subject Credential, Early Childhood Education Program (CI 171ECE, LEE 172ECE, LEE 173ECE, EHD 174ECE, CI 176); concurrent enrollment in EHD 178ECE. Early literacy instruction from birth, including a comprehensive literacy program for pre K through grade 3, first and second language acquisition, family literacy, and early intervention.

Units: 3
Course Typically Offered: Fall, Spring

LEE 180T. Topics in Literacy and Early Education
Issues and topics in reading, bilingual/cross-cultural education, reading, and language development.

Units: 1-3

Lee 180T. Literacies, Languages, and Literature
This course explores the teaching of Literacies, Languages and Literature. While examining theories, research, and practices of literacies, this course will provide an introduction to literacy assessment and instructional approaches to reading, writing, speaking, and listening. Through guiding principles of Culturally Sustaining Pedagogy (CSP) and Universal Design for Learning (UDL), students will develop knowledge of children's literature and explore ways to integrate children's literature into elementary curricula. (Offered Spring 2020)

Units: 3, Repeatable up to 9 units

LEE 180T. Essential Components of Literacy Instruction
This course is designed to provide additional content and test taking support to candidates preparing for RICA. (Offered Fall 2019 and Spring 2020)

Units: 3

LEE 180T. Reading Institute for Academic Preparation II
This course is designed for the seconday and post-secondary teacher, and it will present educational reserach regarding literacy in the content areas, writing, vocabulary development, and reading comprehension at higher levels.
Units: 1, Repeatable up to 9 units

LEE 180T. Literature & Music: Singing the Classics
Through the use of literature (The 3 Bears, The Little Red Hen, Chicken Little, etc.) and music, learn how to incorporate activities and ideas that encourage and excite primary children to read and write. Take home a free CD and abundant handouts ready to use on Monday. A make it/take it session will allow participants to copy clients and develop materials. Participants need to bring 2 art samples and a work caddy (glue, scissors, marking pens, etc.) for Friday's session.
Units: 1, Repeatable up to 9 units

LEE 180T. From Phonics to Reading
This workshop will provide a combination of lecture-discussion and make-it-take-it activities that enable teachers to help their students become better readers. Know the 6 components that make a Balanced Reading Program and what it takes to teach children to "want" to read.
Teachers need to bring two art samples and a work caddy with marking pens, scissors, glue, etc. on Friday. Handouts available. Abundant charts for copying available. Seasonal ideas to be shared.
Units: 1, Repeatable up to 9 units

LEE 180T. Certificate Award in Translating/Interpreting in School Environment
With the significant growth of the Spanish-speaking population in the Central Valley, the demand for professionals and paraprofessionals who can help meet the needs of Spanish-speaking students and parents is increasing. Quality interpretation and translating are essential. This program is designed for practicing interpreters/translators and those desiring to enter the field. To participate in the program, one must be bilingual in Spanish and English and have at least a high school education or its equivalent.
Units: 3, Repeatable up to 9 units

LEE 180W. Literacy for Social Justice and Equity
Prerequisites: Completion of at least 56 units; Completion of the lower-division writing requirement. Enrollment limited to Liberal Studies majors. This course explores literacy for social justice and equity in schools, communities, and societies. Students will engage in reading, discussion, and the writing process. Meets the upper-division writing skills requirement for graduation.
Units: 3
Course Typically Offered: Spring

LEE 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

Course Typically Offered: Fall, Spring

LEE 213. Teaching the Language Arts K-12
Seminar on integrated language arts, reading-writing connections, and using language arts in literature-based reading programs and theme cycles.
Units: 3

LEE 214. Literature for Children and Adolescents
Prerequisite: admission to program or permission of instructor. Survey of genre, authors, and illustrators; critical interpretation and classroom application of books; the impact of social and cultural patterns in literature.
Units: 3

LEE 215. Language Issues in Reading
Prerequisite: admission to program or permission of instructor. Seminar exploring issues related to language acquisition and literacy development with special emphasis on culturally and linguistically diverse learners.
Units: 3

LEE 216. Strategic Writing K-12
This course focuses on strategies for effective writing for students in grades K - 12. Topics include planning writing experiences based on audience, purpose, and form, writing across the curriculum and scaffolding students through processes of prewriting, drafting, revising, editing, and publishing.
Units: 3

LEE 221. Early Childhood Curriculum for Children with Special Needs
Modification in mainstreamed or special settings to adapt early education curriculum for young children with special needs. Study of theoretical models, research, teaching techniques, criteria for selection of appropriate materials and provisions for adapting physical classroom environments.
Units: 3

LEE 224. Assessment and Development of Reading Abilities
Analysis of reading performance utilizing portfolio and performance based assessments and diagnostic instruments. Consideration of methods and materials for instruction.
Units: 3

LEE 230. Supervised Teaching in Reading/Language Arts
The first of two supervised field work courses required for the Reading Specialist Credential. Provides supervised practice in research-based methodologies and intervention approaches for beginning readers, English learners and students with reading difficulties. A combination of practica and seminars required. (CSU liability insurance fee, $8)
Units: 3

**LEE 232. Literacy in Early Childhood Education**
Prerequisite: admission to program or permission of instructor. Examines development of oral and written language in young children. Explores theories, curricula, and strategies for teaching literacy.

Units: 3

**LEE 233. Curriculum and Assessment in Early Childhood Education**
Prerequisites: admission to program or permission of instructor. Design of appropriate curriculum and assessment for young children. Includes standards, planning, project approach, integration of play, and materials. Use of observation, rubrics, and portfolios to document development and learning. Organizing environments in early childhood settings, infants through grade three. (2 lecture, 2 lab hours)

Units: 3

**LEE 234. Clinical Experiences in Reading Assessment and Instruction**
Prerequisite: LEE 224. Clinical experiences in the supervised application of principles learned in LEE 224. Emphasis on individual and small group evaluation and instructional procedures. (2 lecture, 2 lab hours) (Instructional materials fee, $10)

Units: 3

**LEE 235. Concept Development in Early Childhood Education**
Prerequisite: admission to program or permission of instructor. Study of how young children develop concepts. Analysis of existing curriculum and design of relevant curriculum. (2 lecture, 2 lab hours)

Units: 3

**LEE 241. Fieldwork in Early Childhood Education**
Prerequisite: admission to program or permission of instructor. Supervised experiences in work with young children and their families. (CSU liability insurance fee, $8)

Units: 3

**LEE 244. Research for Reading Professionals**
Prerequisites: LEE 213, LEE 215, LEE 278, and permission of instructor. Study of past and current research in reading related to instructional issues; planning and analysis of curricula in light of current research; application of research skills.

Units: 3

**LEE 250. Leadership in Early Childhood Education**
Leadership in creating, improving and expanding ECE programs, resources and services in schools and community settings. Includes leadership roles, planning for positive educational change, partnerships and networking to at the local, state, national, and international levels.

Units: 3

**LEE 254. Supervised Field Experiences in Reading**
Prerequisite: LEE 224, LEE 244, and permission of instructor. Intensive varied supervised field experiences in settings with reading specialists, consultants, or staff development personnel involving diagnosis and treatment of reading difficulties; development or refinement of reading programs; evaluation of reading instruction; application of interpersonal communications and group process skills. (CSU liability insurance fee, $8)

Units: 3

**LEE 271. Diversity and Inclusion in Early Childhood Education**
Understanding and responding to cultural, ethnic and linguistic diversity and the ways they affect personality, language, cognitive development and socialization. Creating inclusive learning environments and curriculum in early childhood education. (2 lecture, 2 lab)

Units: 3

**LEE 278. Literacy Processes and Practices**
Prerequisite: LEE 154 for Multiple Subject Credential holders; LEE 156 for Single Subject Credential holders; or permission of instructor. Understanding literacy processes through the investigation of current theories, issues, and practices.

Units: 3

**LEE 280T. Advanced Topics in Literacy and Early Education**
Prerequisite: permission of instructor. Advanced, in-depth analysis of issues and problems related to literacy, bilingualism, and early childhood education. Emphasis placed on advanced research.

Units: 1-3

**LEE 280T. Differentiated Instruction in Inclusive Secondary Settings**
Through collaboration with others, for the purpose of establishing an inclusive community of learners, single subject teacher candidates will adapt instruction and manage the learning environment to meet the needs of all learners, with a focus on students with special needs. In addition, single subject graduate students will utilize research to make informed pedagogical and behavioral decisions to meet the needs of all learners, with focus on students with special needs. (Offered Spring 2020)

Units: 3
LEE 280T. Content Area Literacy and Communication in Secondary Classrooms
This is a graduate-level Language and Literacy Education seminar for secondary educators representing a range of content areas. Designed as a collaborative inquiry, the course hinges on teachers problem posing to support adolescent literacy in productive, collaborative, critical, and socially just ways. From a practice standpoint, course participants will develop curricular materials emphasizing youth literacy practices through cross-disciplinary and culturally-sustaining pedagogical lenses. (Offered Spring 2020)
Units: 3

LEE 281. Critical Pedagogy for Diverse Learners
This course examines crucial pedagogy to the educational practices of teaching linguistically and culturally diverse students. It will reflect on critical pedagogy in terms of collaborating and transforming relationships between teachers, students and schools in a multilingual and multicultural society.
Units: 3

LEE 282. Research Topics in Second Language Acquisition
This course examines the qualitative and quantitative research in second language acquisition. Students will critique published research and investigate topic development, the various methods of collecting and analyzing qualitative data in multilingual and multicultural education.
Units: 3

LEE 283. Cultural Competency for Educators
Designed to focus on curriculum development for linguistically and culturally diverse students, identification of teaching strategies for the multilingual classroom, theories of teaching the culturally diverse students, and overview of methods of bilingual, English language development, and content area instruction.
Units: 3

LEE 284. Collaborative Leadership for Educational Diversity
Designed to view issues from multiple perspectives within the context of linguistically and culturally diverse populations in K-18 settings. Focus on analysis of leadership roles in public, school, and agency settings examining research of diverse communities regionally, nationally, and internationally.
Units: 3

LEE 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

LEE 289A. Project Literacy
Prerequisite: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220. See Criteria for Thesis and Project. A project consists of a significant undertaking appropriate to education. An approved proposal is required for enrollment. Approved for RP grading.
Units: 3

LEE 289B. Project: Early Childhood Education
Prerequisite: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220. See Criteria for Thesis and Project. A project consists of a significant undertaking appropriate to education. An approved proposal is required for enrollment. Approved for RP grading.
Units: 1-3

LEE 298C. Project Continuation
Pre-requisite: Project LEE 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

LEE 298D. Project - Multilingual & Multicultural Education
Prerequisite: advancement to candidacy for the Master's degree; B average on 24 units of the Master's program including ERE 220. A project consists of a significant undertaking appropriate to education. An approved proposal is required for enrollment. Approved for RP grading.
Units: 1-3

LEE 299. Thesis
Prerequisite: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220 and completion of an acceptable thesis proposal. Preparation, completion, and submission of an acceptable thesis proposal. See criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.
Units: 1-3

LEE 299C. Thesis Cont
Pre-requisite: Thesis LEE 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

LEE 380T. Nonfiction Matters
Units: 1
SPED 120. Introduction to Special Education
Prerequisites: EHD 50. Introduction to identification, characteristics, theories, curriculum, and instruction for students with mild to severe disabilities, legislative guidelines, nondiscriminatory assessment, parental involvement, and foundation in special education. Includes 15 hours of observation/participation.
Units: 3
Course Typically Offered: Fall, Spring

SPED 121. Teaching Students with Special Needs in the Secondary General Education Setting
Prerequisites: Concurrent enrollment in EHD 155A. This course provides basic knowledge, skills and strategies for teaching special populations including students with disabilities, students on behavior plans, and gifted and talented students in the secondary general education settings. (Formerly EHD 180T)
Units: 2
Course Typically Offered: Fall, Spring

SPED 125. Positive Behavioral and Social Supports
Addresses effective behavior and social supports, emphasizing philosophical approach, prevention, intervention, and corrective strategies for teaching new behaviors. Completion of implementation with special education students required.
Units: 3
Course Typically Offered: Fall, Spring

SPED 126. Applied Behavior Analysis
Prerequisite: completion of semesters 1 and 2 coursework. Designed to introduce the philosophy and research of applied behavior analysis in delivering systemic instruction to students with disabilities. Course focuses on behavior management and academic content area instruction by using the principles of behavior analysis.
Units: 3

SPED 130. Assessing Students with Special Needs
Prerequisites: EHD 50, CI 100 and SPED 120. This course is designed to provide teacher candidates with knowledge and skills of formal and informal assessment that addresses special education students' strengths and needs, cultural, ethnic and language characteristics; as well as the environments used by the students and their families.
Units: 3
Course Typically Offered: Fall, Spring

SPED 135. Assessment and Instruction in the Special Education Academic Curriculum
Addresses non-biased assessment for placement, curriculum development, instruction, and implementation across placement options. Completion of assessment and instruction of special education students in field sited required. (2 seminar, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

SPED 136. Assessment, Curriculum Design and Instruction for Students with Mild/Moderate Disabilities
Prerequisites: Completion of semester 1. Concurrent enrollment in SPED 171. Provides a knowledge base of strategies and interventions for students who are not responding to the current instructional environment with a focus on evidence-base curricula and instructional methods that are effective with students with mild/moderate disabilities.
Units: 3
Course Typically Offered: Fall, Spring

SPED 145. Designing Effective Environments for Students with Moderate/Severe Disabilities
Prerequisites: EHD 50, CI 100 and SPED 120.. This course examines the characteristics of high-quality integrated and inclusive educational programs and key practices for effective instruction of diverse classroom, including students with significant/complex support needs. (2 seminar, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

SPED 146. Assessment and Instruction for Students with Moderate/Severe Disabilities
Prerequisites: Completion of semester 1 coursework. Concurrent enrollment in SPED 172. This course reviews the ecological assessment process, student, family-centered, and culturally responsive assessment, and curriculum-based assessment. It addresses provision of both academic and activity-based systematic instruction and systems for monitoring student progress data.
Units: 3
Course Typically Offered: Fall

SPED 155. The Professional in Special Education
Prerequisites: admission to special education program or permission of instructor. Focuses on advanced application of models for collaboration, application of foundations, and theory in special education; advanced professional, legal, and ethical standards; and advocacy and self-advocacy.
Units: 3
Course Typically Offered: Fall, Spring

SPED 156. Effective Communication and Collaborative Partnerships
Prerequisites: Concurrent enrollment in SPED 137 and SPED 175 (MM), or SPED 147 and SPED 176 (MS); and SPED 177. This course will examine the educational, psychological, and political issues that arise when developing collaborative relationships with families, interdisciplinary
team members, general educators, agency professionals, and students themselves.

Units: 3

SPED 158. Differentiated Instruction in Inclusive Secondary Settings
For the purpose of establishing an inclusive community of teachers and learners, teacher candidates will appreciate their responsibilities related to IDEA/ADA, and design instruction and learning environments that provide differentiation and choice to meet the needs of all learners, with focus on special populations.

Units: 3

SPED 160F. Fieldwork in Special Education
Prerequisite: Admission to special education internship program. Supervised observation and support of teacher interns in the areas of behavior. IEP’s, instruction, assessment, and collaboration. (CSU liability insurance fee, $8)

Units: 1-3
Course Typically Offered: Fall, Spring

SPED 171. Initial Practicum in Mild/Moderate Disabilities
Prerequisites: Successful completion of all coursework in semester 1. Concurrent enrollment in SPED 136. This course is the third of four required supervised field experiences in the program. Teacher candidates will take part in a 16 hour/week, full semester experience in K-12 classroom, RSP or SDC, serving students identified with Mild/Moderate disabilities.

Units: 3
Course Typically Offered: Fall, Spring

SPED 172. Initial Practicum in Moderate/Severe Disabilities
This course is the third of four required supervised field experiences in the program. Teacher candidates will take part in a 16 hour/week, full semester experience in K-12 classroom or SDC, serving students identified with Mild/Moderate disabilities.

Units: 3
Course Typically Offered: Fall, Spring

SPED 175. Final Practicum in Mild/Moderate Disabilities
Prerequisites: Successful completion of all coursework in semesters 1, and 2. Taken concurrently with SPED 146 and EHD 170A. This course is the final of four required supervised field experience in a K-12 classroom, RSP or SDC, serving students identified with Mild/Moderate disabilities. (CSU liability insurance fee, $8)

Units: 6

SPED 176. Final Practicum in Moderate/Severe Disabilities
Prerequisites: Successful completion of all coursework in Semesters 1 and 2. SPED 176 is taken concurrently with SPED 247 and EHD 170A. Final Practicum in Moderate/Severe Disabilities is the final of four required supervised field experiences in the program. Teacher candidates will take part in full semester experience in a K-12 classroom or SDC, serving students identified with Moderate/Severe disabilities. (CSU liability insurance fee, $8)

Units: 6
Course Typically Offered: Fall, Spring

SPED 177. Practicum Seminar in Mild/Moderate and Moderate/Severe Disabilities
Prerequisites: Completion of semesters 1, 2, and 3 coursework; concurrent enrollment in SPED 175, SPED 176. This course seminar is designed to help candidates become reflective practitioners through structured activities to encourage examination of classroom practices and behaviors, goals, outcomes, beliefs, and values. The course will provide a forum for collaborative, critical inquiry based on their student teaching experience.

Units: 2

SPED 179. Differentiated Instruction and Classroom Management
Prerequisites: CI 175, CI 176, EHD 178. If not concurrently enrolled in EHD 170, must make arrangements with the instructor. Through collaboration with others, for the purpose of establishing an inclusive community of learners, teacher candidates will adapt instruction and manage the learning environment to meet the needs of all learners, with focus on students with special needs.

Units: 3
Course Typically Offered: Fall, Spring

SPED 180T. Topics in Special Education
Prerequisites: Permission of instructor. Topics may include special education legislation, parenting, transitional programming, parents as teachers, adolescents and adults with disabilities, current research, child abuse, gifted and talented.

Units: 1-3

SPED 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

SPED 205. Nature and Needs of Individuals with Serious Emotional Disturbance/Behavior Disorders
Addresses the characteristics and needs of the child with emotional behavioral disorders, and service delivery systems and agencies which exist to meet those needs. (2 seminar, 2 lab hours)

Units: 3
SPED 209A. Application of Theory into Practice in Special Education Settings
Supervised field experience with special education students and their families with integration of applied research and theory into practice in special education. Development of induction plan will include the candidate, university supervisor, and employer school district representative/support provider. (Minimum of 45 hours per unit) (Formerly SPED 209) (CSU liability insurance fee, $8)
Units: 3

SPED 209B. Application of Theory into Practice in Special Education Settings
Coordination of ongoing support for professional self-assessment, goal-setting, and other induction plan components of SPED 209A. Support is provided by collaboration between university and school district/agency personnel. (Minimum of 45 hours per unit) (Formerly SPED 209) (CSU liability insurance fee, $8)
Units: 3

SPED 217. Advanced Instruction of Individuals with Serious Emotional Disturbance/Behavior Disorders
Serious Emotional Disturbance/Behavior Disorders (3)
Designed to provide information relevant for planning, organizing, and managing instructional programs for students with emotional and behavioral disorders in a variety of settings. (2 seminar, 2 lab hours)
Units: 3

SPED 219. Effective Communication and Collaborative Partnerships
Prerequisite: concurrent enrollment in SPED 246 and 175 (MM), or SPED 247 and 176 (MS). Examines educational, psychological, and political issues that arise when developing collaborative relationships with families, general educators, and other professionals. Primary focus is on the development of materials, strategies, and skills to work with families, including the culturally and linguistically diverse.
Units: 3, Repeatable up to 6 units

SPED 233. Seminar in the Special Educator as Researcher
Examines the special educator as researcher from several perspectives through reading and analysis of contemporary and emerging research in special education; attending colloquia with special educators who are conducting research; and developing and beginning implementation of pilot research adn project designs.
Units: 3

SPED 235. Seminar in program Development and Induction: Mild/Moderate and Moderate/Severe Disabilities
Development and remediation of social skills and affective abilities. Model programs for normal children adn prescriptive interventions for those with social and personal behavior disorders. (2 seminar, 2 lab hours) (Formerly SPED 213)
Units: 3

SPED 236. Seminar in Advanced and Applied Pedagogy: Mild/Moderate and Moderate/Severe Disabilities
Research and practice in assessment and instruction of communication and social interaction curriculum; advanced behavioral, emotional, and environmental supports for students with moderate to severe disabilities. Includes analysis of behavior, communication systems, adapted technology, and team participation with other specialists.
Units: 3

SPED 238. Clinical Field Experience in Serious Emotional Disturbance/Behavior Disorders
Designed to provide clinical experience in diagnosis and evaluation of the serious emotionally and behaviorally disordered, prescriptive program development, prescriptive instruction, and program management. Experience to include data gathering, program planning and execution, evaluation, consulting, and collaboration. (2 seminar, 2 lab hours)
Units: 3

SPED 243. Applications of Research Methods in Special Education
This course prepares Master's students to develop and apply skills and methods for educational research. Students learn principles and methods of educational research, to plan and conduct a research study, and to interpret, critique, and study published research.
Units: 3

SPED 246. Specialized Academic Instruction for Students with Mild/Moderate Disabilities
Completion of all required courses in semesters 1 & 2. Concurrent enrollment in SPED 175. This course prepares Education Specialist Credential candidates to design specialized academic instruction for students with a variety of mild to moderate disabilities.
Units: 3

SPED 247. Advanced Environmental Design and Instruction for Students with Moderate/Severe Disabilities
Completion of all required courses in semesters 1 & 2. Concurrent enrollment in SPED 176. This course prepares Education Specialist Credential candidates to assess and implement instructional strategies to develop individualized communication systems and related goals. This course also
addresses development of peer relationships and other social supports and revisits understanding challenging behavior.

Units: 3

SPED 250. Foundation Knowledge and Practical Skills for Educating Diverse Learners on the Autism Spectrum
Definitions and characteristics of ASD will be introduced. Emphasis on incidence and prevalence trends, characteristics associated with language/communication, cognition/neurology, social skills and behavior will be addressed. Fieldwork is required to complete assignments.

Units: 3

SPED 251. Systematic Approach to Social Skills Programming for Individuals with ASD
Candidates will demonstrate how to think about research-based interventions addressing the need for social programming for children and adolescents with ASD. Fieldwork is required to complete assignments.

Units: 3

SPED 252. Designing Comprehensive Individualized Autism Planning Systems
Candidates will learn to design comprehensive intervention plans that are responsive to the strengths and needs of individuals of all ages with ASD. Supervised fieldwork is required to complete assignments.

Units: 3

SPED 279. Differentiated Instruction and Classroom Management
Through collaboration and establishment of an inclusive community of learners, candidates will differentiate, manage the environment and utilize research to make informed pedagogical and behavioral decisions to meet the needs of all learners, with focus on students with special needs.

Units: 3

SPED 280T. Advanced Topics in Special Education
Prerequisites: postbaccalaureate standing and permission of instructor. Topics may include special education legislation, parenting, transitional programming, parents as teachers, adolescents and adults with disabilities, current research, child abuse, gifted and talented.

Units: 1-3

SPED 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3

SPED 298. Project
Prerequisites: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220. A project consists of a significant undertaking appropriate to special education such as the development of courses of study, instructional manuals, teachers' guides, interventions programs, and computer software. An approved proposal is required for enrollment. Approved for RP grading.

Units: 4

SPED 298C. Project Continuation
Pre-requisite: Project SPED 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

SPED 299. Thesis
Prerequisites: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220 and completion of an acceptable thesis proposal. Preparation, completion, and submission of an acceptable thesis proposal. Preparation, completion, and submission of an acceptable thesis for the master's degree. See Kremen School of Education and Human Development's graduate programs coordinator for school thesis guidelines. Approved for RP grading.

Units: 4

SPED 299C. Thesis Continuation
Pre-requisite: Thesis SPED 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

CIVIL & GEOMATICS ENGINEERING

Prerequisites: MATH 76 and PHYS 4A. Analysis of force systems, equilibrium problems, section properties; graphic, algebraic, and vector methods of problem solution.

Units: 3

Course Typically Offered: Fall, Spring

CE 29. Engineering Mechanics
Same as CE 29: Prerequisites: MATH 77 (or concurrently); PHYS 4A. Not open to mechanical or civil engineering majors. Study of fundamental principles of statics and dynamics by scalar and vector methods.

Units: 3

CE 85. Introduction to Civil Engineering
The civil engineering profession and its role in society; creative thinking and critical thinking as integral parts of the engineering decision process; engineering methods of analysis;
problem solving; computer drafting; career opportunities. 
(Field trips required)
Units: 3
Course Typically Offered: Fall, Spring

CE 110. Computer Applications in Civil Engineering
Prerequisites: MATH 76 or concurrently. Use and modification of existing programs. Creation of new programs. Use of structured language, spreadsheets, and numerical solutions CAD. Term projects.
Units: 3
Course Typically Offered: Fall, Spring

CE 121. Mechanics of Materials
Prerequisite: CE 20 and MATH 77 with C grade. Applications of principles of mechanics to find stresses and deformations in machine and structural members.
Units: 3
Course Typically Offered: Fall, Spring

CE 121L. Mechanics of Materials Laboratory
Prerequisite: CE 121 or concurrently. Application of principles and methods of testing to verify theory and determine limitations of principles of mechanics of materials. (3 lab hours)
Units: 1
Course Typically Offered: Fall, Spring

CE 123. Soil Engineering
Prerequisites: CE 121, CE 123L concurrently. Physical and mechanical properties of soil, lab and field testing, flow of water in soils including permeability and seepage, stree in soils, soil consolidation and settlement, earth pressure, slope stability, and introduction to foundation design.
Units: 3
Course Typically Offered: Fall, Spring

CE 123L. Soil Engineering Laboratory
Prerequisite: CE 121L or concurrently, CE 123 concurrently. Soil properties and testing, grain size distribution and soil classification, water content, specific gravity, permeability, compression, consolidation, and stress-strain relationships.
Units: 1
Course Typically Offered: Fall, Spring

CE 124. Concrete Laboratory
Prerequisite: CE 121L. Proportioning of concrete mixes; admixtures; workability tests; compressive, flexural, and tensile strength tests; reinforced concrete. (3 lab hours; field trips required)
Units: 1

CE 125. Geotechnical Engineering Design
Prerequisites: CE 123, CE 123L. Theory and design of earth retaining walls, filtration and drawing systems, excavation and supporting systems, soil improvement and ground modification, geosynthetics design and applications, introduction to geoenvironmental engineering.
Units: 3
Course Typically Offered: Fall, Spring

CE 128. Civil Engineering Hydraulics
Prerequisite: CE 20 or concurrently. Fundamentals of civil engineering hydraulics with application to hydraulic structures. (3 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

CE 129. Engineering Hydraulics Lab
Prerequisite: CE 128 or concurrently. Experiments and demonstrations in fluid properties, flow management, pipe flow, open channel flow, pumps, and hydraulic scour. (3 lab hours)
Units: 1
Course Typically Offered: Fall, Spring

CE 130. Theory of Structures
Prerequisite: CE 121. Trusses and frames analyzed by algebraic and graphic procedures; influence lines and live loading analysis; rigid frames analyzed by slope deflection and moment distribution. Introduction to matrix methods. FS
Units: 3
Course Typically Offered: Fall, Spring

CE 131. Intermediate Theory of Structures
Prerequisite: CE 130. Analysis of statically indeterminate beams, trusses, and frames; advanced topics in slope deflection and moment distribution; matrix methods.
Units: 3
Course Typically Offered: Fall, Spring

CE 132. Reinforced Concrete Design
Prerequisite: CE 130. Design of reinforced concrete structural elements using the Ultimate Strength Design Method. Introduction to prestressed concrete. (2 lecture, 3 lab hours; field trips required)
Units: 3
Course Typically Offered: Fall, Spring

CE 133. Design of Steel Structures
Prerequisite: CE 130. Design of steel members and systems for buildings. Design areas include: tension members, compression members, beams, beam-columns, connections and plate girders. (2 lecture, 3 lab hours)
CE 134. Foundation Design  
Prerequisites: CE 123, CE 123L, CE 132 or concurrently. Design and theory of spread and continuous wall, rectangular, cantilever and trapezoidal footings; earth pressures and cantilever as well as gravity retaining walls; pile foundations; pile driving; constructions considerations; load tests; subsurface investigations; case histories; and computer-aided design of foundations. (2 lecture, 3 lab hours)  
Units: 3  
Course Typically Offered: Fall

CE 136. Design of Timber Structures  
Prerequisite: CE 130. Design of timber members and systems for buildings. Design areas include: loads, properties of wood, tension members, beams, columns, beam-columns, connections, diaphragms, shear walls, and glued laminated arches.  
Units: 3  
Course Typically Offered: Fall

CE 137. Seismic Analysis of Building Structures  
Prerequisites: CE 130, ME 112. Effects of earthquakes on structures. Introduction to structural dynamics. Response of structures. Seismic provisions of building codes. Basic concepts in seismic -resistant design. Detailing for seismic-resistant construction. Term project. (Field trips required)  
Units: 3  
Course Typically Offered: Spring

CE 140. Hydrology  
Prerequisites: CE 128 or concurrently. The hydrologic cycle, atmospheric conditions, precipitation, infiltration, ground water, soil moisture, evaporation, runoff, streamflow, hydrographs, flood routing, hydrologic statistical analysis; applications to water resources planning and management. (Field trips required)  
Units: 3  
Course Typically Offered: Spring

CE 141. Water Resources Engineering  
Prerequisites: CE 128, CE 142 (or concurrently). Hydraulic design of water distribution, and sewerage. Computer-assisted pipe network analysis. Pump applications. (2 lecture, 3 lab hours; field trips required)  
Units: 3  
Course Typically Offered: Fall

CE 142. Environmental Engineering  
Prerequisites: CHEM 1A or CHEM 3A or concurrently; CE 128 or concurrently. Introduction to the principles and practices of environmental quality management, including water and air quality, waste management, and the environmental effects of engineered systems.  
Units: 3  
Course Typically Offered: Fall, Spring

CE 142L. Environmental Quality Laboratory  
Prerequisite: CE 142 or concurrently. Study and analysis of physical, chemical, and biological characteristics of air, water, and solid wastes. (Field trips required)  
Units: 1  
Course Typically Offered: Fall, Spring

CE 144. Design of Water Quality Control Processes  
Prerequisites: CE 142 or permission of instructor. Analysis and design of selected physical, chemical, and biological facilities for water purification and wastewater treatment. (2 lecture, 2 lab hours) (Field trips required)  
Units: 3  
Course Typically Offered: Spring

CE 145. Design of Wastewater Management Systems  
Prerequisite: CE 142. Theory and practice of domestic wastewater treatment, including, analysis of wastewater characteristics, flow rates, and constituent loadings; Process analysis and selection; and design of physical unit operations and biological and chemical treatment processes (2 lecture, 2 lab hours) (Field trip required). (Formerly CE 191T)  
Units: 3  
Course Typically Offered: Fall

CE 146. Urban Stormwater Management  
Prerequisites: CE 128, CE 140 (or concurrently). Overview of stormwater management; introduction to urban stormwater drainage system design; stormwater management history and regulations; urban hydrology and hydraulic design; stormwater quality; receiving-water impacts; best management practices; computer assisted analysis and design. (Field trips may be required). (2 lecture, 3 lab hours).  
Units: 3  
Course Typically Offered: Fall

CE 150. Transportation Planning and Design  
Prerequisite: GME 15, upper-division standing. Geometric design of land transportation facilities, primarily road/street systems. Traffic theory and analysis, including statistical analysis of traffic parameters. Freeway and intersection capacity. Simple transportation demand forecast. (2 lecture, 3 lab hours)  
Units: 3  
Course Typically Offered: Fall

CE 151. Pavement Design  
Prerequisite: CE 123 or concurrently. Analysis of pavement structures. Factors affecting pavement performance. Structural
design of flexible and rigid highway and airfield pavements. Pavement rehabilitation and repair.

Units: 3
Course Typically Offered: Fall

CE 152. Trans Engr Mtls

Units: 3

CE 153. Traffic Operations and Control
Prerequisite: CE 150. Transportation studies. Highway traffic characteristics. Highway system traffic analysis. Highway system capacity design. Traffic regulations and control.

Units: 3

CE 155. Transportation Geographic Information Systems (GIS)
Prerequisite: grade of C or Better in CE 150. This course covers basic and advanced concepts of Transportation GIS, introduces basic applications of two ArcGIS extensions (spatial and network analysts), and enables advanced applications of user-defined functions through the usage of the Model Builder and Python scripting.

Units: 3
Course Typically Offered: Fall

CE 161. Construction Engineering I
Prerequisite: CE 130, permission of the instructor. Basics of civil engineering contracting, project funding, cash flow, equipment costs.

Units: 2
Course Typically Offered: Fall, Spring

CE 180A. Project Design
Prerequisites: Completion of Upper Division Writing Requirements, senior standing in civil engineering; permission of instructor. Co-requisites: CE 123/L; CE 124; CE 129; CE 132; CE 142/L; CE 150; or CE 161; Technical Area Courses (9 units). Civil engineering practice, ethical issues, project analysis and design. Student teams complete and orally defend proposal for a design project that includes several civil engineering specialties. Information gathering, time/resource management, and communication skills.

Units: 2
Course Typically Offered: Fall, Spring

CE 180B. Senior Project
Prerequisites: CE 180A; CE 123/L; CE 124; CE 129; CE 132; CE 142/L; CE 150; CE 161; Technical Area Courses (9 units); approved project proposal; permission of instructor. Co-requisites: CE 185; Technical Area Courses (12 units including 9 units Design Courses). Synthesis of previous coursework into a civil engineering design project under the supervision of a faculty member. Group projects except by special permission. (Former. (Formerly CE 180)

Units: 2
Course Typically Offered: Fall, Spring

CE 185. Civil Engineering Practice
Prerequisites: senior standing in civil engineering or permission of instructor. Practice of civil engineering; transition from student to professional engineer; engineering ethics. Business and public policy; administration fundamentals; leadership.

Units: 2
Course Typically Offered: Fall, Spring

CE 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

CE 191T. Topics in Civil Engineering
Prerequisite: permission of instructor. Investigation of selected civil engineering subjects not in current courses.

Units: 1-3

CE 191T. Railroad Engineering: An Introduction
The course serves an introduction to the field of railroad engineering. It begins with an overview of the railway industry. This is followed by study of the railway rolling stock and motive power that provides the tractive effort. Quantitative analysis of train resistance, such as at the wheel/rail interface follows. Then, the system of railroad track components, roadbed considerations, route design, and track maintenance are covered. The class then finishes with a discussion of passenger rail concerns and high-speed railway issues and distinctions. This topic may not be repeated for credit. (Offered Fall 2019 and Spring 2020)

Units: 3

CE 191T. Advanced Hydrologic and Hydraulic Modeling
Prerequisites: CE 128 and CE 140, or permission of the instructor. This course will instruct students in rainfall-runoff hydrograph theory, open channel flow theory, and the use of hydraulic modeling software, primarily HEC-HMS and HEC-RAS, to the end and they will be able to use the software to correctly model complex rainfall-runoff and operate channel flow problems. (Offered Spring 2020)

Units: 3
CE 193I. Internship in Civil Engineering
Prerequisite: permission of adviser. Engineering practice in a consulting, industrial, or government work setting. Each cooperative internship period usually spans a summer-fall or spring-summer interval. This course cannot be used to meet graduation requirements. CR/NC grading only.
Units: 2-4

CE 205. Computing in Engineering Analysis
(ENGR 205 same as CE 205). Prerequisite: graduate status in engineering. Solution of engineering problems using digital computation. Modeling of engineering systems for numerical analysis at the graduate level. Solution of engineering problems using digital computation. Modeling of engineering systems for numerical analysis.
Units: 3

CE 206. Engineering Environmental Impact
Evaluation of environmental impacts due to engineering projects. The incorporation of environmental considerations into engineering design. Alternative solutions to engineering problems. Case histories of selected engineering projects.
Units: 3

CE 210. Research Methods in Civil Engineering
Development of research and skills, understanding, and application of the scientific method in engineering research, and development of individual research topic and proposal. Discussion of new developments in civil engineering science, oral presentations, and submittal of research papers. A passing grade in the Graduate Writing Requirement component of CE 210 is required to receive a passing grade in CE 210.
Units: 3

CE 220. Advanced Foundation Engineering
Prerequisite: graduate standing. Design of cantilevered and anchored sheet-pile walls; axial- and lateral-loaded pile groups; drilled piers; pile driving stresses and wave equation analysis; beams on elastic foundations; footings on expansive and non-uniform soils and on rock; and case histories.
Units: 3

CE 223. Advanced Soil Mechanics
Prerequisites: CE 123, CE 123L, CE 125, and CE 134, or upon instructor's approval. The course covers in-depth discussion of soil aggregates and structures, pore water pressure, unsaturated soil mechanics, permeability and seepage, consolidation, and shear strength. Advanced soil testing (triaxial tests of shear strength and flexible-wall permeability tests) is conducted in class.
Units: 3

CE 225. Numerical Methods in Geotechnical Engineering
Prerequisites: CE 123 and CE 123L, CE 125, and CE 134. Covers introduction to programming, principles of finite element method, and principles of probabilistic methods in geotechnical engineering. Students apply various numerical methods in geotechnical applications (e.g., slope stability, seepage, consolidation) by developing numerical programs and using existing FEM software.
Units: 3

CE 230. Advanced Theory of Structures
Prerequisite: graduate standing in engineering or permission of instructor. Analysis of indeterminate structures by force (flexibility) methods and by displacement (stiffness) methods; Matrix methods suitable for digital computer solutions. Virtual work, real and complementary energy. Classical structural theorems. Introduction to the finite element method.
Units: 3

CE 232. Prestressed Concrete Design
Prerequisite: graduate standing in engineering or permission of instructor. Structural behavior and design of prestressed concrete elements and systems - continuous beams, frames, slabs. Partial prestress. (Field trip[s] required)
Units: 3

CE 233. Advanced Behavior and Design of Steel Structures
Prerequisite: graduate standing in engineering or permission of instructor. Material behavior and design of basic structural units; plate girders; connections; inelastic buckling; composite design; plastic design; P effect. Analysis and design of continuous structures, braced and unbraced frames; stability of steel structures. Critical study of the AISC specifications.
Units: 3

CE 234. Theory of Plates and Shells
Prerequisite: graduate standing in engineering or permission of instructor. Methods of calculating stresses and deformations in plates and shells used in engineering structures. Bending of circular and rectangular plates under various conditions. Membrane and flexural analysis of shells of revolution.
Units: 3

CE 235. Finite Element Analysis
Prerequisite: graduate standing in engineering or permission of instructor. Theoretical and conceptual bases for formulation of finite element representations in solid mechanics. Development of element stiffness matrices for plane stress and plane strain problems, bending of plates and deformation of shells.
Units: 3
CE 236. Reinforced Masonry Theory and Design
Units: 3

CE 237. Dynamics of Structures
Analysis of structural members and systems subject to dynamic loads. Basic theory for single-degree-of-freedom and multi-degree-of-freedom analytical models; free vibration, harmonic and transient excitation, response spectrum, LaGrange's equations, earthquake analysis.
Units: 3

CE 238. Stability of Structures
Elastic buckling of bars; different approaches to stability problems; inelastic buckling of columns and beam columns; columns and beam columns with linear, nonlinear creep; combined torsional and flexural buckling of columns; buckling of plates.
Units: 3

CE 239. Advanced Reinforced Concrete Theory
Background and origin of modern reinforced concrete theory and procedures. Projection to anticipated future changes in design and construction practices. Application and extension of theory to include new and future construction materials such as high performance concrete and fiber reinforced polymers.
Units: 3

CE 240. Engineering Hydrology
Prerequisites: CE 128, CE 140. Analysis of the physical and stochastic processes governing the occurrence and movement of water in its natural environment. Applications to hydraulic engineering practice.
Units: 3

CE 241. Contaminants Fate and Transport Engineering
Introduction to contaminants migration in the environment, risk assessments and engineering remediation methods. Understanding factors controlling multimedia contaminants transport; qualifying transport rate; predicting and reducing resulting concentrations in air, water, and soil. Mathematical knowledge beyond the elementary level is required.
Units: 3

CE 242. Urban & Industrial Water Systems
Prerequisites: MATH 5 or equivalent and CHEM 3A or equivalent. Introduction to urban and industrial water management systems. Basic concepts of water occurrence, use, transport, quality, treatment, and reuse or disposal (3 hours, hybrid of lecture and online delivery).

Units: 3

CE 245. Geoenvironmental Engineering
Prerequisites: BIOL 10, CHEM 3A, CE 123, CE 128, CE 129, CE 142, or upon approval from the instructor. Topics covered in the course include basic soil physics, principles of groundwater flow, mass transport and transfer in soils, non-aqueous phase liquid in soils, geosynthetics, basic soil microbiology and biochemistry, environmental regulations, solid waste landfills, site contamination and treatment techniques.
Units: 3

CE 246A. Advanced Water Quality
Prerequisite: CE 142 or permission of instructor. Theory and practice of physical/chemical processes for controlling water quality, including chemical equilibrium and kinetics; mass transfer mechanisms; physical separation processes; adsorption, exchange, and membrane-based processes; disinfection.
Units: 3

CE 246B. Advanced Water Quality
Prerequisites: CE 142 or permission of instructor. Theory and practice of biological processes for controlling water quality, including suspended growth systems; attached growth systems; ponds; land treatment. Also sludge treatment. Also sludge treatment processes, including biological stabilization thickening, and dewatering; sludge disposal.
Units: 3

CE 247. Solid Wastes Engineering
Planning and design of waste collection and disposal systems. Waste segregation and energy impact related to recovery and recycling practices. Environmental impact and institutional issues related to solid and hazardous waste systems.
Units: 3

CE 250. Transportation System Design
Prerequisite: CE 150 or permission of instructor. This course covers state-of-practice theories and models of travel demand; particularly, 4-step model. Topics include understanding, modeling and simulation of travel behavior; and evaluation of transportation system designs. Extensive hands-on activities offering students advanced knowledge, skills and experiences working with different state-of-the-art data sources (ex. NHTS), mathematical models, and computer software (Access, R, and VISUM).
Units: 3

CE 251. Advanced Boundary Law
Prerequisite: GME 151 or equivalent. Land and water boundary legal issues, both historical and new. Case investigations.
CE 261. Geoprocessing
Prerequisite: GME 173 or equivalent. Integration of computer technologies for gathering, analyzing, and displaying data associated with the earth's spatial features. Engineering design problems dependent on competing factors.
Units: 3

CE 271. Geodetic Systems Optimization
Prerequisite: GME 108 or equivalent. National geodetic networks; planimetric and vertical control systems; geodetic control densification; network optimization criteria and methodology.
Units: 3

CE 275. Satellite Surveying
Prerequisite: graduate standing. Discussion of GPS orbital theory, data collection and processing algorithms, network adjustments, project design and optimization techniques. Review of current research trends and applications. (Field trips required)
Units: 3

CE 276. GPS Theory and Application
Units: 3

CE 280. Geomatics Engineering Seminar
Prerequisite: graduate standing. Current California State University, Fresno surveying engineering research presented and discussed by faculty and graduate students. Oral presentation and written report documenting ongoing research activities required.
Units: 1, Repeatable up to 3 units

CE 283. Digital Remote Sensing
Prerequisite: GME 140 or equivalent. Quantitative approach in remote sensing; digital image characteristics, error correction, registration; geometric and radiometric image enhancement; image classification; system design; remote sensing and GIS.
Units: 3

CE 285. Advanced Analytical Photogrammetry
Prerequisite: GME 125 or equivalent. Mathematical models in photogrammetry; bundle block adjustment, self-calibration; close-range photogrammetry; real-time photogrammetry and data snooping. System design; hardware and software considerations in photogrammetry.
Units: 3

CE 286. Geographic Information Systems Design
Prerequisite: GME 173 or equivalent. Data structures and algorithms, databases for GIS, error modeling and data uncertainty, visualization, data exchange and standards, the multipurpose cadaster, advanced analysis techniques.
Units: 3

CE 290. Independent Study
Prerequisite: graduate status in engineering. See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

CE 291T. Topics in Engineering
Prerequisite: permission of instructor. Investigation of selected engineering topics. May be offered with a lab. (Formerly ENGR 291T)
Units: 1-3

CE 291T. Railroad Engineering: An Introduction
The course serves an introduction to the field of railroad engineering. It begins with an overview of the railway industry. This is followed by study of the railway rolling stock and motive power that provides the tractive effort. Quantitative analysis of train resistance, such as at the wheel/rail interface follows. Then, the system of railroad track components, roadbed considerations, route design, and track maintenance are covered. The class then finishes with a discussion of passenger rail concerns and high-speed railway issues and distinctions. This topic may not be repeated for credit. (Offered Fall 2019 and Spring 2020)
Units: 3

CE 291T. Advanced Hydrologic and Hydraulic Modeling
This course will instruct students in rainfall-runoff hydrograph theory, open channel flow theory, and the use of hydraulic modeling software, primarily HEC-HMS and HEC-RAS, to the end and they will be able to use the software to correctly model complex rainfall-runoff and operate channel flow problems. (Offered Spring 2020)
Units: 3

CE 291T. Advanced Pavement Design
This course will offer methods of pavement structure response analysis under real traffic load, traditional AASHTO pavement design procedure, mechanisms of pavement distresses, and the asphalt and concrete performance models in Mechanistic Empirical Pavement Design Guide (MEPDG). Advanced materials characterization related to MEPDG design procedure will be offered as well. (Offered Spring 2020)
Units: 3
CE 291T. Reliability Methods in Engineering Design
This course will offer introduction to applied probability theory. Bayesian analysis of model uncertainties, formulation of structural reliability for components and systems, approximate solutions by second-moments, first- and second-order reliability methods (FORM and SORM), the response surface method, simulation methods, risk-based optimal design and probabilistic design. (Offered Spring 2020)
Units: 3

CE 298. Project
Prerequisite: graduate status in engineering. Independent investigation of advanced character such as analysis and/or design of special engineering systems or projects; critical review of state of the art of special topics, as the culminating requirement for the master's degree. Abstract required. Approved for RP grading.
Units: 3

CE 298C. Project Continuation
Pre-requisite: Project CE 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

CE 299. Thesis
Prerequisite: See -LINK-]. Preparation, completion, and submission of an acceptable thesis for master's degree. Approved for SP grading.
Units: 2-6

CE 299C. Thesis Continuation
Pre-requisite: Thesis CE 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

GME 1. Introduction to Geomatics Engineering
An introduction to geomatics engineering philosophical thought; geomatics engineering profession and career opportunities; professional ethics and safety; creative and critical thinking applied to the geomatics engineering decision-making process. (Formerly SE 1)
Units: 1
Course Typically Offered: Fall

GME 5. Critical Reasoning
Units: 3
Course Typically Offered: Fall, Spring

GME 15. Engineering Surveying
Prerequisite: MATH 5. Principles of surveying measurements for distance, direction, elevation, topographic and planimetric mapping, horizontal curves, vertical curves, earthwork and engineering applications. (Formerly SE 15)
Units: 2
Course Typically Offered: Fall, Spring

GME 15L. Engineering Surveying Laboratory
Prerequisite: GME 15 or concurrently. Field practice in geomatics measurement, construction stakeout, and curve alignment problems. (3 lab hours; field trips required)
(Formerly S E 15L)
Units: 1
Course Typically Offered: Fall, Spring

GME 16. Municipal Surveying
Prerequisites: GME 15. Instrumentation; automated electronic survey data collection; land survey; introduction to photogrammetry, GPS, GIS, and control surveys. Astronomy for azimuth applications.
Units: 2
Course Typically Offered: Spring

GME 16L. Municipal Surveying Laboratory
Prerequisite: GME 16 or concurrently. Field and office practice in instrumentation: Automated electronic survey data collection; land survey; photogrammetry; GPS, GIS, and control surveys. Astronomy for azimuth applications. (3 lab hours; field trips required)
Units: 1
Course Typically Offered: Spring

GME 23L. Optics and Waves
Visual optics, prisms, lenses, and collimated light, electromagnetic spectrum and waves, wave properties and atmospheric interactions, optical and electromagnetic imaging systems. GPS, GIS, remote sensing, photogrammetric and EDM applications. (3 lab hours; field trips required)
Units: 1
Course Typically Offered: Fall

GME 34. Adjustment Computations
Prerequisites: GME 15, GME 61, MATH 76. Error theory, adjustment of simple survey networks, and matrix methods; digital computer solutions of geomatics computation and adjustment problems. (Formerly SE 34)
Units: 3
Course Typically Offered: Spring

GME 40. Route and Construction Surveying
Prerequisites: GME 15, GME 15L or permission of instructor. Computations and theory covering surveys for highway, irrigation, rail, pipeline, and other transportation alignment projects. Includes computer solutions and applications. (2 lecture, 3 lab hours; field trips required) (Formerly SE 40)
Units: 3

Course Typically Offered: Fall

GME 50. Land Surveying
Prerequisite: GME 15. The United States Public Land Survey System with special emphasis on California; introduction to the California Land Surveyors Act, Certified, A.L.T.A. and mortgage surveys; sectionalized land subdivision, corner restoration, resurveys, evidence, and descriptions. (Field trips required) (Formerly SE 50)
Units: 3

Course Typically Offered: Spring

GME 61. Microcomputers in Engineering
Prerequisite: GME 15 or concurrently. Microcomputer operating systems; introduction to high level computer languages, file processing, program documentation, testing, and debugging. (Formerly S E 61)
Units: 3

Course Typically Offered: Fall

GME 66. Computer-Aided Mapping
Preparing transportation alignment, topographic, property boundary, environmental, cross section, structural and GIS maps and plans. Civil and Geomatics Engineering and Construction applications. Includes comprehensive computer mapping design experience.
Units: 3

Course Typically Offered: Fall, Spring

GME 73. Geomatics
Introduction to Geographic and Land Information Systems; software and hardware issues; practical exercises. (Formerly S E 73)
Units: 3

Course Typically Offered: Spring

GME 102. Geodetic Surveying
Prerequisites: GME 16, GME 34. Horizontal and vertical geodetic networks for deformation, industrial tooling and local area applications; theory and application of State Plane Coordinate systems. (2 lecture, 3 lab hours; field trips required) (Formerly SE 101)
Units: 3

Course Typically Offered: Spring

GME 108. Geodesy
Prerequisites: MATH 77, PHYS 4A, PHYS 4AL, GME 34 or concurrently. Size and shape of the earth; three-dimensional coordinate systems; computations on the spheroid; reduction to plane coordinates; introduction to differential equations, gravity modeling and gravity measurements. (Formerly SE 108)
Units: 3

Course Typically Offered: Spring

GME 114. GPS Navigation
Prerequisite: permission of instructor. Theory and concepts of navigation systems emphasizing real-time GPS. Design of air, sea, and land navigation applications, including automatic vehicle location and navigation (AVLN). (2 lecture, 3 lab hours; field trips required) (Formerly SE 114)
Units: 3

Course Typically Offered: Fall

GME 123. Stereo-Photogrammetry
Prerequisites: GME 15, GME 34 or concurrently. Imaging systems; image quality. Theory of stereo-photogrammetry; orientation of stereo-model. Design and operating principles of stereoplotters. Photogrammetric mapping; orthophoto mapping. Project planning. (2 lecture, 3 lab hours; field trips required) (Formerly SE 123)
Units: 3

Course Typically Offered: Fall

GME 125. Analytical Photogrammetry
Prerequisites: GME 123, GME 135. Introduction to analytical photogrammetry; strip and block aerial triangulation. Design and operating principles of analytical plotters. Introduction to soft-copy photogrammetry. (2 lecture, 3 lab hours; field trips required) (Formerly SE 125)
Units: 3

Course Typically Offered: Fall

GME 126. Digital Mapping
Prerequisites: GME 123, GME 173 or concurrently. Design of data input, editing, display and processing mechanisms for digital mapping applications; hardware considerations and software design for DTM applications. (2 lecture, 3 lab hours; field trips required)
Units: 3

Course Typically Offered: Spring

GME 135. Advanced Adjustment Computations
Prerequisites: GME 34, MATH 77. Statistics, propagation of errors, advanced theory of least squares optimization algorithms. Computer programming for complex surveying
and photogrammetry adjustment applications. Project design.  
(Formerly S E 135)

Units: 3  
Course Typically Offered: Fall

GME 143. Satellite Geodesy  
Prerequisites: GME 102, GME 108, GME 135 or concurrently.  
Motion of a satellite, orbit geometry and perturbations;  
time measuring systems; global geodesy model; reduction  
and adjustment of GPS and other satellite observation  
data; differential equations of orbit relaxation; GPS network  
optimization; data transformation. (Field trips required)  
(Formerly SE 143)

Units: 3  
Course Typically Offered: Fall

GME 145. Geopositioning  
Prerequisites: GME 102, GME 108, GME 135. Design  
of planning, data collection, data processing and network  
adjustment applications; kinematic and real-time GPS  
apPLICATIONS; case studies. (Field trips required)

Units: 3  
Course Typically Offered: Spring

GME 151. Boundary Control and Legal Principles  
Prerequisite: GME 50 or permission of instructor. Legal  
principles that control the boundary location of real property.  
(Formerly S E 151)

Units: 3  
Course Typically Offered: Fall

GME 152. Real Property Descriptions  
Prerequisite: GME 151 or permission of instructor. Theory and  
practice of real property descriptions and recording systems;  
metes and bounds, United States Public Land Survey System,  
lot and block and other styles investigated; practical exercises  
and case studies. (Field trips required) (Formerly SE 153)

Units: 3  
Course Typically Offered: Fall

GME 153. Boundary Survey Design  
Prerequisite: GME 151 or permission of instructor. Design  
of evidence gathering, resurvey, retracement, and analysis  
techniques for complex United States Public Land Survey  
System, metes and bounds, riparian, mineral, land grant  
and fraudulent surveys; case studies. (Field trips required)  
(Formerly SE 153)

Units: 3  
Course Typically Offered: Spring

GME 159. Subdivision Design  
Prerequisites: GME 40, GME 151. Subdivision map act, local  
subdivision regulations, title search, zoning study. Tentative  
and final subdivision layout, map drafting, computerized  
subdivision design, and drafting; environmental impact study.  
Field trips required. (Formerly S E 159)

Units: 3  
Course Typically Offered: Spring

GME 161. Data Interface Design  
Prerequisites: GME 16, GME 135. Development and design of  
data collector software; file system generation, manipulation  
and transfer; microcomputer interface to data collector,  
electronic total station, digitizer, stereo/mono comparator and  
stereo-plotters. (Field trips required) (Formerly SE 161).

Units: 3

GME 173. Introduction to GIS  
Prerequisites: GME 15 and GME 66 or permission of  
instructor. Data quality and accuracy, privacy, ethics,  
institutional, governmental and technological issues associated  
with GIS; hardware and software considerations for  
geodetically controlled cadastral, resource and environmental  
GIS applications; existing system case studies. (Field trips  
required) (Formerly SE 173)

Units: 3

GME 174. GIS Applications  
Prerequisite: GME 173. Use of available GIS. Applications  
software; spatial analysis, simulation modeling and system  
evaluation; practical applications to specific GIS scenarios;  
creation, manipulations, maintenance and analysis of geodetic,  
cadastral, administrative resource and environmental overlays.  
Field trips required. (Formerly S E 174)

Units: 3

GME 175. GIS Design  
Prerequisite: GME 173. Application of data quality, accuracy,  
ethics and liability issues to the design of integrated  
Geographic Information Systems; integrated data structure,  
algorithm, and database considerations; major design team GIS  
development project required. Field trips required. (Formerly  
S E 175)

Units: 3

GME 180. Senior Project  
Prerequisites: GME 181 or concurrently. UDWE or a "W"  
course or concurrently. Study of a problem under supervision  
of a faculty member; final typewritten report required.  
Individual project except by special permission. GME 180 and  
GME 181 satisfy the senior major requirement for the B.S. in  
Geomatics Engineering. (Field trips required) (Formerly SE  
181)

Units: 2
GME 181. Project Design
Prerequisite: GME 108, GME 123, GME 135, GME 151, GME 173. Design of control, boundary location, and photogrammetric systems. Evaluation of design requirements, economic, and social considerations. Case Studies. Student presentations. GME 180 and GME 181 satisfy the senior major requirement for the B.S. in Geomatics Engineering. (Field trips required) (Formerly SE 181)
Units: 3

GME 190. Independent Study
See Academic Placement - [LINK-]. Approved for SP grading. (Formerly SE 190)
Units: 1-3

GME 191T. Geospatial Analysis and Remote Sensing
This covers fundamentals of remote sensing, photogrammetry and LiDAR. Analysis of remotely sensed data, remote sensing data processing, image classification, normalized difference vegetation index, image registration, gridding, etc. will be covered in the first half of the semester. Engineering application using those information and techniques will be sought via class and a term-project. (Offered Spring 2020)
Units: 3

GME 193I. Internship in Geomatics Engineering
Prerequisite: permission of adviser. Engineering practice in a consulting, industrial, professional, or government work setting. A report will be required of the student at the termination of each implemented experience. This course cannot be used to meet graduation requirements CR/NC grading only. (Formerly SE 193)
Units: 2-4

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CONSTRUCTION MANAGEMENT

CM 1. Construction Management Orientation
An overview of construction management education and profession. Introduction to the construction industry, career opportunities, leadership/personality assessment, sustainability, ethics, safety, community service, and university experience. (1 lecture, 2 lab hours)
Units: 2

CM 5. Analysis of Construction Materials
Analyzing quantities of basic construction materials: concrete, masonry, metals, woods, thermal materials, finishes, equipment, and specialties. (1 lecture, 2 lab hours; field trips)
Units: 2

CM 7S. Construction Materials & Basic Building Systems
Prerequisite or corequisite: CM 15 or OSHA 30 construction safety certification. Introduction to basic construction materials and exploration of theoretic principles relating to the various building systems. Course work requires 20 hours of service learning in construction. Lectures, lab, field trips, and guest speakers. (2 Lec, 3 Lab hours)
Units: 3

CM 15. Construction Management Software and Safety
Introduction to construction industry software and construction safety standards. Basic instruction in estimating, scheduling, design, and project management software. Includes 30 hours of OSHA related construction safety regulations and practices. (4 lab hours)
Units: 2

CM 18. Construction Graphics
Co-requisite: CM 7S. Introduction to fundamentals and techniques to communicate graphically in the construction industry. Plan reading, architectural drawing, sketching, drafting methods, computer aided design, and building information modeling. Survey of architectural form and function. Study includes application of building codes and regulations. (2 Lec, 3 Lab hours) (formerly CM 4)
Units: 3

CM 20. Construction Documents
Prerequisite CM 18; CM 5 or Math 75 (may be taken concurrently). Methods for developing and applying construction contracts and specifications, including bidding requirements, bonds and insurance, certificates, agenda, change orders, general and supplementary conditions, and CSI specifications; Performing basic quantity take offs for a given set of construction documents. (2 lecture, 2 lab hours)
Units: 3

CM 31. Architectural Graphics
Prerequisite: CM 5. Introduction to basic techniques and media used in architectural graphic communication including: perspective techniques, sciagraphy, models, and photography;
emphasize on various ways of making drawn representations of architectural design proposals. (6 lab hours)

Units: 3
Course Typically Offered: Fall

CM 32. Architectural Design
Introduction to architectural design theory; analysis of architectural design problems, assessment of human needs, establishment of architectural design criteria and development of architectural design concept. (6 lab hours)

Units: 3
Course Typically Offered: Fall

CM 42. Architectural Drawing
Architectural drafting techniques and standards progressing from fundamentals to details in the area of light construction design through the use of sketching, drafting methods and computer aided design. Study includes the application of building codes and regulations. (6 lab hours)

Units: 3

CM 43. Computer-Aided Construction Detailing
Prerequisite: CM 42. Application of computers to planning and details for wood, concrete, masonry, and steel structures. (6 lab hours) (Formerly CONST 142)

Units: 3
Course Typically Offered: Fall, Spring

CM 50. Basic Building Systems
Prerequisite: CM 5, CM 42. Exploration of theoretic principles relating to the various building systems. (2 lecture, 2 lab hours; field trips)

Units: 3
Course Typically Offered: Fall, Spring

CM 98. Construction Management Competition
Prerequisite: permission of instructor. Preparation for construction management related competitions. (2-6 lab hours)

Units: 1-3
Course Typically Offered: Fall, Spring

CM 105. Construction Structures
Prerequisites: CM 20; PHYS 2A or PHYS 4A; MATH 75; all with "C" or better. Properties, strength, and functional applications of basic construction materials: woods, metals, and concrete. Recent developments in new materials and applications. (2 lecture, 2 lab hours; field trips)

Units: 3

Course Typically Offered: Fall, Spring

CM 107. Advanced Construction Structures
Prerequisite: CE 20 or CM 105. Analysis of construction materials in its application to different structural systems. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

CM 107L. Advanced Construction Structures Lab
Prerequisite or corequisite: CM 107. Application of principles and methods of testing to verify theory and determine limitations of principles of construction materials.

Units: 1

CM 110. Estimating and Bidding
Prerequisite: CM 20. Basic method used to evaluate, fix cost, calculate worth, make accurate quantity take-offs and labor time estimates; preparing bids for prospective buyers. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

CM 116. Construction Scheduling
Corequisite or Prerequisite: CM 110. Critical path method; planning, scheduling, and control of construction projects including logic, time assignment and computation, analysis, replanning, diagramming practices, monitoring and updating, computer utilization; role of management. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

CM 122. Construction Laws
Prerequisite: CM 20. Orientation to the rules and regulations governing construction industry practices and activities including contractors license law, state lien laws, health and safety regulations, personnel relations and supervision, workers compensation, employment insurance and taxes.

Units: 3

CM 124. Construction Labor Law
Prerequisites: CM 122. Study of federal and state labor-oriented regulations as applied to construction industry practices. Interaction between technical and legal aspects of collective bargaining, pre-hire agreements, hiring hall referrals, open shop construction, work force management, labor standards, employment discrimination, strikes, and picketing.

Units: 3
Course Typically Offered: Fall

**CM 127. Construction Soils and Foundation**
Not open to civil engineering majors. Prerequisite: CM 107. Physical and mechanical properties of soil, construction applications of soils engineering design, field control during construction, field problems and remedial measures, and case histories.

Units: 3

**CM 131. Advanced Architectural Graphics**
Prerequisite: CM 7S and upper division standing. Architectural graphic techniques as tools of three dimensional analysis and representation in the design process. (6 lab hours)

Units: 3

Course Typically Offered: Spring

**CM 132. Advanced Architectural Design**
Prerequisite: CM 131 and upper division standing. Development of understanding of the forces affecting the man-made environment through function identification, systems analysis, and development of architectural design solutions to problems at an intermediate level of complexity. (6 lab hours)

Units: 3

**CM 134. Architectural Design Problems**
Prerequisites: CM 116, CM 132. Conceptual planning and design of a large scale architectural project responding to the built environment. Employing team research and analysis leading to the design and presentation on individual solutions with graphic and three-dimensional techniques. (6 lab hours)

Units: 3

**CM 140. Building Mechanical, Electrical, and Plumbing**
Prerequisites: CM 7S and CM 20. Survey of building mechanical, electrical, and plumbing systems. Orientation to the design fundamentals and construction of various sustainable and environmentally friendly systems and equipment. Lectures, field trips, and guest speakers. (2 Lec, 3 Lab hours)

Units: 3

**CM 144. Construction Site Planning and Development**
Prerequisite: CM 116; senior standing. Analysis of land development; site investigation, grading, street piping systems, and landscaping. (2 lecture, 2 lab hours; field trips)

Units: 3

Course Typically Offered: Fall, Spring

**CM 150. Building Construction**
Prerequisites: CM 116; CE 121. Problems and methods of solutions in the construction of buildings; site; excavations, foundations, framework, timber, reinforced concrete, structural steel, masonry construction and related elements. Satisfies the senior major requirement for the B.S. in Construction Management. (2 lecture, 2 lab hours; field trips)

Units: 3

**CM 151. Heavy Civil Construction**
Prerequisites: senior standing or permission of instructor; CM 116; CE 121, CE 127. Problems and methods of solutions in heavy construction from earth moving, paving, compacting to tunneling; administrative procedures, quantity surveying, estimating, scheduling, and bidding. (2 lecture, 2 lab hours, field trips)

Units: 3

Course Typically Offered: Fall

**CM 160. Plumbing Systems**
Prerequisite: CM 20; PHYS 2B or MATH 76, all with grade of C or better. Construction application of water systems, plumbing and storm drainage, and sewage disposal systems. (1 lecture, 2 lab hours; field trips) (Formerly CM 166)

Units: 2

**CM 162. Mechanical Systems**
Prerequisites: CM 160 with grade of C or better. Mechanical systems for heating, ventilating, air conditioning, plumbing, storm drainage, and sewage disposal systems in commercial, industrial, residential construction; heat loss and gain, solar systems, mechanical system sizing, and life cycle cost analysis. Lectures, field trips, and guest speakers. (1 lecture, 2 lab hours; field trips)

Units: 2

Course Typically Offered: Fall

**CM 164. Building Electrical Systems**
Prerequisites: CM 20; PHYS 2B or MATH 76 all passed with grade of C or better. Electrical systems for power, light, heat, signals, and communications in commercial, industrial, and residential buildings. (1 lecture, 2 lab hours; field trips)

Units: 2

Course Typically Offered: Spring

**CM 170. Construction Project Controls**
Prerequisite: CM 116. Development and application of contraction project control systems; principles of construction project and business management; methods of cost, schedule, quality, safety, and change management; survey of construction accounting and finance. (2 Lec, 2 Lab hours)

Units: 3

Course Typically Offered: Fall

**CM 177. Sustainable Construction**
Prerequisite: CM 7S. To provide an overview of emerging delivery systems for high performance green buildings and the basis on which their sustainability can be evaluated. Green
Building rating systems will be discussed. Lectures, lab, field trips, and guest speakers. (2 Lec, 2 Lab hours)

Units: 3
Course Typically Offered: Fall

CM 180A. Construction Management Capstone 1
Prerequisites: CM 116, CM 122, Senior Standing. Corequisites or Prerequisites: CM 107, CM 193, MGT 104. Prepare conceptual design, implementation of sustainable materials, assess construction components and utilize various planning approaches for a building project. Lab, field trips and guest speakers (3 lab hours)

Units: 1
Course Typically Offered: Fall, Spring

CM 180B. Construction Management Capstone 2
Prerequisite: CM 170 and CM 180AS. The construction manager's relation to internal organization, owner, architect, engineer, public, press, legal aid, unions, trades, equipment, utilities, insurance, finances, government, and others. Lectures, lab, field trips, and guest speakers. (Formerly CONST 114) (2 Lec, 3 Lab hours)

Units: 3
Course Typically Offered: Fall, Spring

CM 181. Construction Management Senior Seminar
Prerequisite: Senior Standing. Presentation and discussion of current construction management practices. Standards of professionalism, leadership, and ethics. Professional practice issues and professional licensure.

Units: 1

CM 190. Independent Study
See Academic Placement -- [-LINK-]. Approved for SP grading. (Course fee variable)

Units: 1-3
Course Typically Offered: Fall, Spring

CM 191T. Technical Topics in Construction
Prerequisite: permission of instructor. Investigation and analysis of selected subjects in construction. (2-6 lab hours)

Units: 1-3

CM 191T. History of Architecture 2
This course explores world architecture from the 15th century through the 20th century. The course approaches architecture history and design from a number of different interpretive perspectives, including the: formal, typological, and experiential, from the perspectives of architect and patron. The course help students understand the various cultural, ideological, and aesthetic ideas that have shaped buildings through history. (3 lecture hours) (Offered Spring 2020)

Units: 3, Repeatable up to 6 units

CM 193I. Internship/Work Experience
Open only to construction majors. Prerequisites: sophomore standing and permission of instructor. Supervised work experience in construction related industries. Periodic consultations with instructor.

Units: 1, Repeatable up to 3 units
Course Typically Offered: Fall, Spring

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COMPUTER SCIENCE

CSCI 1. Critical Thinking and Computer Science
Prerequisite: intermediate algebra. Overview of the field of computer science with an emphasis on critical thinking skills. Problem-solving strategies, algorithm design, and data abstraction. Introduction to hardware, theoretical limitations of computers, and issues arising from the growing role of computers in society. G.E. Foundation A3.

Units: 3
Course Typically Offered: Fall, SpringGE Area: A3

CSCI 5. Computer and Applications
An introduction to the computer: tools, applications, and graphics. Overview of the components of computer systems; discussion on software systems, electronic mail, influence of computers on society and the future of computing; extensive hands-on experience with application tools and programming. PC (Windows) environment. CR/NC grading only. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

CSCI 30. Introduction to the Internet
Topics include email, web browsers, searching, evaluation of web resources, HTML, web-page design, encryption, basic network communication. Special emphasis on the underlying technologies. (2 lecture (1 traditional/1 on-line), 2 lab hours)

Units: 3

CSCI 40. Introduction to Programming and Problem Solving
Prerequisites: Math 75 (may be taken concurrently) OR Math 75A (may be taken concurrently) OR permission from instructor. Introduction to problem solving, algorithm development, procedural and data abstraction; program design, coding, debugging, testing and documentation; a high-level programming language. (3 lecture, 2 lab hours)

Units: 4
Course Typically Offered: Fall, Spring

CSCI 41. Introduction to Data Structures
Prerequisite: CSCI 40 or ECE 71. Programming methodology, program correctness. Review of data types. Data structures: linear and nonlinear structures, files. Implementation of data
structures. Recursion. Searching and sorting. (3 lecture, 2 lab hours)

Units: 4
Course Typically Offered: Fall, Spring

CSCI 60. Foundations of Computer Science
Prerequisites: CSCI 40 (may be taken concurrently). Abstraction, iteration, induction, recursion, complexity of programs, data models, and logic. (3 lecture 2 lab hours)

Units: 4
Course Typically Offered: Fall, Spring

CSCI 100. Introduction to Computational Science
Prerequisites: G.E. Foundation and Breadth Area B. Fundamental concepts of computational science, computational modeling, computer simulations, and scientific applications. Topics include system-dynamics models, cellular-automaton simulations, computational and modeling tools, scientific visualization, high-performance computing. G.E. Integration IB.

Units: 3
GE Area: IB

CSCI 101. Computational Foundations for Bioinformatics
Prerequisites: CSCI 1, BIOL 102. Computational approaches to problems in molecular biology. Algorithms, heuristics, strings, graphs. Sequence comparison, multiple alignment. Selected topics such as scripting, visual programming, laboratory workflow, databases, and queries. (2 lecture, 2 lab hours). (Formerly computer applications in the sciences).

Units: 3

CSCI 112. Introduction to Computer Systems
Prerequisite: CSCI 41, CSCI 60. Computer arithmetic. Von Neumann architecture. Instruction sets, data types, formats, addressing. Register and ALU organization. Memory hierarchy. I/O Bus organization. Study of one or more assembly languages. Basics of implementation of higher-level languages. (3 lecture, 2 lab hours)

Units: 4
Course Typically Offered: Spring

CSCI 113. Introduction to Computer Organization
Prerequisite: CSCI 112. Fundamental issues of computer design at register-transfer level. Logical design of basic combinational and sequential modules. Organization and design of major functional blocks: ALU, CPU, memory, cache, input/output, hard-wired and microprogrammed control. Simulation of computer organization. Introduction to high performance superscalar computer organization. (3 lecture, 2 lab hours)

Units: 4

CSCI 115. Algorithms and Data Structures
Prerequisites: CSCI 41, CSCI 60, MATH 75. Review of basic data structures. Graph, search paths, and spanning trees. Algorithm design and analysis of sorting, merging, and searching. Memory management, hashing, dynamic storage allocation. Integration of data structures into system design. (3 lecture 2 lab hours)

Units: 4
Course Typically Offered: Spring

CSCI 117. Structures of Programming Languages
Prerequisites: CSCI 41, and CSCI 60. General concepts and paradigms of programming languages; scope and binding rules, applications and implementations of language concepts. Languages selected from: ADA, ICON, Miranda, ML, MODULA 2, OCCAM 2, PROLOG, LISP, Scheme, Smalltalk. (3 lecture, 2 lab hours)

Units: 4
Course Typically Offered: Fall

CSCI 119. Introduction to Finite Automata
Prerequisites: CSCI 41, CSCI 60. Strings, languages, and fundamental proof techniques. Regular expression, regular grammar, regular languages, finite automata, their interrelationship, and their properties. Introduction to context-free languages. (3 lecture 2 lab hours)

Units: 4
Course Typically Offered: Fall

CSCI 124. Introduction to File Processing
Prerequisite: CSCI 115. Definition of file components, access methods, and file operations. Algorithms for efficient implementation of data structures; characteristics of bulk storage media for mainframe and microcomputers. Introduction to database management systems.

Units: 3

CSCI 126. Database Systems
Prerequisites: CSCI 115 (can be taken concurrently). Database concepts; hierarchical and relational network models; object-oriented data models. Data normalization, data description languages, data manipulation languages, and query design.

Units: 3

CSCI 130. Web Programming
Prerequisites: CSCI 115. Programming for the World Wide Web. Web servers and clients, Internet and Web protocols, and mark-up languages. Client side scripting, including both gateway and filter-based approaches. (2 lecture, 2 lab hours). (Formerly CSCI 191T).

Units: 3
CSCI 134. Compiler Design
Prerequisites: CSCI 112, CSCI 115, CSCI 119. Syntax and semantics of programming languages. Lexical analysis, parsing techniques, parser generator, SLR and LALR parsing. Introduction to symbol table organization and semantic routines. Compiler generators.
Units: 3

CSCI 144. Introduction to Operating Systems
Prerequisites: CSCI 41, and CSCI 112 or ECE 118. Operating system history and services. File systems. Memory management. Process management - concurrent processes, communication, semaphores, monitors, deadlocks. Resource management - processor and disk scheduling. Security and protection mechanisms. (3 lecture hours)
Units: 3

CSCI 146. Systems Architecture
Prerequisites: CSCI 113, CSCI 144. An in-depth analysis of one or more operating systems -- system data structures, hardware architecture, shell and kernel functions, I/O routines, interrupt handling. Other topics may include parallel hardware architectures, performance analysis.
Units: 3

CSCI 148. Systems Programming
Prerequisites: CSCI 113, CSCI 144. Topics include implementation of operating system components and modification of existing systems. Device drivers, memory management, communication networks, and file systems will be examined. Projects will be emphasized.
Units: 3

CSCI 150. Introduction to Software Engineering
Prerequisite: CSCI 41. History, goals, and motivation of software engineering. Study and use of software engineering methods. Requirements, specification, design, implementation, testing, verification, and maintenance of large software systems. Team programming. (2 lecture, 3 lab hours)
Units: 3

CSCI 152. Software Engineering
Prerequisite: CSCI 150. In-depth examination of techniques for specification, design, implementation, testing, and verification of software. Human-computer interfaces. Formal methods of software development. Use of software engineering tools for the development of substantial software projects. (2 lecture, 2 lab hours)
Units: 3

CSCI 154. Simulation
Prerequisites: CSCI 41, CSCI 60; MATH 75. Simulation as a tool for the study of complex systems in computer science, statistics and operations research. Generating random variables. Review of principles behind and examples of simulation languages.
Units: 3

CSCI 156. Internetworking Systems and Protocols
Prerequisite: CSCI 144 or permission of instructor. Review of underlying network technologies. Application-level interconnections, network architectures, addressing, mapping abstract addresses to physical addresses, routing datagrams, error and control messages, protocol layering, gateways, subnets. Client-server interactions. Upper layers of protocol stacks. (2 lecture, 2 lab hours)
Units: 3

CSCI 164. Artificial Intelligence Programming
Units: 3

CSCI 166. Principles of Artificial Intelligence
Prerequisite: CSCI 164. Analysis of knowledge-based and neural models, including self-organization, sequential learning models, neurally inspired models of reasoning and perception. Integration of different paradigms.
Units: 3

CSCI 172. Computer Graphics
Prerequisites: MATH 76, CSCI 41, and (CSCI 112 or ECE 118). Hardware devices, raster graphics, device in dependence, graphic data structure and representations, interactive techniques, and algorithms for the display of two- and three-dimensional objects, graphic transformation, graphics standards, modeling, animation, VRML, and scientific visualization. (3 lecture hours)
Units: 3

CSCI 173. Advanced Computer Graphics
Prerequisite: CSCI 172. Visible surface algorithms, lighting and shading, textures, curves and surfaces, computer-aided design, advanced modeling techniques, solid modeling, advanced raster graphics architecture, advanced geometric and raster algorithms, user interface, ray tracing, animation techniques, and fractals. (2 lecture, 2 lab hours)
CSCI 174. Design and Analysis of Algorithms
Prerequisites: CSCI 115, CSCI 119. Models of computation and measures of complexity, algorithms for sorting and searching, set representation and manipulation, branch and bound, integer and polynomial arithmetic, pattern-matching algorithms, parsing algorithm, graph algorithm, NP-complete problems.
Units: 3

CSCI 176. Parallel Processing
Units: 3

CSCI 177. Distributed Computer Systems
Prerequisites: CSCI 113, CSCI 144. Characteristics and design of distributed systems. Application and network interconnectivity. Enterprise computing. Distributed data and transaction management. Distributed operating systems. Distributed problem solving and programming.
Units: 3

CSCI 186. Formal Languages and Automata
Prerequisite: CSCI 119. Introduction to formal language theory. Context-free grammars, context-sensitive grammars, unrestricted grammars; properties of context-free languages, push-down automata.
Units: 3

CSCI 188. Introduction to Computability
Prerequisite: CSCI 119. Introduction to computability and complexity. Turing machines, recursive functions, reduction, undecidability, classes P and NP, and intractable problems.
Units: 3

CSCI 190. Independent Study
See Academic Placement. Approved for SP grading.
Units: 1-3

CSCI 191T. Game Development
C/C+ programming and familiar with OpenGL fundamental Graphics programming. The aim of this class is to familiarize students with code for game engine tasks including rendering, 2D graphics, shaders, animation, state machines, object management, sound input pseudorandom number generators, rule-based AI, scripted level generation, time-based coding, event driven coding, and debuggers. This class is being taught using code for a simple billboard 2D game with constrained camera motion. Note: This class is being taught using windows coding as the core layer. Each student must have a machine running on windows OS. (Offered Spring 2020)
Units: 3

CSCI 191T. Topics in Computer Science
Prerequisite: CSCI 115 or permission of instructor. Special topics in computer science of current interest and importance.
Units: 3, Repeatable up to 9 units

CSCI 191T. Big Data Analytics
Prerequisites: MATH 75; CSCI 115. Introduction to data mining and knowledge discovery process, Big data fundamentals, Map-Reduce: Hadoop, dimensionality reduction: SVD and CUR, frequent itemsets and association rules, Recommender systems: similarity search, spam detection, and mining data streams. (Offered Spring 2020)
Units: 3

CSCI 194I. Cooperative Education
Prerequisites: courses appropriate to the work experience; approval by major department cooperative education coordinator. Integration of work experience with academic program, individually planned through coordinator. CR/NC grading only.
Units: 1-4

CSCI 198. Project
Prerequisite: senior standing in computer science or permission of instructor and approved subject. See [-LINK-]. Study of a problem under the supervision of a faculty member. Presentation by the student in a seminar setting and a final report are required. Satisfies the senior major requirement for the B.S. in Computer Science. Approved for RP grading.
Units: 3
Course Typically Offered: Fall, Spring

CSCI 200. Introduction to Research in Computer Science
Prerequisite: classified standing in computer science. Orientation to the graduate program, introduction to research methodology, and discussion of possible project and thesis topics.
Units: 1

CSCI 201. CSCI Colloquium
Prerequisite: CSCI 200 or permission by graduate coordinator. Colloquium in recent research in Computer Science. Students read, analyze, present, and discuss papers of recent research topics in Computer Science.
Units: 2
Course Typically Offered: Fall, Spring

CSCI 213. Computer Organization
Units: 3

CSCI 217. Programming Language Principles
Prerequisite: CSCI 117 or permission of instructor. Advanced topics in programming languages: concurrency, exceptions, types, procedures, execution models. Introduction to the formal specification of programming languages: syntax specification, semantic specification.
Units: 3

CSCI 226. Advanced Database Systems
Prerequisites: CSCI 126 and CSCI 144. Implementation of database systems on modern hardware systems. Operating system design issues, including buffering, page size, prefetching, etc. Query processing algorithms; design of crash recovery and concurrency contro
Units: 3

CSCI 230. Advanced Web Application Development
Prerequisite: CSCI 130 or permission of instructor. Application development for the World-Wide Web. Three-tier architecture; authentication, capability, and session management; versioning and open-source development. Case studies and project work. (Formerly CSCI 291T)
Units: 3

CSCI 244. Operating Systems
Prerequisite: CSCI 144. Operating system functions. Performance monitoring and fine-tuning. Network operating system design. Concurrency, analysis of deadlock. Selected topics from current research.
Units: 3

CSCI 246. Computer Architecture
Prerequisite: CSCI 144 or permission of instructor. Contemporary computer architectures. Pipelined, superscalar, shared and distributed memory, multicore and embedded systems. Memory hierarchy, computer arithmetic, interconnection networks. Selected topics from current research.
Units: 3

CSCI 250. Advanced Software Engineering
Prerequisite: CSCI 150 or permission of instructor. Theoretical and practical aspects of software engineering emphasizing requirements analysis, specification, design, coding, testing, correctness, maintenance, and management. Examination of reliability, performance, and software metrics.
Units: 3

CSCI 252. Software Development and Environments
Prerequisite: CSCI 150 or permission of instructor. Overview of advanced and state-of-the-practice software engineering methodologies and techniques for software development, software environments, software verification, software planning, or cost estimation. Selected topics from current research.
Units: 3

CSCI 253. Human-Computer Interaction
Prerequisite: CSCI 150 or permission of instructor. Software engineering approach to human-computer interaction. Design, evaluation, and implementation of user interfaces and experiences. Modeling, prototyping, inspection, and usability testing. Relationship of user interface characteristics to attention, errors, and efficiency.
Units: 3

CSCI 256. Wireless Communications and Mobile Computing
Prerequisite: CSCI 156. Review of basic wireless communication concepts, protocols, and architectures. Study of IEEE 802.11 based wireless LANs, wireless mobile ad hoc networks, wireless sensor networks, and wireless mesh networks. Mobile IP and cellular networks. (Formerly CSCI 291T)
Units: 3

CSCI 264. Artificial Intelligence
Prerequisite: CSCI 164 or ability to program in Lisp and Prolog. Software technology for artificial intelligence systems, including expert systems. Knowledge- based and rule-based systems. Explanation and learning. User-oriented interfaces.
Units: 3

CSCI 272. Computer Graphics
Prerequisite: CSCI 172 or permission of instructor. 3-D transformations, visible surface algorithms, shading, textures, curves and surfaces, computer-aided design, advanced modeling techniques, solid modeling, advanced raster graphics architecture, advanced geometric and raster algorithms, user interface, ray tracing, animation techniques, and fractals.
Units: 3

CSCI 274. Combinatorial Algorithms
Prerequisite: CSCI 174. Design and analysis of efficient algorithms for combinatorial problems. Network flow theory, matching theory, augmenting-path algorithms, branch-and-bound algorithms, data structure techniques for efficient implementation of combinatorial algorithms, analysis of data
structures, application of data structural techniques to sorting, searching, and geometric problems.

Units: 3

CSCI 282. Theory of Computation
Prerequisite: CSCI 188 or permission of instructor. General models of computation, recursive functions, undecidable problems, propositional calculus, predicate calculus, complexity classes, NP-complete problems.

Units: 3

CSCI 284. Automata Theory
Prerequisite: CSCI 186 or permission of instructor. Formal Languages, abstract machines, algebraic approach to automata, term rewriting systems, formal power series, cryptography, parallel computation.

Units: 3

CSCI 290. Independent Study
Prerequisite: approval of department. See Academic Placement -- [-LINK-]. Approved for SP grading.

Units: 1-3

CSCI 291T. Seminar
Prerequisite: approval of instructor. Special topics in computer science of current interest and importance.

Units: 1-3

CSCI 291T. Image Processing
Key concepts of image processing, from image coding, image compression (e.g. Fourier transform, Wavelets), to feature extraction and image enhancement. Digital image processing includes image format, image statistics, filtering, edge and contour detection, shape detection, thresholding, image match and registration... Requirements: linear algebra, calculus, and statistics. The main applications include optical character recognition, fingerprint detection, and biomedical images recognition. (Offered Spring 2020)

Units: 3

CSCI 297. Grad Synthesis
Prerequisite: Advancement to Candidacy and CSCI 201. A synthesis of selected areas in Computer Science, culminating in comprehensive exam covering these areas.

Units: 3

Course Typically Offered: Fall, Spring

CSCI 298C. Project Continuation
Pre-requisite: Project CSCI 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

CSCI 299. Master's Thesis
Prerequisite: advancement to candidacy and CSCI 201. See. Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.

Units: 3-6

CSCI 299C. Thesis Continuation
Pre-requisite: Thesis CSCI 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

COUNSELOR ED & REHABILITATION

COUN 150. Laws Relating to Children
Current and proposed legislation in parent-child relationships, adoption, and guardianship, education of the minor, marriage contract, child labor, juvenile delinquency, and child welfare programs.

Units: 3

Course Typically Offered: Fall, Spring

COUN 174. Introduction to Counseling
(COUN 174 same as PSYCH 174.) An overview of basic counseling models, including psychoanalytic, behavioral, cognitive, and humanistic approaches. Includes a personal counseling experience.

Units: 3

Course Typically Offered: Fall, Spring

COUN 176. Counseling and Mental Health
Examination of the relationship between counseling and mental health with emphasis on current issues of adjustment in society.

Units: 3

Course Typically Offered: Fall, Spring

COUN 180T. Topics in Counseling
Prerequisite: permission of instructor. Seminar covering special topics relating to counseling: new developments in counseling techniques, special populations, and current research. (Successful Career Development, $10)
COUN 180T. Collaborative Leadership Skills for Human Services Professionals
A three-part course designed for human services professionals. These workshop series will identify specific tools and strategies for tackling the challenges in today's complex, client-centered environment. Learn to move beyond concepts to highly leveraged and effective collaborative leadership.
Units: 1, Repeatable up to 12 units

COUN 180T. Attention Deficit Disorder: Information & Interventions for Effective Teaching (VESI)
This course is designed to give students a complete history of ADD along with accepted and experimental treatment methods. The course reviews current treatment of the disorder and practical intervention strategies designed to increase on-task behavior while decreasing disruptive, inappropriate, and off-task behaviors in the classroom. Instructor access is obtained through email or phone office hours. Must have MAC OS 9.x or OS 10.x or Windows 2000, XP Home, Professional, or newer. Requires 256 MB or RAM, 5 MB of free hard drive space, 15" or larger color monitor with minimum resolution of 800x600, CD driver 4x minimum speed and a printer connected to your computer. Offered cooperatively by CSU Fresno and Virtual Education Software.
Units: 2, Repeatable up to 5 units

COUN 190. Independent Study
See Academic Placement -- [-LINK-]. Approved for SP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

COUN 200. Seminar in Counseling Techniques
(3; Max total 6) Prerequisite: COUN 174. Emphasis given to interviewing skills, philosophy, theory, and methodology as applied to counseling. Student must earn a grade of B or better to move on to COUN 208. (2 seminar, 2 lab hours)
Units: 3

COUN 201. Seminar in Multicultural Aspects of Counseling
Prerequisite: COUN 174. Cognitive and experiential study of social and psychological variables which influence the cross-cultural counseling relationship. Culturally relevant models of counseling theory and practice are explored. Current research methods and findings are presented. (2 seminar, 2 lab hours)
Units: 3

COUN 202. Seminar in Group Counseling
Prerequisite: COUN 174, COUN 200. Theories and methods of interpersonal communication within groups, transferal of information, group leadership and membership, role perceptions, verbal and nonverbal interaction, and group counseling. (2 seminar, 2 lab hours - one of the two lab hours consists of mandatory participation in an experiential group)
Units: 3

COUN 203. Seminar in Assessment in Counseling
Prerequisite: ERE 153. Selection, administration, and evaluation of psychological tests and psychometric data for use in counseling settings. (2 seminar, 2 lab hours) (Course fee for assessment materials, $10)
Units: 3

COUN 206. Counseling Through the Lifespan
Prerequisite: COUN 174. Explores developmental issues and life events from infancy through old age and their effect upon individual, couples and family relationships. The impact of gender, race, ethnicity, class and sexual orientation on developmental process is explored.
Units: 3

COUN 208. Practicum in Counseling
Prerequisites: 12 units in counseling program, including COUN 200. Supervised on-campus counseling experiences with selected clients. Experience in individual counseling, critiquing of tapes and typescripts, observations, and case report writing. Students must earn a B or better to take COUN 219, 238, 239, or 249. (2 seminar, 4 lab hours)
Units: 4, Repeatable up to 8 units

COUN 209. Advanced Practicum in Counselor Supervision
Prerequisites: COUN 200 and permission of instructor. Content provides an introductory experience with the role of counselor supervisor. Focuses on the supervisory processes in terms of theoretical perspectives and practices of supervision. Enrollment is by faculty permission only. (Formerly COUN 280T) (CSU liability insurance fee, $8)
Units: 3-6

COUN 211. Seminar in Sexuality Counseling
Prerequisite: COUN 174. Emphasis on theories and research for the treatment of sexual issues, emphasizing relational and social contexts. Topics covered include sexual disorders, sexual abuse, and gay/lesbian/bisexual issues. (Formerly COUN 280T section)
Units: 3

COUN 214S. Student Development Theory and Higher Education Development
The purpose of this course is to provide graduate students an introduction to the field of college student and higher education development. Students will have opportunities to learn about a range of college student development theories and apply them in a service-learning context. Service-Learning is an integral part of this course to enhance students' insights into the processes of college student learning, growth, and development. Focus will be directed toward understanding...
patterns of growth and change during the college years through readings, service, class discussions, and reflective activities for different student subgroups and the implications of these changes for the practices of student affairs and college counseling.

Units: 3

COUN 215. Foundations of Student Services in Higher Education
Overview of the philosophical and practical foundations of student services in higher education. Covers historical and current trends and issues facing the student services professional in higher education. Visit with representatives from student services. Discusses ethical, legal and professional identity development.

Units: 3

COUN 219. Field Practice in Student Services
Prerequisites: COUN 200, COUN 208, and permission of instructor. Supervised practice in a community college, college, or university. Typically requires a one-year commitment with specific clock-hour requirements. Students must carry professional liability insurance. Approved for RP grading and CR/NC grading. (CSU liability insurance fee, $8)
Note: If taken a third time the units could be used towards electives.

Units: 3-6

COUN 220. Seminar in Career Development Theory
Prerequisite: COUN 174. Examination of career development theories and research for their implications in understanding career development generally and career counseling specifically. (2 seminar, 2 lab hours) (Course fee for assessment materials, $10)

Units: 3

COUN 230. Seminar in Family Therapy Theories
Prerequisite: COUN 174. Study of theories, techniques, and methodology of marriage and family therapy. Current research and methods are presented. (2 seminar, 2 lab hours)

Units: 3

COUN 231. Seminar in Ethics and Professional Practices of Counseling
Prerequisites: COUN 200 or permission of instructor; COUN 230 taken concurrently or completed prior to enrollment. Addresses professional concerns, including legal/ethical issues, professional identity, and Board of Behavioral Sciences regulations. Introduces family mediation and professional consultation. Includes a minimum of seven training hours in child abuse assessment and reporting in accordance with MFT licensing requirements.

Units: 3

COUN 232. Psychopathology and the Diagnostic and Statistical Manual of Mental Disorders
Prerequisite: COUN 174, COUN 176 or equivalent. Analysis of psychopathology within the framework of the current DSM. Emphasis on integrating the etiology of the disorders with diagnosis, theory and treatment. (Formerly COUN 207)

Units: 3

COUN 233. Seminar in Therapeutic Methods with Children, Adolescents, and Their Families
Prerequisites: COUN 206 and COUN 230 recommended. Theories and methods for assessing and treating children, adolescents, and their families. Emphasis is placed on strength-based approaches, play therapy, and current issues in child/adolescent treatment. Covers parent education. (Formerly COUN 213)

Units: 3

COUN 234A. Contemporary Issues in Counseling: Sexuality in Human Relationships
Course provides an overview of the role of sexuality in human relationships, including a review of sexual abuse, gay/lesbian/bisexual issues, sexual dysfunctions, and intimacy issues. Emphasis on treatment and interventions with couples. Course fulfills Board of Behavioral Sciences (BBS) requirement for human sexuality training.

Units: 1

COUN 234B. Contemporary Issues in Counseling: Violence in Intimate Relationships
Provides an overview of the sociological, systematic, clinical, and treatment aspects of violence in intimate relationships. Emphasis on assessment and intervention issues for individuals, couples, and families. Course meets BBS requirements for domestic violence training. (Formerly COUN 280T)

Units: 1

COUN 234C. Contemporary Issues in Counseling: Substance Abuse Treatment
Course provides overview of substance abuse counseling issues with an emphasis on treatment of the family system. Course meets BBS requirements for substance abuse training. (Formerly COUN 280T)

Units: 1

COUN 234D. Psychopharmacology
Prerequisite: COUN 232; REHAB 204A or REHAB 204B. This course will provide a general working knowledge of psychopharmacology for mental health professionals. The course will cover the biological basis for psychopharmacological treatment, principles of psychopharmacological treatment, and clinical

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psychopharmacology which is the effect on client behavior of psychotropic medications in the treatment of mental and emotional disorders. (Formerly COUN 280T)

Units: 2

COUN 234E. Seminar in Consultation
Prerequisites: COUN 174 and permission of instructor. Introduces students to the concepts, processes, and styles of consultation and highlights the role of counselors as consultants. Emphasis placed on comparing and contrasting consultation to other helping roles.

Units: 1

COUN 235. Couples Therapy
Prerequisite: COUN 230. Course provides an overview of the major theories and approaches to marital and couples therapy. Emphasis is placed on knowledge base, as well as evidence-based clinical intervention theories and skills.

Units: 3

COUN 238. Advanced Practicum
Prerequisites: COUN 208, COUN 230, COUN 232, and permission of instructor; COUN 231 taken concurrently or completed prior to enrollment. Supervised clinical experiences with families, couples, and/or children. Training in family systems assessment and family communication techniques. Students must carry professional liability insurance. Course must be completed with a grade of B or better. (CSU liability insurance fee, $8)

Units: 4, Repeatable up to 8 units

COUN 239. Field Placement in Counseling
Prerequisites: COUN 231; 40 units in counseling program, including COUN 200, COUN 208, COUN 238, and permission of instructor prior to semester of enrollment. Supervised practice of marriage and family therapy. Settings may include community agencies, school therapy programs, and hospitals. Typically requires a one-year commitment with specific clock-hour requirements. Students must carry professional liability insurance. Approved for RP and CR/NC grading. (CSU liability insurance fee, $8)

Units: 3-12

COUN 240. Seminar in Counseling of Exceptional Children and Their Parents
Theories and techniques in working with parents of exceptional children; emphasis placed on individual and group counseling skills with parents; direct contact with families, case study, and current legislation. (2 seminar, 2 lab hours)

Units: 3

COUN 241. Seminar in Organization of Counseling Services
Prerequisite: COUN 200. Organization, administration, and evaluation of counseling programs. (2 seminar, 2 lab hours)

Units: 3

Prerequisites: COUN 174 and COUN 200 or equivalent. Emphasis on current theory and methods of parent education, pupil advocacy, and consulting. Examination of current models in each area including ethical standards, legal concepts, and professional responsibilities. (2 seminar, 2 lab hours)

Units: 3

COUN 249. Field Practice in School Counseling
Prerequisites: COUN 200, COUN 208, and permission of instructor. Supervised counseling practice in school settings. Students must carry professional liability insurance. Required for the Pupil Personnel Services credential in school counseling. Approved for RP grading and CR/NC grading only. (CSU liability insurance fee, $8)

Units: 4-8

COUN 270. Seminar in Advanced Counseling Theories
This course is designed to foster an in-depth understanding of the major counseling theories while integrating core theoretical conceptualization in understanding human development and its challenges. Interventions, treatments, and multicultural impacts of the various theories are highlighted.

Units: 3, Repeatable up to 12 units
Course Typically Offered: Fall, Spring, Summer

COUN 271. Seminar in Addictions Counseling
This course provides an overview of addictions counseling, including substance use, co-occurring disorders, and other addictive behaviors. Approaches to identification, evaluation, treatment, and prevention, including legal and medical aspects, populations at risk and community resources are highlighted.

Units: 3
Course Typically Offered: Fall, Spring, Summer

COUN 272. Seminar in Psychopharmacology in Counseling
Prerequisite: COUN 232 This course introduces counseling students to psychopharmacology including the biological basis of behavior, classifications, indications, and contraindications of commonly prescribed psychopharmacological medications. The course incorporates an overview of substances, their actions, side-effects, use and abuses.

Units: 3
Course Typically Offered: Fall, Spring, Summer

COUN 273. Seminar in Crisis and Trauma Counseling
This course provides an overview of various concepts and principles of crisis and trauma including aspects of biopsychosocial interpersonal and communal forms of crisis and trauma. Assessment, prevention, intervention and necessary self-care strategies for counselors are highlighted.

Units: 3
Course Typically Offered: Fall, Spring, Summer

COUN 274. Seminar in Crisis and Trauma Counseling
Units: 3
Course Typically Offered: Fall, Spring, Summer

COUN 280T. Advanced Topics in Counseling
Prerequisites: postbaccalaureate standing and permission of instructor. Topics may include new developments in counseling techniques, rehabilitation counseling practices, special populations, and current research.
Units: 1-3

COUN 290. Independent Study
See Academic Placement - Independent Study. Approved for RP grading.
Units: 1-3

COUN 298. Project
Prerequisites: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220. See Criteria for Thesis and Project. A project consists of a significant undertaking appropriate to counseling such as the development of a program for counseling service delivery, development of audio-visual materials or computer software for counselor education or service delivery. An approved proposal is required for enrollment. Approved for RP grading.
Units: 3-4

COUN 298C. Project Continuation
Pre-requisite: Project COUN 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

COUN 299. Thesis
Prerequisites: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220 and completion of an acceptable thesis proposal. See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. See Kremen School of Education and Human Development's graduate programs coordinator for school thesis guidelines. Approved for RP grading.
Units: 3-4

COUN 299C. Thesis Continuation
Pre-requisite: Thesis COUN 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

REHAB 201. Professional Identity and Ethics in Counseling
This seminar provides an overview of the practice and profession of counseling. Areas to be examined include the historical, theoretical, legal, ethical and philosophical basis of counseling; supervision, professional organizations, credentials and trends of professional counselors. The course includes lectures, class discussions, guest lecturers, visits to outside facilities, reading and reporting on professional literature and experiential exercises.
Units: 3

REHAB 203. Work Evaluation Procedures
Study of systems and procedures of work evaluation assessment by public and private rehabilitation agencies to assess culturally diverse persons with disabilities. Include principles of testing; test selection (including situational assessments and work samples), administration and interpretation, and report generation. (Formerly COUN 280T)
Units: 3

REHAB 204. Medical & Psychosocial Aspects of Disability, Chronic Illness and Mental Health
The seminar consists of an analysis of various anatomical systems including discussions on terminology, treatment etiology, functional limitations, and psychosocial and vocational implications of physical, psychological and neurological disorders.
Units: 3

REHAB 205. Career Placement in Rehab Process
A seminar concerning the attitudes, skills, and abilities necessary to provide effective vocational and career placement services to people with disabilities, including vocational diagnosis, career development, placement techniques, job analysis, affirmative action, and appropriate legislation.
Units: 3

REHAB 211. Introduction to Clinical Mental Health Counseling
This course provides a historical overview of the Clinical Mental Health Counseling (CMHC) field. Current trends, professional issues, and other areas relevant to CMHCs will be examined. Roles and responsibilities of CMHCs across various settings will be explored. Professional organizations, preparation standards, and credentialing of CMHCs will be discussed.
Units: 3

REHAB 237. Clinical Rehabilitation and Mental Health Services Case Management
Seminar in methods for facilitating client rehabilitation including interviewing, case recording, plan development, ethical practices; cultural competency; role and function of rehabilitation counseling, including history and legislation; career development; assessment; assistive technology; evidenced-based practices; and clinical supervision.
Units: 3
REHAB 238. Clinical Rehabilitation and Mental Health Counseling Practicum
Prerequisites: COUN 200; REHAB 201, REHAB 204, COUN 220 and REHAB 237. Supervised experience in the application of counseling techniques in rehabilitation and counseling environments. Designed to provide direct, face-to-face counseling experiences with clients to develop students' basic communication, counseling and documentation competencies. Students must carry professional liability insurance (2 seminar, 2 lab hours).
Units: 3

REHAB 239. Internship in Clinical Rehabilitation & Mental Health Counseling
Prerequisites: COUN 200, COUN 202, REHAB 201, REHAB 211, REHAB 237, REHAB 238, or permission of instructor. Full-time, supervised field placement in one of a variety of settings including case responsibilities. Approved for RP grading and CR/NC grading only. (CSU liability insurance fee, $8) (Formerly COUN 269)
Units: 9

REHAB 262. Assistive Technology
Seminar on systems and procedures for the rehabilitation counselor in providing technology solutions for persons with disabilities including assessment to determine need and fit, adjustment counseling, training in use and maintenance, funding procurement and high and low technology resource development. (Formerly COUN 280T)
Units: 3

REHAB 264. Rehabilitation of the Industrially Injured Worker
Seminar on multiple aspects of worker's compensation system including policy, law, practice, case services and strategies that affect industrially injured workers. Includes differences between public and private rehabilitation and related insurance programs. (Formerly COUN 264)
Units: 3

REHAB 265. Rehabilitation for Substance Use Disorders
Introductory seminar covering patterns and extent of substance abuse, models of addiction, assessment and diagnosis, legal ramifications, physiological effects, characteristics of drugs, treatment approaches, prevention and ethical issues. This course includes readings, lectures, presentations, class discussions and student activities. (Formerly COUN 265)
Units: 3

REHAB 268A. Advanced Career Placement & Counseling: Job Retention
Prerequisites: REHAB 237; COUN 200, COUN 220. Supervised application of case management, job development, placement, retention, and advanced counseling principles. Students work holistically with consumers and agencies to develop and implement individualized service plans with primary emphasis on vocational goals through counseling experiences. Liability insurance required. (1 seminar, 2 lab hours) (Formerly COUN 268)
Units: 3

REHAB 268B. Advanced Career Placement & Counseling - Workability IV
Prerequisites: COUN 220, REHAB 237; COUN 200. Supervised application of case management, job development, placement, retention, and advanced counseling principles. Students work holistically with Department of Rehabilitation referrals to develop and implement individualized service plans with primary emphasis on vocational goals through counseling experiences. Liability insurance required. (1 seminar, 2 lab hours) (Formerly COUN 268B)
Units: 3

REHAB 268C. Advanced Career Placement & Counseling: Ticket to Work
Prerequisites: COUN 220, REHAB 237; COUN 200. Supervised practical application of case management, job development, placement, retention, and advanced counseling principles. Students work holistically with Social Security Administration referrals to develop and implement individualized service plans with primary emphasis on vocational goals through counseling experiences. Liability insurance required. (1 seminar, 2 lab hours) (Formerly COUN 268)
Units: 3

REHAB 268D. Advanced Career Placement & Counseling: Transition
Prerequisites: COUN 220, REHAB 237; COUN 200. Supervised practical application of case management and job development, placement, retention, and advanced counseling principles. Students work with young adult transition students with developmental, learning and/or physical disabilities, transition successfully toward independent living, employment, and educational opportunities.
Units: 3

REHAB 280T. Advanced Topics in Rehabilitation Counseling
Varies based on topic.
Units: 1-3

REHAB 290. Independent Study
See Academic Placement - Independent Study. Approved for RP grading.
Units: 1-3
REHAB 298. Project
Prerequisites: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220. See Criteria for Thesis and Project. A project consists of a significant undertaking appropriate to counseling such as the development of a program for counseling service delivery, development of audio-visual materials or computer software for counselor education or service delivery. An approved proposal is required for enrollment. Approved for RP grading.
Units: 3
Course Typically Offered: Fall, Spring

REHAB 298C. Project Continuation
Pre-requisite: Project REHAB 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

REHAB 299. Thesis
Prerequisites: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220 and completion of an acceptable thesis proposal. See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. See Kremen School of Education and Human Development's graduate programs coordinator for school thesis guidelines. Approved for RP grading.
Units: 3, Repeatable up to 6 units

REHAB 299C. Thesis Continuation
Pre-requisite: Thesis REHAB 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

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CRIMINOLOGY

CRIM 1. Strategies for Success in Criminology
Not open to non-crim majors; first semester major requirement. Program structure; faculty overview; degree requirements; support services; advising; grading; conduct and behavior; areas of academic knowledge and integration with emphasis upon critical thinking, decision-making and communication skills. CR/NC grading only.
Units: 1
Course Typically Offered: Fall, Spring

CRIM 2. Administration of Justice
Purpose, function, and history of agencies dealing with administration of justice; survey of criminal procedures; organization of law enforcement agencies at federal, state, and local levels; organization and functions of courts; probation, parole, and pardons; penology and prison administration; purpose and function of victim services.

Units: 3

CRIM 10. Crime, Criminology, and Justice
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. An introduction to the concept of crime, emphasizing its contextual foundations as the product of evolving criminal laws and the institutions that shape them. A survey of the methodological approaches used to measure and study crime. Patterns of crime and victimization in relation to their impact on society's response in its quest for justice. G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3

CRIM 20. Criminal Law
Highly recommend CRIM 1. Introduction to the case method of studying criminal law, theory, concept, and philosophy of substantive law and criminal offenses; analysis of court decisions and opinions through case method.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 50. Statistical and Computer Applications in Criminal Justice
Prerequisite: Mathematics placement category I or II. Students in Mathematics placement category III and IV are required to take CRIM 50 SI sessions. Statistical and computer applications as they relate to criminological research and policy. Emphasis on descriptive and inferential statistical methods for the analysis of data and the application of appropriate computer statistical packages and other specialized computer programs for criminal justice. Only for Criminology and Forensic Behavioral Sciences majors.
Units: 3
GE Area: B4
Course Typically Offered: Fall, Spring

CRIM 100. Criminology
Sociological, biological, psychological theories of crime causation; crime measurement; schools of criminology; crime typologies. Graduating criminology seniors have first priority; other students may receive priority status by permission of instructor.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 100H. Honors Criminology
Prerequisite: Open only to students who are qualified members of the Criminology Honors Program. An advanced exploration of the etiology of crime. An emphasis on primary literature with analysis and criticism of both classic and modern criminological theories.
CRIM 101. Crime and Violence in America
Prerequisites: G.E. Foundation and Breadth Area D. Introduces students to types of crime and violence in America within a sociological, cultural, economic, and political context. Emphasis on methodological approaches to crime measurement. Looks at how crime and violence impacts individuals and their environment. G.E. Integration ID.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: ID

CRIM 102. Criminal Justice Organization and Management
Prerequisites: CRIM 2, CRIM 20. Highly recommended: CRIM 100 and CRIM 170. Fundamentals of organization/management theory, principles, and processes relating to the operation and functioning of the criminal justice system, including victim services agencies.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 102H. Honors Criminal Justice Organization and Management
Prerequisite: Open only to members of the Criminology Honors Program. A comprehensive examination of the structure and process of the American Criminal Justice System from an organizational management perspective. Conceptual thinking is essential in this exploration of current and future organizational challenges.
Units: 3
Course Typically Offered: Fall

CRIM 108. Directed Policing
Open only to criminology majors. Prerequisite: Permission of instructor and sponsoring agency. Supervised field experience in police work for interpreting theories developed in parallel criminology courses. Purchase of uniform required. Approved for SP grading. CR/NC grading only. (Minimum of 6 field hours per unit.)
Units: 3, Repeatable up to 12 units
Course Typically Offered: Fall, Spring

CRIM 109. Comparative Systems of Criminal Justice
Prerequisites: CRIM 2. Highly recommended: CRIM 20, CRIM 100, and CRIM 170. Study of selected criminal justice systems in other jurisdictions; examination of the organization; administration and operations of criminal justice agencies in the United States, Europe, the United Kingdom, and Asia.
Units: 3

CRIM 110. Police in America
A basic survey course on the functions, roles, personnel systems, and management issues in law enforcement. Issues faced by municipal, county, state, and federal law enforcement are explored in detail. Analysis of contemporary programs and trends in policing. Community policing is explored. Studies issues of less-than-lethal technology and computerized information systems. Formerly CRIM 160T.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 112. Professionalism in Criminal Justice
Prerequisites: CRIM 2, CRIM 20. Highly recommended: CRIM 100 and CRIM 170. Professionalism in criminal justice including formal and informal control; political activity; use of discretion; conflict of interest; rights of clients; ethical, gender, and ethnic issues; and other current topics.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 113. Forensic Science
Prerequisite: CRIM 2. Open only to criminology majors. Advanced study of scientific crime investigation, identification, and detection methods.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 117. Criminal Legal Process
Prerequisite: CRIM 20. Specific emphasis on the laws of arrest, search and seizure, interrogation and confession, procedure prior to and during trial, postconviction procedures, limitations on criminal prosecutions and juvenile proceedings.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 118. Courts and Legal Procedure
Units: 3

CRIM 119. Legal Aspects of Corrections
Prerequisite: CRIM 20. Legal issues affecting corrections; constitutional issues involving rights of the convicted and civil liability of staff. Origin, development, and classification of criminal law in corrections. Rules of evidence, search and seizure, etc.
Units: 3
CRIM 120. Juvenile Delinquency
The problem of juvenile delinquency; portrait of delinquency; causal factors; agencies of justice; treatment process; programs for control and prevention. G.E. Integration ID.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 120S. Juvenile Delinquency
The problem of juvenile delinquency; portrait of delinquency; causal factors; agencies of justice; treatment process; programs for control and prevention. To gain valuable experience in understanding the causes and impacts of juvenile delinquency, students will work closely with a local at risk youth in a mentoring role. S sections include a service-learning requirement. G.E. Integration ID.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 126. Women and Violence: Public Policy and the Law
(CRIM 126 same as WS 126.) Historical and contemporary issues in public policy responses to violence against women. Gender bias in the legal system and policing violence against women. Theory and research on problems in government policy and enforcement of the law.
Units: 3
Course Typically Offered: Spring

CRIM 127. Evidence
Advanced problems in arrest, search, seizure, interrogation, and prosecution. The law of evidence, including problems of relevancy, hearsay, opinion, privilege, and scientific evidence. Juvenile law and procedure from detention to disposition.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 131. Correctional Institution Visitations
The opportunity to visit, examine, and investigate various correctional institutions within the state of California. Visitations will be mandatory. CR/NC grading only.
Units: 1-3
Course Typically Offered: Fall, Spring

CRIM 133. Institutional Corrections
Prerequisites: CRIM 2 and CRIM 20. Prison and issues of corrections in terms of historical development and current applications; various perspectives and definitions of social control; philosophical underpinnings of the system; prisoner and societal implications of social control.
Units: 3

CRIM 134. Criminal Justice Counseling
An overview of counseling modalities and counseling techniques in criminal justice settings.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 135. Community-Based Corrections
Prerequisites: CRIM 2 and CRIM 20. History and contemporary applications of community-based corrections. Juvenile and adult supervision at all three levels: local, state, and federal; probation, parole, electronic monitoring, residential treatment, drug/mental health courts, boot camps, intensive supervision.
Units: 3

CRIM 136T. Topics in Criminology
Analysis of selected areas of criminology; deviant behavior; institutional and non-institutional treatment; corrections; administration and management; law enforcement; criminalistics.
Units: 1-3
Course Typically Offered: Fall, Spring

CRIM 136T. New Identities
This course will examine criminological literature related to the role that identity change and transformation play in the process of desistance. Particular attention will be paid to the role that the development or redevelopment of an identity as 'student' can play in supporting and encouraging desistance. The course will also explore ways in which Project Rebound can help program participants to sustain and develop such identities.
Units: 1

CRIM 136T. Technology and the Criminal Justice System
This course examines the effects of advances in technology on criminal justice system practices and legal decision-making in connection with the administration of criminal justice. The course approaches discussion of these issues from historical and contemporary perspectives and closes with an evaluation of likely developments in the future. (Offered Spring 2020)
Units: 3

CRIM 137. Women, Girls & the Criminal Justice System
Prerequisite: CRIM 2. Analysis of women and girls in the criminal justice system; understanding of the role of gender in terms of female pathways to crime, nature of female offending, victimization, and incarceration. Gender-responsive criminal justice policy and practice.
Units: 3
CRIM 138. Punishment and Society
Prerequisites: CRIM 2; CRIM 20; CRIM 100, or by permission of instructor. In-depth examination of sentencing philosophies in the US; critical assessment of historical shifts and current developments in aims of sentencing; analysis of the impact on convicted offenders and society. (Formerly CRIM 136T: Philosophies of Punishment).
Units: 3
Course Typically Offered: Fall, Spring

CRIM 139. Criminal Justice Counseling Skills Practicum
Highly recommend CRIM 134 or permission of instructor. An experiential course designed to teach students essential skills in structuring counseling sessions with offenders. Emphasis on listening, validation, empathy, interviewing, probing, concreteness, self-disclosure, summarizing, confrontation, goal-setting, taking action, closure, and resistance.
Units: 3

CRIM 140. Family Violence
Typology and history of family abuse, including: legal guidelines; treatment approaches; emotional abuse; sexual abuse; spousal abuse; elderly abuse; and child abuse as a criminogenic factor.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 141. Alcohol, Drugs, and Criminality
Analysis of the composition, manufacture, use, and misuse of drugs (including alcohol); their relationship to criminality, and current responses by governmental and private organizations. Exposure to treatment programs may be required.
Units: 3
Course Typically Offered: Fall, Spring

CRIM 142. Basic Courtroom Procedure
Prerequisite: Permission of instructor. This course is part of the Mock Trial Program. The course focuses on courtroom procedures and related topics. (Formerly CRIM 136T)
Units: 3

CRIM 143. Legal Evidence
Prerequisite: Permission of instructor. This course is part of the Mock Trial Program. The course focuses on legal evidence and related topics. (Formerly CRIM 136T)
Units: 3

CRIM 144. Trial Tactics
Prerequisite: Permission of instructor. This course is part of the Mock Trial Program. The course focuses on trial strategies/tactics, rules of evidence, and related topics. (Formerly CRIM 136T)
Units: 3

CRIM 145. Effective Expert Witnesses
Prerequisite: Permission of instructor. This course is part of the Mock Trial Program. The course focuses on preparing effective expert witnesses. (Formerly CRIM 136T)
Units: 3

CRIM 150. Victim Services Program Management
This course examines the management techniques and skills needed to operate non-profit/government based victim services organizations. The course explores the various technologies that ensure victims' rights and efficient/effective service provision. Finally, advocacy regarding organizations, coalitions, and policies will be discussed.
Units: 3

CRIM 152. Elder Abuse
This course provides students with an overview of the history, theories, concepts, and practices of elder abuse. The course will also cover measurement, prevention, intervention, victim non-reporting practices, victims' rights, laws, and policies, victim recovery, and restorative justice practices.
Units: 3

CRIM 160H. Honors Seminar in Criminology
Prerequisite: Open only to students who are qualified members of the Criminology Honors Program. Honors seminar in specialized areas, new development and synthesis of criminological processes, thought and theory.
Units: 3, Repeatable up to 6 units

CRIM 160T. Topics in Crimes
Intensive focus on particular crime categories, e.g., political, corruption, terrorism; corporate, computer, white collar, fraud, embezzlement; homicide, assassination, mass murder, sex crimes, violence, assault, rape, mayhem; property, burglary, robbery, piracy, professional pickpocketing, swindling, safe-cracking; organized; arson; and environmental.
Units: 1-3
Course Typically Offered: Fall, Spring

CRIM 170. Research Methods in Criminal Justice
Highly recommended: PH 92, PSYCH 42, MATH 11, SOC 125, DS 73. Research methodology; use of library resources; electronic resources; preparation and handling of materials in criminology; written report required.
Units: 3

CRIM 170H. Honors Research Methods
Prerequisite: Open only to members of the Criminology Honors Program. The goal of this introduction to social science research is to develop a literature review and research design.
This involves an intense library search, development of a literature review and implementation of a research project.

Units: 3
Course Typically Offered: Fall

CRIM 173. Trauma & Crisis Intervention
Physiological and psychological aspects of trauma; analysis of Stress Theory, Crisis Theory, and PTSD; short term and long term trauma; advocate intervention techniques and referral sources.

Units: 3
Course Typically Offered: Spring

CRIM 174. Ethnic and Gender Issues in Criminal Justice
The impact of ethnicity, gender and race on criminal justice personnel, offenders, and victims. Special problems experienced by various groups in obtaining services within the criminal justice system.

Units: 3
Course Typically Offered: Fall, Spring

CRIM 175. Victimology
Major theoretical issues and debates in victimology. Victim blaming and defending, research and victim statistics, legal and policy dilemmas, bureaucratic responses to victims, and evaluation of victim compensation and restitution.

Units: 3
Course Typically Offered: Fall, Spring

CRIM 176. Victim Services
Survey of community services for victims. Focus on victim services as a new subsystem. Theoretical, social, and legal issues that affect delivery of victim services.

Units: 3
Course Typically Offered: Fall, Spring

CRIM 177. Legal Policy in Victim Services
Analysis of legislation and specific legal policies regarding victim services. Victim rights, the process of changing attitudes, and current laws will be a major focus.

Units: 3
Course Typically Offered: Fall, Spring

CRIM 178. Restorative Justice
Presentation and discussion of theories that underlie and support restorative justice as well as provide insight into restorative practices and their impact on victims, offenders, and the community. (Formerly CRIM 136T)

Units: 3

Course Typically Offered: Fall

CRIM 180HI. Honors Internship
Prerequisite: Open only to members of the Criminology Honors Program with senior standing. Mandatory student attendance at a "pre-orientation" meeting within one year prior to enrolling in a department internship section. The purpose is to relate the student's classroom studies with occupational and professional experiences. Students will be referred to related agencies where they will engage in activities requiring significant responsibility. CR/NC grading only.

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

CRIM 180I. Internship
Open only to Criminology majors. Prerequisites: CRIM 1, CRIM 2, CRIM 20. Co-requisite: CRIM 112 and senior standing, or permission by instructor/internship coordinator. Mandatory student attendance at a "pre-orientation" meeting within one year prior to enrolling in a department internship section. CR/NC grading only. (Minimum of 40 field hours per unit.)

Units: 3, Repeatable up to 12 units
Course Typically Offered: Fall, Spring

CRIM 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

CRIM 192. Readings in Criminology
Prerequisite: upper-division standing and permission of the instructor. Supervised readings in a selected field relating to criminology.

Units: 1-3
Course Typically Offered: Fall, Spring

CRIM 200. Research Methods in Criminology
Prerequisite: CRIM 170. Methods and techniques of research in criminology; research designs and models; preparation and critique of a research paper.

Units: 3

CRIM 201. Advanced Criminological Theory
Prerequisite: CRIM 100. An historical approach to a criminological theory. Special treatment of the theoretical underpinnings of contemporary thought. Detailed analysis of major 18th, 19th, 20th century thought.

Units: 3

CRIM 202. Law and the Criminal Justice System
Prerequisite: CRIM 117. The nature and philosophy of law; the common law tradition and our judicial system; the role of
legislation and rules of statutory interpretation; Constitutional Law concepts and their applications in the Criminal Justice System.

Units: 3

CRIM 203. Criminal Justice Systems
Prerequisite: CRIM 102. A comprehensive assessment of the historical evolution of the criminal justice system, including current status, victim rights, and future growth, theory (A) and (B) practices relating to (C).

Units: 3

CRIM 204. Quantitative Methods and Analysis
Prerequisites: CRIM 170. Methods of analysis of multivariate data: including multiple regression, logistic regression and factor analysis. Computer statistical packages, applications, and analysis of data.

Units: 3

CRIM 205. Qualitative Methods and Analysis
Examine a range of qualitative research methods and analysis, including theory and strategies, techniques of data collection and writing strategies relevant to qualitative research. Topics covered include interpretative theories, instrument development, interview techniques, ethnography, content analysis and inductive analytic methods.

Units: 3, Repeatable up to 12 units

CRIM 216. Essentials of Homeland Security
This course focuses on Homeland Security, terrorism, and theories of security, risk management, and national security strategy. An overview of key agencies and the legal and privacy issues inherent in balancing law and order with Constitutional rights and liberties.

Units: 3

CRIM 217. Radical Ideologies
Students will acquire an understanding of how ordinary individuals can acquire extraordinary philosophies that disrupt governance, derail the status quo, and often erupt into violent conflict.

Units: 3

CRIM 218. Intelligence Theory
Intelligence Theory is a course intended so that students can acquire an understanding of how the acquisition, analysis, and dissemination of information to generate criminal intelligence can be facilitated in a free society.

Units: 3

CRIM 219. Border and Homeland Security
This course focuses on border and homeland security, terrorism, risk management, and national security strategy.

Units: 3

Comparative approach to key agencies, policies and legal issues in securing international borders, critical infrastructure protection and related economic analysis in security, transportation, and immigration policy.

Units: 3

CRIM 220. Seminar in Group Therapy in Criminal Justice Agencies
Prerequisites: admission to the criminology graduate program. The theory and practice of group therapy in criminal justice agencies. Use of transactional analysis concepts in describing group interactions.

Units: 3

CRIM 221. Seminar in Family Counseling in Criminal Justice Agencies
Prerequisites: admission to the criminology graduate program. The theory and practice of family counseling in criminal justice agencies.

Units: 3

CRIM 252. Seminar in Criminal Justice Personnel Administration
Prerequisites: admission to the criminology graduate program. The historical development of modern personnel theory and practice in criminal justice agencies; manpower, merit concepts, concepts of man and work, classification, training and compensation, collective bargaining, and organizational communication.

Units: 3

CRIM 255. Seminar in Criminal Justice Labor Relations
Prerequisites: admission to the criminology graduate program. The historical development of labor relations theory and practice in criminal justice agencies; legislation, court decisions, collective bargaining agreements, arbitration awards and fact-finding, and administrative law decisions.

Units: 3

CRIM 265. Sex Crimes
Sex offenders are explored from epidemiological, psychological and etiological underpinnings and constraints as they relate to power, sex, gender and psychopathology. Attention given to the role of paraphilia and the vast array of sexual predators, lust killers, paraphilic stalkers and the mentally disordered sex offender. (Formerly CRIM 270T)

Units: 3

CRIM 270T. Problems in Criminology
Prerequisites: Admission to the criminology graduate program. Special problems in law enforcement or corrections; individual research in laboratory, library, or fieldwork; formal written reports. Weekly conference with instructor.

Units: 3-6
CRIM 270T. Psychology and the Criminal Justice System
This course is designed to provide graduate students with an overview of how psychology is applied to the criminal justice system, how case law shapes this application, and how legal decisions affect the direction of psychological research. Psychology and law is a vibrant area of research within the larger discipline of psychology. This is an interdisciplinary course for students whose research is concerned with criminology, criminal justice, psychology, and/or legal issues.
Units: 3, Repeatable up to 12 units

CRIM 275. Victimology and Social Change
Prerequisite: admission to the criminology graduate program. Theories and scientific research on the effects of crime on victims. An analysis of victim rights and services with specific review agencies and programs of community change. Models and strategies of understanding and assisting crime victims will be analyzed. (Formerly CRIM 270T)
Units: 3

CRIM 281. Supervised Professional Experience
Open only to criminology majors. Prerequisite: permission of instructor and selected agency. Supervised professional experience in law enforcement or correctional work. Approved for SP grading. CR/NC grading only.
Units: 1-6

CRIM 290. Independent Study
See Academic Planning-- Independent Study. Approved for RP grading.
Units: 1-3

CRIM 292. Readings in Criminology
Prerequisites: permission of instructor and chair, Criminology Graduate Committee. Individually directed readings in an area of special concern to the student's graduate program; appropriate written reports and evaluation required, individual student conferences. Approved for RP grading.
Units: 1-3

CRIM 295. Controversial Issues in Crime, Criminology and Law
Prerequisites: CRIM 200, CRIM 201, CRIM 202, and CRIM 203. An inclusive overview of controversial issues in criminology and law with an emphasis upon critical thinking, organization, decision-making and writing skills. An apogean experience involving the integration of graduate-level scholarly knowledge related to the study of criminology. (Formerly CRIM 270T)
Units: 3

CRIM 298. Project
Prerequisites: CRIM 200, CRIM 201, CRIM 202, and CRIM 203. See Criteria for Thesis and Project. Preparation and completion of a project demonstrating a significant undertaking such as implementing a program, evaluating an ongoing program, developing pilot studies of innovative ideas or implementing organizational change in the field of criminology, and submission of a written abstract. Approved for RP grading.
Units: 3-6

CRIM 298C. Project Continuation
Pre-requisite: Project CRIM 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

CRIM 299. Thesis
Prerequisites: CRIM 200, CRIM 201, CRIM 202, and CRIM 203. See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.
Units: 3-6

CRIM 299C. Thesis Continuation
Pre-requisite: Thesis CRIM 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

FBS 114. Ethics in Forensic Behavioral Sciences
Prerequisite: CRIM 2. Explores ethical aspects of the conduct of forensic behavioral scientists in the civil and criminal justice systems. Designed to provide the student with an informed basis for critically evaluating the behavior of behavioral scientists relative to legal proceedings. (Formerly CRIM 114)
Units: 3

FBS 153. Psychology of Criminality
Prerequisites: G.E. Foundation and Breadth Area D. Explores the psychological bases of criminal behavior as they relate to the biology of criminality, as well as to the numerous and varied contributions from cultural, economic, and geographic aspects of the social environment. (Formerly CRIM 153) G.E. Integration ID.
Units: 3
Course Typically Offered: Fall, SpringGE Area: ID

FBS 154. Fundamentals of Forensic Behavioral Sciences
Prerequisite: CRIM 2. Examines applications of behavioral sciences to the study and investigation of behavior and
their implications for civil and criminal judicial proceedings. Evaluation of issues related to behavioral sciences as they pertain to civil liability and criminal responsibility. (Formerly CRIM 154)

Units: 3

FBS 155. Biology of Criminality
This course examines criminal behavior in terms of psychophysiological factors, neurobiological and neuropsychological factors, and genetic factors. To understand the biology that underlies criminal behavioral responses to specific environmental factors. (Formerly CRIM 155)

Units: 3

FBS 156. Forensic Behavioral Sciences and the Law
Prerequisite: CRIM 2. Introduction to law, courts, and legal procedure as they relate to the use of the forensic behavioral sciences. Particular emphasis is placed on the use, misuse, and non-use of relevant forensic behavioral science information in legal decision-making. (Formerly CRIM 156)

Units: 3

FBS 157. Interviewing and Interrogation
Prerequisite: Crim 2. Topic overview, evaluation of recent research, and development of fundamental skills in three areas critical to investigations: interviewing witnesses, detecting deception, and interrogating suspects.

Units: 3
Course Typically Offered: Fall, Spring

FBS 159T. Topics in Forensic Behavioral Sciences
Prerequisite: Crim 2. Critical examination of the role of forensic behavioral sciences relative to specific issues, practices, and/or policies in the criminal justice system. (Formerly CRIM 159T)

Units: 3, Repeatable up to 12 units
Course Typically Offered: Fall, Spring

FBS 159T. Internet Sex Offenders
This course will focus on the use of the internet to commit sexual crimes, including possession of child sexual exploitation material and solicitation of minors to engage in sexual activities. Students will learn about offender characteristics, the connection between online and contact offending, and the risk for future offending. Other topics will include effective assessment, treatment, and management of online offenders. The effects on victims of these crimes and revictimization through their images circulating online will be discussed as well. (Offered Spring 2020)

Units: 3

THEATRE ARTS

DANCE 16. Introduction to Dance
Exploration of basic concepts, techniques and styles through study problems, video and critical readings. Dance concert attendance may be required. G.E. Breadth E1. (Formerly DANCE 116)

Units: 3
Course Typically Offered: Fall, Spring GE Area: E1

DANCE 20. Physical Theatre
Incorporates the study of body awareness techniques, contact improvisation, commedia dell’arte, clown work, and other physical theatre traditions in an active exploration of actor training and expression.

Units: 3
Course Typically Offered: Spring

DANCE 70. Balance BodyMind
Study of the alignment of the body and continuum between inner, cellular awareness of body through space. Promotes greater ease in movement; reduced emotional stress; knowledge of the body as process. Nondancers encouraged to enroll. G.E. Breadth E1. (Formerly DANCE 170)

Units: 3
GE Area: E1

DANCE 115. University Dance Theatre
A student organized course where the experiential, experimental, and exploratory nature of dance can be accessed. Focus is on achieving excellence through the preparation, performance, and production needs of completed works that are performed at the end of the semester. Not available for CR/NC grading.

Units: 1, Repeatable up to 9 units
Course Typically Offered: Fall, Spring

DANCE 117A. Modern Dance Technique
Basic aspect of modern dance technique. Emphasis on importance of breath, body alignment, and rhythmic coordination; total movement awareness.

Units: 1, Repeatable up to 2 units

DANCE 117B. Modern Dance Technique
Beginning-intermediate level study of movement fundamentals, locomotor activities, and expressive qualities; development of balance, strength, breath coordination, and technical ability.

Units: 1, Repeatable up to 2 units

DANCE 117C. Modern Dance Technique
Intermediate level of modern dance technique with emphasis on increasing skills in reading movement and expressing more complex patterns. This course further develops the core
DANCE 117D. Modern Dance Technique
Advanced level in modern dance technique with elements of alignment, embodiment, flexibility, strength, and energy flow. Individual mastery as well as ensemble performance are stressed. Technique of Hawkins, Limon, Graham and developmental theories of Bartenieff, Pilates, and Bainbridge-Cohen are integrated.
Units: 2, Repeatable up to 6 units

DANCE 155A. Modern Jazz Dance
An in-depth study of jazz dance, using a modern dance foundation that emphasizes the fortification, stretching and reshaping of mind and body to help produce a more accomplished dancer.
Units: 1

DANCE 155B. Modern Jazz Technique
An in-depth intermediate/advanced level study of jazz dance using a modern dance foundation that will emphasize the fortification, stretching and reshaping of mind and body to help produce a more accomplished dancer.
Units: 1

DANCE 158A. Ballet Technique
Elementary ballet technique. Emphasis on alignment, control and proper awareness of style and phrasing. Develops a foundation from which to build a dancer capable of a broad range of expression and demonstration to meet the demands placed on today's dancers.
Units: 1, Repeatable up to 2 units

DANCE 158B. Ballet Technique
Intermediate study of elementary ballet technique combined with a more broad-based understanding of Ballet as an art form through traditional exercises, with proper awareness of conditioning, style and phrasing.
Units: 1, Repeatable up to 2 units

DANCE 158C. Ballet Technique
An intermediate/advanced level ballet class with emphasis on technique, artistry, and conditioning. Builds well-placed dancers capable of a broad range of expression and demonstration with skills that can readily adapt to the demands placed on today's dancers.
Units: 2, Repeatable up to 12 units

DANCE 158D. Ballet Technique
Study of pre-professional advanced ballet technique with emphasis on performance preparation. Builds well-placed dancers capable of a broad range of expression and demonstration with impressive technical skills who can readily adapt to the demands placed on today's dancers.
Units: 2, Repeatable up to 12 units

DANCE 159. Music in Choreography
Study of Music Theory as it relates to modern and postmodern choreography. Development of the dancer's percussive and vocal abilities through the study of world music and rhythmic analysis.
Units: 3

DANCE 160S. Creative Movement for Children
Introduction to the basic concepts, principles, and methodology needed to develop an awareness of the aesthetic experience through dance and creative movement in educational and recreational settings. S sections include Service-Learning requirements.
Units: 3

DANCE 161. Musical Theatre
Training of actors for musical auditions through fundamental voice and movement techniques, study of how music and lyrics combine to suggest character, and study of relationship of song, scene, and choreography in various styles.
Units: 3

DANCE 163. Contemporary Dance Ensemble
Prerequisite: permission of instructor. Held in fall semester and meets for two semesters. An engaging performance and learning course, in which you can experience both the thrills and responsibilities of professional work in a performing arts situation.
Units: 2, Repeatable up to 14 units
Course Typically Offered: Fall, Spring

DANCE 164. Dance History
The historical development of dance from its origins to contemporary forms including diverse cultural perspectives.
Units: 3

DANCE 166. Dance Choreography
Investigation and practice of contemporary styles of choreography. Application of basic choreographic principles with emphasis on improvisation, form, content, current media and technology, group structures, movement invention and evaluative skills.
Units: 2, Repeatable up to 16 units

DANCE 170. Pilates Mat
Study and practice of Pilates Mat sequence incorporating principles of core strength and study of body musculature. Designed to give students an exercise program to supplement
any type of physical activity. Emphasizes use of breath, leads to total body strengthening. (Formerly DANCE 174T)

Units: 3
Course Typically Offered: Fall, Spring

DANCE 171. Philosophical Bases and Trends in Dance
Prerequisites: G.E. Foundation and Breadth Area C. The elements and principles common to all arts and their relationship to dance. G.E. Integration IC.

Units: 3
GE Area: IC

DANCE 174T. Topics in Dance
Selected topics may include philosophy, psychology, art, theatre, and music as related to dance.

Units: 1-3

DANCE 175. World Dance
Prerequisites: This course should be taken no sooner than the term in which 60 units of college coursework are completed. Theories and techniques of world dance forms and their social, cultural, and political significance. Particular attention will be paid to the ways that learning, performing, and watching dance can shape individual and group identities.

Units: 3

DRAMA 10. The Art of Theatre
Fundamental knowledge and skills required for study in the Theatre Arts Program which includes the literary basis, technique, visual impact, and presentation of drama.

Units: 3
Course Typically Offered: Fall

DRAMA 15. Dramatic Arts Laboratory
(Same as DRAMA 115.) Group laboratory experience in presentation of major productions for public performance. Not available for CR/NC grading.

Units: 1-2
Course Typically Offered: Fall, Spring

DRAMA 22. Oral Interpretation of Literature
Discovering and communicating intellectual and emotional meaning of the printed page through preparation and presentation of selected readings from prose, poetry, and drama. G.E. Breadth C1.

Units: 3
Course Typically Offered: Fall, Spring, GE Area: C1

DRAMA 30. Voice and Speech for Performance
Open to theatre arts majors and minors only. Principles of voice and speech for stage performance including the International Phonetics Alphabet, breathing, relaxation, resonance, enunciation, articulation, pronunciation, projection, expressiveness, and vocal characterization.

Units: 3
Course Typically Offered: Fall

DRAMA 31. Stage Dialects
Prerequisite: DRAMA 30 or permission of instructor. A study of the distinctive vowel and consonant substitutions and shifts in resonance focus for select regional dialects. Includes a review and application of the International Phonetics Alphabet as an actor's tool for stage dialects. (Formerly, DRAMA 188T section)

Units: 3

DRAMA 32. Introduction to Acting
Not open to theatre arts majors except dance option. Open to theatre arts minors. A study of the physiological, sociological, and psychological components of acting. Includes role-paying in daily life; characterization; text analysis; diverse cultural and generational perspectives; and relaxation, voice, and body techniques. G.E. Breadth E1.

Units: 3
Course Typically Offered: Fall, Spring GE Area: E1

DRAMA 33. Fundamentals of Acting
Open to theatre arts majors and minors only. Non-majors and minors, see DRAMA 32. Fundamental techniques and theories of acting; development of individual insight, skill, and discipline in the presentation of dramatic materials.

Units: 3
Course Typically Offered: Fall, Spring

DRAMA 34. Theatre Crafts
Introduction to the crafts in technical theatre scene construction, scene painting, property selection, stage lighting, sound production; costume construction, and makeup; laboratory experience in preparing major plays for public performance.

Units: 3
Course Typically Offered: Fall, Spring

DRAMA 35. Intermediate Acting
Prerequisite: DRAMA 33. Intermediate studies in acting including text analysis, expansion of the actor's character range and audition techniques.

Units: 3
Course Typically Offered: Spring

DRAMA 41. Makeup for Theatre
Theory and practice of makeup for theatre; techniques for characterization, style, and technical processes. Emphasis on basic techniques; introduction to prosthetics. Preparing plays for major public performances. (Formerly DRAMA 135)

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall

DRAMA 62. Theatre Today
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C1

DRAMA 77. Community Service - Theatre
Directed field experience developing skills in theatre or dance through a performance or design project; projects may include work with community service or other nonprofit organizations, public schools, special events, and other projects approved by the faculty supervisor.
Units: 1-3
Course Typically Offered: Fall, Spring

DRAMA 89. Projects in Production
(Same as DRAMA 189.) Prerequisite: permission of instructor.
Group projects in all phases of production in laboratory theatre.
Units: 1-3
Course Typically Offered: Fall, Spring

DRAMA 110. Design for the Theatre
Comprehensive study of design aesthetics and application of design to theatrical production, including scenery, costume, lighting, sound, and makeup. Laboratory application, material for major public performance.
Units: 3
Course Typically Offered: Fall, Spring

DRAMA 115. Dramatic Arts Laboratory
(See DRAMA 15.) Not available for CR/NC grading.
Units: 1-2
Course Typically Offered: Fall, Spring

DRAMA 131. Fundamentals of Playwriting
Exercises in plotting, characterization, exposition, and stage business, critical analysis, and revision of manuscripts.
Units: 3, Repeatable up to 9 units
Course Typically Offered: Fall, Spring

DRAMA 132. Advanced Acting: Period Styles
Prerequisite: DRAMA 35. A study of styles of acting ranging from Greek Tragedy to Theatre of the Absurd with special emphasis on playing Shakespeare.
Units: 3, Repeatable up to 6 units

DRAMA 133. Advanced Acting: Scene Study
Prerequisite: DRAMA 35. Advanced techniques including script analysis, characterization, physicalization, and emotional commitment, developed through improvisation and scene study.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

DRAMA 134A. Advanced Theatre Craft
Prerequisite: DRAMA 34. (A) Advanced training in scenic techniques and allied technology. Laboratory application to major public productions. (B) In-depth survey of each phase of the costume design and production process. Laboratory application to major public performances.
Units: 3

DRAMA 134B. Advanced Theatre Craft
Prerequisite: DRAMA 34. (A) Advanced training in scenic techniques and allied technology. Laboratory application to major public productions. (B) In-depth survey of each phase of the costume design and production process. Laboratory application to major public performances.
Units: 3

DRAMA 136S. Puppetry
Introduction to the art of puppetry: history, construction, manipulation, script writing, and basic concepts in art and theatre; use of puppets in educational and recreational settings. (S sections include a service-learning requirement (see Community Engagement and Service Learning in the General Catalog)
Units: 3
Course Typically Offered: Fall, Spring

DRAMA 137. Creative Dramatics
(DRAMA 137 same as CI 137.) Basic techniques for the use of dramatization in elementary education; sociodrama, dramatization of school subjects, creative dramatic play; simplified staging techniques.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

DRAMA 138A. Children's Theatre
(138B; max total 6) (A) Directing Theatre for Youth; theory, practice, and applications of theatre for children and adolescents; children's plays are examined through reading, discussion, and scene study. (B) Prerequisite: permission of instructor. Theatre for Young Audiences Tour; experience touring children's theatre productions for public performances.
Units: 3
DRAMA 138B. Children's Theatre
(A) Theory, practice, and applications of theatre for children and adolescents; children's plays are examined through reading, discussion, and scene study. (B) Prerequisite: permission of instructor. Theatre for Young Audiences Tour; experience touring children's theatre productions for public performance.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

DRAMA 139. Fundamentals of Play Direction
Prerequisite: DRAMA 33. Fundamental techniques and theories of stage direction; function, responsibility, movement, analysis, style; practice in directing scenes.
Units: 3
Course Typically Offered: Fall, Spring

DRAMA 150. Acting for Film
Introduction to specific performance, terminology, working in studio and on location front-of-camera experience. Introduction to industry standards regarding resume/photo preparation, audition, union information, agency representation, and professional development. (Formerly DRAMA 188T)
Units: 3

DRAMA 151. Stage and Production Management
Principles and techniques of stage and production management as applied to professional, educational, and community theatre and applied media; production, audition, rehearsal process, and organization; technical and performance process and procedures; production personnel and cost management.
Units: 3
Course Typically Offered: Fall

DRAMA 155. Sound in the Theatre
Theory, techniques, and procedure necessary to develop and integrate sound, music, and effects in theatre production; hearing, acoustics, environment, sources, transducers, control, systems, equipment; organization and planning. Laboratory experience in preparing plays for a major public performance.
Units: 3
Course Typically Offered: Spring

DRAMA 157. Theatre Graphics
Development of rendering technique and other graphic skills essential to design for the theatre.
Units: 3, Repeatable up to 6 units

DRAMA 163. Dramatic Literature
Prerequisite: G. E. Foundation and Breadth Area C. Critical analysis of various types and styles of plays with respect to their form, meaning, and theatricality. G.E. Integration IC.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: IC

DRAMA 177. Community Service: Theatre Arts
Directed field experience developing skills in theatre or dance through a performance or design project; projects may include work with community service or other nonprofit organizations, public schools, special events, and other projects approved by the faculty supervisor.
Units: 1-3

DRAMA 179. Playwrights' Theatre
Prerequisite: permission of instructor. Presentation and readings of original and classical plays.
Units: 1-2

DRAMA 180A. Scene Design for Theatre
Prerequisite: DRAMA 34. (A) Styles, techniques, and methods of scene design; history. Laboratory application, material for major public performance. (B) Scenery design; design problems of a complicated play; experimental ideas; new materials. Laboratory application, material for major public performance.
Units: 3
Course Typically Offered: Fall

DRAMA 180B. Scene Design for Theatre
Prerequisite: DRAMA 34. (A) Styles, techniques, and methods of scene design; history. Laboratory application, material for major public performance. (B) Scenery design; design problems of a complicated play; experimental ideas; new materials. Laboratory application, material for major public performance.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

DRAMA 181A. Costume History for Theatre
A survey of historical periods of dress from early Egyptian civilizations to present day with an emphasis on application for stage usage. No prerequisites required.
Units: 3
Course Typically Offered: Spring - odd

DRAMA 181B. Costume Design for Theatre
Costume design for theatre and dance incorporating analysis of script, research of historical period, selection of fabric, preparation of budget, and rendering of plates. Emphasis on illustration and design elements.
Units: 3, Repeatable up to 6 units

DRAMA 182A. Stage and Television Lighting
Prerequisite: DRAMA 34 or DRAMA 134A-B. (A) Instruments, control, color, electromechanical factors and simplified design and planning lighting leading to and resulting in a major public performance. (B) Lighting as an art, design concepts; lighting plots, projections, sequential cue relationships. Laboratory application, material for major public performance.

Units: 3
Course Typically Offered: Fall

DRAMA 182B. Stage and Television Lighting
Prerequisite: DRAMA 34 or DRAMA 134A-B. (A) Instruments, control, color, electromechanical factors and simplified design and planning lighting leading to and resulting in a major public performance. (B) Lighting as an art, design concepts; lighting plots, projections, sequential cue relationships. Laboratory application, material for major public performance.

Units: 3
Course Typically Offered: Spring

DRAMA 185. History of the Theatre and Drama I
History of European theatre and component arts from ancient Greece through the mid-19th century; analysis of representative examples.

Units: 3
Course Typically Offered: Fall

DRAMA 186. History of the Theatre and Drama II
Prerequisite: DRAMA 163. From Ibsen to the present; analysis of representative examples.

Units: 3
Course Typically Offered: Spring

DRAMA 187. African-American Theatre
(DRAMA 187 same as AFRS 165.) Performance, scene development, and dramatic styles consistent with the African American experience. Exploration of cross-cultural aesthetics as they inform creative development. Development of self-written or published scenes and plays. (Formerly AFAM 165)

Units: 3, Repeatable up to 6 units

DRAMA 188T. Topics in Theatre Arts
Prerequisite: permission of instructor. Selected topics may include acting, children's theatre, creative dramatics, play direction, technical theatre, theatre history, dramatic literature, and theatre administration. (May include lab hours)

Units: 1-6

DRAMA 188T. Devised Theatre
This course introduces students to Devised Theatre and Collective Creation techniques. Borrowing from Improvisation and other acting exercises, this class functions as a theatre making laboratory where students are prompt to collaborate in various group projects, resulting in theatre pieces of their own authorship. This course encourages students to explore their interests in any area of the theatre (acting, design, playwriting, stage managing) and to explore their own voice and style as artists. (Offering Spring 2020)

Units: 3

DRAMA 188TZ. British Theatre
Units: 3, Repeatable up to 9 units
GE Area: IC

DRAMA 189. Projects in Production
(See Drama 89.)

Units: 1-3
Course Typically Offered: Fall, Spring

DRAMA 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

DRAMA 194. Shakespeare
Co-requisite: concurrent enrollment in ENGL 105. (ENGL 189 same as DRAMA 194.) Reading and writing analysis of major works of Shakespeare.

Units: 4

EHD 154B. Final Student Teaching Seminar - Drama
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.

Units: 1

EHD 155B. Studt Tchg Drama
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.

Units: 5-10
IAS 108. Interdisciplinary Arts Studies
Basic theories and techniques in art education, including interdisciplinary studies in visual art, music, drama, and dance as they apply to the elementary curriculum (GE IC for Liberal Studies majors only).
Units: 3
GE Area: IC

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ECONOMICS

ECON 25. Introduction to Economics
Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3

ECON 40. Principles of Microeconomics
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Introduction to microeconomic theories of demand, production, and income distribution; price determination and resource allocation, under alternative forms of market organization; government regulation of economic activity; applied economic analysis and policy formation in selected topic areas. G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3

ECON 50. Principles of Macroeconomics
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Economic theories of the determination of income, output, employment, and prices in the economy as a whole; business cycles, fiscal and monetary policies; economic growth and development; international trade; and comparative economic systems. G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3

ECON 100A. Intermediate Microeconomics
Prerequisites: ECON 40, ECON 50. Price mechanism and resource allocation under conditions of pure competition, monopolistic competition, oligopoly; theories of consumer's choice, cost, production, income distribution; nature of economic generalizations.
Units: 3

ECON 100B. Intermediate Macroeconomics
Prerequisites: ECON 40, ECON 50. An examination of classical, Keynesian and post-Keynesian theories of the determination of the levels of income, output, and employment; the scientific and ideological implications of Keynesian thought; and the theoretical foundations of contemporary monetary and fiscal policies.
Units: 3
Course Typically Offered: Fall

ECON 101. History of Economic Thought
Prerequisites: ECON 40 and ECON 50, or ECON 165 passed with C grade or better. Evolution of economics as a science; doctrines of different schools of thought -- Mercantilists, Physiocrats, Historical School, Classical Economists; contributions of outstanding economists.
Units: 3
Course Typically Offered: Fall

ECON 102W. Explorations in Economic Literature
Prerequisites: ECON 40, ECON 50; satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement; upper-division standing. An investigation into important economic ideas and issues through selected readings of either contemporary literature or classics in the history of economic thought or both. The class is conducted as a seminar with emphasis on student contributions. Meets the upper-division writing skills requirement for graduation.
Units: 3
Course Typically Offered: Spring

ECON 103. Economics of Inflation, Unemployment, and Growth
Prerequisite: ECON 40 and ECON 50 passed with C grade or better. Theoretical and empirical examination of the business cycle, including major economic variables such as Gross Domestic Product (GDP), inflation, unemployment, as well as other relevant economic indicators in the United States economy. The course emphasizes business cycle theories, economic indicators, and macroeconomic policies.
Units: 3

ECON 110. Economic History of the United States
Prerequisites: ECON 40 and ECON 50, or ECON 165 passed with C grade or better. Exploration and colonization to the present; economic factors in development of the United States; relationships of economic forces to historical, political, and social change.
Units: 3
Course Typically Offered: Spring

ECON 111. European Economic History
Prerequisites: ECON 40 and ECON 50, or ECON 165 passed with C grade or better. An examination of the causes and consequences of economic development in Europe from 1650 to 1950. Survey of selected economic forces that shaped key social institutions.
Units: 3

ECON 114. Economic Development of Poor Nations
Prerequisites: ECON 40 and ECON 50 passed with C grade or better. Intensive study of the causes and consequences of underdevelopment which affect two-thirds of the world's people. Topics include theories of development, historical roots of underdevelopment, evaluation of aid programs, New International Economic Order, Asian export economies, managing external debt.
Units: 3
Course Typically Offered: Spring

ECON 115T. Topics in Historical and Political Economics
Prerequisites: ECON 40 and ECON 50 passed with C grade or better or ECON 165 with a C grade or better. Detailed investigation of developments in the United States economy. Topics vary with the needs and interests of students and faculty.
Units: 1-3

ECON 117. Environmental Economics
Prerequisites: ECON 40 and ECON 50 passed with C grade or better. Investigation into the economics of resource use. Development and creation of resources through the application of technology and the destruction of resources through misuse and pollution of the environment.
Units: 3
Course Typically Offered: Fall - even

ECON 119. Urban & Regional Economics
Prerequisites: ECON 40 and ECON 50 passed with C grade or better. Examination of the San Joaquin Valley from a policy-oriented perspective. Construction of economic models and theories regarding how urban and regional economic activity is located across spaces. Investigation of why cities form and why they locate where they do. Application of regional economic models to the local economy.
Units: 3
Course Typically Offered: Fall

ECON 120. Women in the Economy
Prerequisite: ECON 40 and ECON 50, or ECON 165 passed with C grade or better. An exploration of the social and economic forces shaping the economic status of women in the U.S. Topics include women's participation in paid employment and current labor market and family policy issues.
Units: 3

ECON 123. Introduction to Econometrics
Prerequisites: ECON 40, ECON 50 and MATH 11 or MATH 101 or DS 73 or AGBS 71 or PSYCH 42 passed with C grade or better. Statistical data analysis in economics. Use of multiple regression analysis, time series analysis, index numbers. Basic theory; computer applications using major economic data sources; interpretation of results. (2 lecture, 2 lab)
Units: 3

ECON 125. Introduction to Mathematical Methods for Economics
Prerequisites: ECON 40, ECON 50; MATH 75. Introduction to mathematical methods useful for economic analysis. Mathematical concepts are developed in the context of economic examples and applications. Knowledge of fundamental economic concepts is required. Strongly recommended for students considering graduate school in economics or business.
Units: 3

ECON 131. Public Economics
Prerequisite: ECON 40 and ECON 50 passed with C grade or better. Impact of government expenditures and taxes on the allocation of resources and the distribution of income. Evaluation of government expenditure programs and tax policies. Analysis of existing government policies and proposed reforms.
Units: 3
Course Typically Offered: Fall - even

ECON 135. Money and Banking
Prerequisites: ECON 40 and ECON 50 passed with C grade. Survey of the monetary and banking system of the United States and analysis of its role in economic growth and stabilization.
Units: 3
Course Typically Offered: Spring

ECON 144. Economics of Sports
Prerequisites: ECON 40 and ECON 50 passed with C grade or better. Issues surrounding the monopolistic nature of professional leagues, tax incentives used to attract/maintain a professional franchise, and collective bargaining agreements will be analyzed through Industrial-Organization, Public Finance, and Labor Economics respectively.
Units: 3

ECON 146. Economics of Crime
Prerequisites: G.E. Foundation and Breadth Aread D. Economic theory of choice and rationality applied to analysis
of crime, focusing on white-collar and corporate crime. Examines costs and benefits of crime control policies. Economics of participation in crime, law enforcement, prosecution, and punishment. G.E. Integration ID.

Units: 3
Course Typically Offered: Fall

ECON 150. Labor Economics
Prerequisites: ECON 40 and ECON 50 or ECON 165 passed with C grade or better. Alternative theories of wages, employment, and structure of labor market; impact of collective bargaining on level of wages, employment, and labor's share of national income; history and philosophies of labor movement; structure and functioning of labor unions.

Units: 3
Course Typically Offered: Fall - even

ECON 152. Economics of Human Resources
Prerequisites: ECON 40 and ECON 50 or ECON 165 passed with C grade or better. Economic theory of investment in education and job training; economic theories of discrimination; analysis of earnings differentials for women and ethnic minorities. Issues discussed include educational choices, affirmative action, comparable worth, and human resource planning policies.

Units: 3
Course Typically Offered: Spring - odd

ECON 162. Health Economics
Prerequisite: ECON 40 and ECON 50 passed with C grade. Economic issues associated with the provision of health care in the U.S. Role of competitive market forces, non-profits, and government. Separate consideration of physicians, hospitals, insurance, and drug companies. Comparison to other countries.

Units: 3
Course Typically Offered: Spring - even

ECON 165. The Modern American Economy
No prerequisites. Not open to economics majors. Provides an overview of the major economic forces that shape our everyday experiences by introducing fundamental economic principles and applying them to the American economy. Audio-visual materials and computer simulations are presented.

Units: 3
Course Typically Offered: Fall, Spring

ECON 167. Contemporary Socioeconomic Challenges
Prerequisites: G.E. Foundation and Breadth Area D. In-depth analysis and discussion of major socio-economic challenges currently facing the U.S. Emphasis on understanding basic economic underpinnings of contemporary policy issues. Analysis of conflicting economic, social, political, and historical forces which condition and constrain policy implementation. G.E. Integration ID.

Units: 3
GE Area: ID

ECON 176. Economics Themes in Film
Prerequisites: G.E. Foundation and Breadth Area D. Emphasizes economic concepts, issues, and institutions through an integrated series of classic films, lectures, and discussions. Students will apply the economic way of thinking to social problems involving such topics as economic growth, unemployment, income distribution, discrimination, and the global economy. G.E. Integration ID. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: FallGE Area: ID

ECON 178. International Economics
Prerequisites: ECON 40, ECON 50 passed with C grade. International economic relations; problems and policies in the light of fundamental economic theory.

Units: 3
Course Typically Offered: Fall

ECON 179. International Political Economy

Units: 3

ECON 181. Political Economy of Latin America
Prerequisites: G.E. Foundation and Breadth Area D. Latin America's principal economic problems examined within a historical and contemporary context. Topics may include Colonialism, Neo-Colonialism, foreign corporations, debt crises, problems of industrialization, women and labor, agricultural backwardness, and free trade agreements. Intensive examination of major nations (particularly Mexico) and of dominant theoretical interpretations. Theories of development (structuralism, dependency, dualism, modernization) are integrated into case studies. Multicultural/International M/I.

Units: 3
Course Typically Offered: Spring - even

ECON 183. Political Economy of the Middle East
Prerequisites: G.E. Foundation and Breadth Area D. A survey of historical, social, cultural, political, and economic development, economic development in the Middle East. An examination of Western colonial policies, the creation of modern states and their political and economic policies, the role of religion, and cultural heritage. GE Area ID

Units: 3
Course Typically Offered: Spring

**ECON 185. Directed Readings**
Prerequisites: ECON 40, ECON 50 passed with C grade and permission of instructor. Directed readings in the literature of economics. Intensive reading of economic literature on special topics under faculty supervision.

Units: 1-3

Course Typically Offered: Fall, Spring

**ECON 188T. Special Topics**
Prerequisites: ECON 40, ECON 50. Consideration of in-depth, special topics in political economy; systematic, detailed study into issues not possible in survey courses. Topics vary with the needs and interest of students and faculty.

Units: 1-3

**ECON 189T. Topics in Public Policy**
Prerequisites: ECON 40, ECON 50. Detailed analysis of questions of economic policy. Areas of investigation include social welfare policy, farm policy, environmental quality policy, and others. Topics to be varied with the interests and needs of students and faculty.

Units: 1-3

**ECON 189T. Introduction to Game Theory**
Introduction to Game Theory will present an overview of relevant concepts such as Nash Equilibrium, credibility, asymmetric information, adverse selection among others; through examples drawn from games played in economics, politics, business and other fields. (Offered Spring 2020)

Units: 3

**ECON 190. Independent Study**
See Academic Placement -- Independent Study. Approved for SP grading.

Units: 1-3

**ECON 191I. Internship in Applied Economics**
Prerequisite: senior standing, economics major. Supervised experience in either the private or public sector to provide students an opportunity to professionally apply economic theory and analysis. CR/NC grading only.

Units: 1-3

**EDUCATION INTERDISCIPLINARY**

**EHD 40. Careers in Education**
Provides students with an overview of opportunities in the field of teaching and other related educational professions. Active class participation is enhanced by fieldwork at school sites under the guidance of a host teacher. Students are required to observe and/or participate in a variety of settings and classrooms at the primary, middle, and secondary levels; two hour seminars weekly, plus 2-hour site observation weekly, not including travel.

Units: 2

**EHD 50. Introduction to Teaching**
Orientation to role of teacher in public schools; 45 observation hours of teacher-pupil interaction, instructional approaches, classroom management in elementary, secondary, and/or middle schools; two-hour lecture weekly, plus two-hour school site observation weekly, not including travel. (CSU liability insurance fee, $8)

Units: 3

**EHD 50UNITRK. Introduction to Teaching (Unitrack)**
Orientation to role of teacher in public schools; observation of teacher-pupil interaction, instructional approaches, classroom management in elementary, secondary, and/or middle schools; two-hour lecture weekly, plus two-hour school site observation weekly, not including travel. CR/NC grading only. (Unitack Only)

Units: 3

**EHD 107. Child Abuse**
Develops perspectives on child abuse and child victimization. Assessment, treatment, and prevention of child abuse/neglect are covered. Other areas include: effects of divorce, media, and war on the lives of children and children's rights. Course meets licensure renewal requirements for many professional groups.

Units: 3

**EHD 110D. Initial Student Teaching: Dual**
Prerequisites: Admission to Multiple Subjects program; SPED 120. Supervised activities and teaching in public school classrooms including general and special education settings. CR/NC grading only. (Instructional materials fee, $7) (CSU liability insurance fee, $8)
Units: 4
Course Typically Offered: Fall, Spring, Summer

EHD 154A. Initial Student Teaching Seminar
Seminar to accompany initial student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.

Units: 1
Course Typically Offered: Fall, Spring

EHD 154B. Final Student Teaching Seminar
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.

Units: 1

EHD 155A. Student Teaching in Secondary School
Prerequisites: Admission to the Single Subject Credential Program; CI 151, CI 152, CI 159 must be taken prior to or concurrently with EDH 155A. Concurrent enrollment with SPED 121. Student teaching in middle school under clinical supervision; assignment requires 3 hours per day, Monday through Friday. CR/NC grading only.

Units: 4, Repeatable up to 8 units

EHD 155B. Student Teaching in Secondary School
Prerequisites: Admission to student teaching; EHD 155A, CI 161 (or concurrently depending on major departmental policy); senior or postbaccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in a single subject classroom; assignment is for the full day; five days per week. CR/NC grading only. (CSU liability insurance fee, $8)

Units: 5-10
Course Typically Offered: Fall, Spring

EHD 160A. Part Time Multiple Subject Student Teaching
Clearance for Final Student Teaching. Supervised teaching in public school classrooms; teaching experience requires a minimum of one-half days, five days per week. CR/NC grading only.

Units: 5
Course Typically Offered: Fall, Spring

EHD 160B. Part Time Multiple Subject Student Teaching
Supervised teaching in public school classrooms; teaching experience requires a minimum of one-half days, five days per week. Teaching Experience culminates in assuming all full-day classroom responsibilities for at least two weeks. CR/NC grading only.

Units: 5
Course Typically Offered: Fall, Spring

EHD 170. Field Study C
Clearance for Final Student Teaching. Supervised full-day, semester-long student teaching experience that culminates in assuming all classroom responsibilities for at least two weeks. Minimum required hours are Monday through Friday from 1/2 hour before school starts until at least 1/2 hour after the school day ends. CR/NC grading only.

Units: 9
Course Typically Offered: Fall, Spring

EHD 170A. Field Study C Seminar
Prerequisite: concurrent enrollment in EHD 170 or EHD 170ECE or EHD 160A/B required. This seminar accompanies Field Study C to provide opportunities for candidates to investigate and discuss a variety of topics and strategies and to reflect on issues that surface during their student teaching experience. Credit / No Credit Grading Only.

Units: 2

EHD 170ECE. Field Study C
Supervised full-day, semester-long student teaching experience that culminates in assuming all classroom responsibilities for at least two weeks. Minimum required hours are Monday through Friday half an hour before school starts, until at least half an hour after the school day ends. CR/NC grading only.

Units: 9
Course Typically Offered: Fall, Spring

EHD 174. Field Study A/Grades 4-8
Prerequisites: Admission to the Multiple Subject Credential program. (CI 171 and LEE 172 or concurrent enrollment). Concurrent enrollment in LEE 173. Supervised field experience in a 4-8 grade classroom. First in a sequence of three field placements preparing teacher candidates to teach in culturally and linguistically diverse classrooms. Requires a minimum of 6 hours a week over two afternoons, plus seminars. CR/NC grading only. (CSU liability insurance fee, $8)

Units: 2
Course Typically Offered: Fall, Spring, Summer

EHD 174A. Field Study A Seminar
Prerequisite: Concurrent enrollment in EHD 174. This seminar accompanies Field Study A to provide opportunities for candidates to investigate and discuss a variety of topics and strategies and to reflect on issues that surface during their student teaching experience. Credit / No Credit Grading Only.

Units: 1
EHD 174ECE. Field Study A-ECE
Prerequisite: Admission to Multiple Subject Credential, Early Childhood Education Program; concurrent enrollment in LEE 173ECE; completion or concurrent enrollment in CI 171ECE and LEE 172ECE. Supervised field experience in a 4-8 classroom; includes lesson planning and teaching reading and mathematics. CR/NC grading only. (CSU liability insurance fee, $8)
Units: 2
Course Typically Offered: Fall, Spring

EHD 178A. Field Study B/Grades K-3
Supervised field experience in a K-3 classroom. Second of three field placements preparing teacher candidates to teach in culturally and linguistically diverse classrooms. Requires a minimum of 12 hours a week (weekday mornings), plus seminars. CR/NC grading only. (Formerly EHD 110) (CSU liability insurance fee, $8)
Units: 2
Course Typically Offered: Fall, Spring

EHD 178A. Field Study B Seminar
Prerequisite: Concurrent enrollment in EHD 178. This seminar accompanies Field Study B to provide opportunities for candidates to investigate and discuss a variety of topics and strategies and to reflect on issues that surface during their student teaching experience. Credit / No Credit Grading Only.
Units: 1

EHD 178ECE. Field Study B-ECE
Prerequisites: Completion of Phase I Multiple Subject Credential, Early Childhood Education Program (CI 171ECE, LEE 172ECE, LEE 173ECE, EHD 174ECE, CI 176); concurrent enrollment in LEE 177ECE & LEE 148. Phase 2 supervised field experience in culturally and linguistically diverse preschool and K-3 classrooms. CR/NC grading only. (CSU liability insurance fee, $8)
Units: 2
Course Typically Offered: Fall, Spring

EHD 180T. Topics in Education and Human Development: Lesson Study
The implementation of student-centered teaching of mathematics through practicing Lesson Study. International and local perspective to best practices through active learning. Coaching and cognitively guided instruction embedded in lesson study.
Units: 1, Repeatable up to 9 units

EHD 180T. Culturally Sustaining Pedagogy in STEM
This Liberal Studies capstone course presents students with a framework for STEM teaching and learning that is relevant to and embedded in the needs of learners in California's Central Valley. Culturally Sustaining Pedagogy is an approach that considers the funds of knowledge of culturally and linguistically diverse students as assets to the community of learners. Action research projects will prepare future teachers to bring science concepts to diverse learners. (Offered Fall 2019 & Spring 2020)
Units: 3

EHD 180T. Social Sciences through Universal Access
This Liberal Studies capstone course presents students with a framework for Social Sciences teaching and learning that is relevant to and embedded in the needs of diverse learners in California's Central Valley. Universal Access is a concept that encompasses planning for the greatest diversity of students from the beginning of planning, rather that adapting a reactive manner. Students in the course will synthesize their learning from previous social sciences courses using a digital portfolio. (Offered Fall 2019 & Spring 2020)
Units: 3

EDUCATIONAL LEADERSHIP

EAD 259. Conflict Resolution in Organizations
Highlights issues related to conflict resolution in organizations. Topics include defining and diagnosing conflict, communication, power as a variable of conflict, steps in resolving conflict, defining positions, interests and needs, negotiation, mediation and arbitration. (Formerly EAD 278T)
Units: 1

EAD 261. Introduction to Education Administration
Initial course in Education Administration sequence. Development of knowledge and skills central to managing educational organizations.
Units: 3

EAD 262. Education Leadership
Prerequisites: EAD 261. Initial course in education leadership. Development of knowledge and skills essential to organizational leadership.
Units: 3
EAD 263. Seminar in Instructional Supervision
Prerequisites: EAD 261, EAD 262. Seminar for clarification and application of modern concepts and techniques of supervision; practice in leadership roles, promoting productive human relationships, developing communication skills, and evaluation of teaching; ways of helping teachers in their credential fields.
Units: 4

EAD 264. Seminar in the Legal Aspects of Education
Prerequisites: teaching experience; EAD 261. A case study approach in reviewing important court decisions, both state and federal, that have directly affected the public schools. Legal relationships in public education applied to federal, state, and local levels.
Units: 2

EAD 265. Seminar in School-Community Relations
Prerequisite: EAD 261. Seminar on interaction with community forces, news media, political agencies, and minority groups in policy analysis and development; databased decision-making and analysis.
Units: 2

EAD 266. Seminar in School Finance and Business Administration
Prerequisite: EAD 261. Economic perspectives and practices of school finance and business administration; local, state, and federal responsibility for financial support of education. (2 seminar hours)
Units: 2

EAD 269. Site-based Leadership
Prerequisites: EAD 261, EAD 262, EAD 263, EAD 272. Includes essentials of site leadership: school law, finance, community relations, personnel, and support services. In-depth research into restructuring, teacher empowerment, and student achievement in culturally diverse schools.
Units: 4

EAD 271. Seminar in School Facilities
Prerequisite: preliminary credential or permission of instructor. Emphasis on planning, design, and function of educational facilities so they are consistent with the educational goals of the school and school district. (2 seminar, 2 lab hours)
Units: 3

EAD 272. Advanced Curriculum Design and Development
Prerequisites: EAD 261 or permission of instructor. Nature and scope of curriculum development; administrative determiners of curriculum; influence of governmental agencies and organizations, foundations, business and industry, and power structures as curriculum determiners; international influence on curriculum development and curriculum evaluation at various levels of governmental operation.
Units: 4

EAD 273. Ethical and Professional Issues in Education Administration
Prerequisite: Preliminary Administrative Services Credential or permission of instructor. Seminar on the ethical and professional issues of administrative professionalism, examined in the context of the various roles the administrator is expected to perform as a practitioner.
Units: 3

EAD 274. Instructional Systems and Leadership for Equity
Equip students with the knowledge and skill to create systemic and systematic responses to address the diverse levels of student need and use evidence of student learning to create and deeply embed a culture of equity and continuous improvement.
Units: 3

EAD 275. Seminar in Advanced Techniques of Personnel Administration in Education
Prerequisite: EAD 261. Advanced techniques of staff improvement in-service, staff participation in policy making, improvement of communication channels and methods of communication, economic and contractual relationships, and improvement of working condition; work and responsibility of nonteaching staff members.
Units: 2

EAD 277. Computer Applications in Education Administration
Prerequisite: preliminary credential or permission of instructor. Factors relating to assessment and implementation of computer applications to support educational programs and administrative operations in school districts, including computer assisted instruction, student personnel, fiscal and property controls, personnel, and related educational and business functions characteristic of school districts. (2 seminar, 2 lab hours)
Units: 3

EAD 278T. Topics in Advanced Education Administration
Prerequisite: preliminary credential or permission of instructor. Seminar covering special topics relating to education administration: new developments in education administration, special populations, and current research.
Units: 1-3

EAD 278T. School Accounting
Units: 3
EAD 279. Advanced Administration Fieldwork
Prerequisites: employment in a position requiring an Administrative Services Credential and permission of instructor. Supervision of Professional Administrative Services Credential candidates in their place of employment. The type of assignment will depend on requirements of the university and will be individually developed in corporation with candidate's employer. Includes seminar discussion of field experience and required research. CR/NC only. (40 hours required for 1 unit)
Units: 1-8

EAD 280T. Topics in Professional Development
Prerequisite: preliminary credential or adviser permission. Advanced-level studies in theory, procedures, and application of education administration principles. Includes such topics as: community advisory committees, marshalling resources, interventions for school improvements, technology utilization, and restructuring. CR/NC only.
Units: 1-3

EAD 280T. Foundations of Inquiry and Applied Research
This course is designed to enhance the students' understanding of leadership issues within the context of higher education organizations. The aim of this course is to introduce concepts and approaches of research applied to higher education contexts. The purpose of the course is to promote students' appreciation of the role of educational research in educational policy and practice, particularly as it relates to institutional data. The course will deepen students' epistemological and ontological understandings of knowledge and promote students' awareness of different methodological approaches to research. Students to identify areas that can be informed by institutional research. (Offered Spring 2020)
Units: 3

EAD 280T. Assessment, Analysis and Information Systems
This course is designed to develop knowledge and skills necessary to make effective data-driven decisions, including the use of a continuous improvement processes and the strategic collection and application of multiple data streams to inform, manage and analyze systems. (Offered Fall 2019 and Spring 2020)
Units: 3

EAD 281. Transformational Leadership
Prerequisite: EAD 283 and permission of instructor. A course for experienced practitioners in organizational development. Interventions for restructuring, including site-based management, staff development, strategic planning, and team building, as well as individual and community interventions aimed at transforming schools and other organizations into world class operations.
Units: 2

EAD 283. Professional Development Induction
Prerequisites: preliminary administrative services credential, full-time employment in an administrative position, and permission of instructor. A professional development course is required for the professional administrative services credential. First course among advanced credential requirements. RP or CR/NC grading only.
Units: 2

EAD 284. Professional Development Assessment
Prerequisites: completion of professional administrative services credential coursework and permission of instructor. A professional development course is required for the professional administrative services credential to verify satisfactory completion of the induction plan and individualized course of study to meet the advanced credential requirements. Final course among the advanced credential requirements. CR/NC only.
Units: 2

EAD 287. Internship I
Prerequisites: employment in a position requiring an administrative services credential, concurrent enrollment in EAD 261, and permission of adviser. Supervised administrative practice with emphasis on leadership, school management, classroom supervision, and community relations, while employed in a full time position requiring an administrative services credential. Includes seminar discussion of internship experiences, professional development plan, and required research. CR/NC only. (CSU liability insurance fee, $8)
Units: 3

EAD 288. Internship II
Prerequisites: employment in a position requiring an administrative services credential, completion of EAD 261, EAD 262, EAD 272, and CI 285, taken concurrently with EAD 263 and EAD 269, and permission of adviser. Supervised administrative practice with emphasis on continuation of professional development plan, leadership, school management, classrooms supervision, and community relations. Students must be employed in a full time position requiring an administrative credential. Includes seminar discussions of internship experiences and research. CR/NC only. (CSU liability insurance fee, $8)
Units: 3

EAD 290. Independent Study
See Academic Placement -- [LINK-]. Approved for SP grading.
Units: 1-3
EAD 298, Project
Prerequisites: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220. A project consists of a significant undertaking appropriate to graduate study in education. An approved proposal is required for enrollment. Approved for RP grading.
Units: 4

EAD 298C. Project Continuation
Pre-requisite: Project EAD 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

EAD 299, Thesis
Prerequisites: advancement to candidacy for the master's degree; B average on 24 units of the master's program including, ERE 220 and completion of an acceptable thesis proposal. Preparation, completion, and submission of an acceptable thesis for the master's degree. See Kremen School of Education and Human Development's graduate programs coordinator for school thesis guidelines. Approved for Rp grading.
Units: 4

EAD 299C. Thesis Continuation
Pre-requisite: Thesis EAD 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

CURRICULUM & INSTRUCTION

CI 100. Educational Applications of Technology
Use of multiple applications of current and emerging technologies to increase subject matter knowledge and understanding. Evaluation of technologies as effective tools of learning. Exploration of ethical and social issues related to technology.
Units: 3
Course Typically Offered: Fall, Spring

CI 101. Educational Applications of Technology for Secondary Teachers
Use of multiple applications of current and emerging technologies to increase knowledge and understanding of secondary teachers. Evaluation of technologies as effective tools of learning. Exploration of ethical and social issues related to technology. (2 lecture, 2 lab hours)
Units: 3

CI 123. Classroom Management
Classroom organization, management, and mainstreaming including focus on the culturally, linguistically diverse student. (Formerly CTET 123)
Units: 2
Course Typically Offered: Fall, Spring

CI 124. Principles of Character Education
Prerequisites: Senior status or credential student status. This course is to provide an introduction to and background of character education as required by the California Education Code Section 233.5(a). The class normally will be offered as a one-unit, two-day weekend course. This course is an elective one-unit class designed for students of senior status who seek admission to a CSUF credential program or for current credential students. (Formerly CI 180T).
Units: 1, Repeatable up to 2 units
Course Typically Offered: Fall, Spring

CI 127. Child Abuse and Neglect for Teachers
Develop realistic perspectives on child abuse and neglect for students, teachers, and teaching candidates. Focus is on identifying, assessing, and documenting child maltreatment and knowledge, application and documentation of the California Mandated Reporting Laws.
Units: 1

CI 136. Multicultural Education
Assists teachers and other school personnel to acquire skills in multicultural curriculum design and delivery. Emphasizes language acquisition instruction and mentoring techniques for working with students in a pluralistic society. (Formerly CTET 136)
Units: 3

CI 137. Creative Dramatics
(DRAMA 137 same as CI 137.) Basic techniques for the use of dramatization in elementary education; sociodrama, dramatization of school subjects, creative dramatic play; simplified staging techniques.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

CI 149. Curriculum, Instruction, and Technology in Secondary Classrooms
Use of research to inform decisions about instructional planning, pedagogical strategies, assessment, and classroom organization to facilitate learning for all students in secondary classrooms. Use of current and emerging technologies to enhance learning.
Units: 3
CI 150ECE. Managing Early Learning Environments
Appropriate for Early Child Emphasis, Multiple Subject Credential candidates in their second semester of the teacher education program. Introduces pre-service teachers to a variety of psychological approaches to managing early learning environments. CR/NC only. (Formerly EHD 111)
Units: 1
Course Typically Offered: Fall

CI 151. Social Contexts of Teaching and Learning
Foundations of education contemporary issues; legal responsibilities; effective involvement with family and community.
Units: 3
Course Typically Offered: Fall, Spring, Summer

CI 152. Adolescent Learning and Development
Prerequisites: Admission to Single Subject Credential Program. Psychological theories of teaching and learning, growth and development of adolescents, motivation, classroom management, and student performance and assessment issues.
Units: 3
Course Typically Offered: Fall, Spring, Summer

CI 159. Curriculum and Instruction in Secondary Schools
Prerequisites: admission to the Single Subject Credential Program and concurrent enrollment in EHD 155A. Instructional planning, methodologies of teaching and learning, evaluation techniques, motivation, classroom management, preparation and evaluation of materials, technology integration. Lesson demonstration and analysis. (2 lecture, 2 lab hours) (Formerly CTET 159)
Units: 3
Course Typically Offered: Fall, Spring, Summer

CI 161. Methods and Materials in Middle School Science Teaching
This course is designed to familiarize teachers with the instructional procedures, techniques, and resources that are unique to teaching science at the middle school level.
Units: 3

CI 161. Methods and Materials in Secondary Teaching
Instructional procedures, techniques, and resources for teaching; appraisal of instructional innovations; classroom organization and management; measurement and evaluative techniques.
Units: 3, Repeatable up to 999 units

Course Typically Offered: Spring

CI 162. Understanding Children, Learning, and Development in TK-8 Classrooms
This course focuses on the principles of educational psychology and their relations with recent research and school practice. It provides diverse theoretical perspectives on learning and development in children and adolescents, as well as their implementation and application in school settings. (Formerly CI 180T)
Units: 3
Course Typically Offered: Fall, Spring

CI 163. Curriculum and Pedagogy: Designing for Successful Teaching TK-8
Prerequisite: Admission to the Multiple Subject Credential program. This course examines the design and development of interdisciplinary and integrated curriculum in K-8 classrooms. The course content includes background information on curriculum theories and multiple pedagogical approaches with a focus on the integration of curriculum and instruction. (Formerly CI 180T)
Units: 3
Course Typically Offered: Fall, Spring

CI 171. Understanding the Learner, Instructional Design and Assessment
Prerequisites: Admission to the Multiple Subject Credential Program. Students not currently enrolled in EHD 174 need to make special arrangements with instructors. This course focuses on applied psychology, considering developmental/learning theory, research, and assessment as it relates to the learner. Students examine the design of integrated curriculum in K-8 classrooms and investigates reforms, curricular theories, and instructional models.
Units: 3
Course Typically Offered: Fall, Spring, Summer

CI 171ECE. Psychological Contexts of Teaching and Learning
Prerequisites: Admission to Multiple Subject Credential, Early Childhood Education Program. Child context (0-8) is explored. Typical/atypical development, psychological theory, research, practice and current issues are examined.
Units: 3
Course Typically Offered: Spring

CI 175. Science Instruction and Applied Technology
This course is designed to prepare teacher candidates to effectively and equitably teach elementary school science and to use contemporary instructional technologies in culturally and linguistically diverse classrooms.
Units: 3
CI 176. Mathematics Instruction and Applied Assessment
This course is designed to prepare teacher candidates to plan instruction based on the assessment of students' mathematical understanding and to teach mathematics using multiple strategies and methods in culturally and linguistically diverse elementary classrooms.
Units: 3

CI 180T. Topics in Curriculum and Instruction
Issues and topics in curriculum and instruction; elementary, middle school, and secondary education; technology, and computer literacy. (Formerly CTET 180T)
Units: 1-3

CI 180T. Pedagogy for Diverse Learners
This course assists pre-service teachers to acquire skills in culturally responsive pedagogy, curriculum design, and lesson design. The course emphasizes the development of varied pedagogical instructional strategies that are effective in working with diverse learners including English language learners, students of color and immigrant students in our public school system. (Offered Spring 2020)
Units: 3

CI 180T. Teacher Track: Common Core and Building Assets
Learners will understand the research and underlying concepts of assets-based youth development. They will participate in group dynamics related to assets development and will learn to become asset builders, both with the youth they serve and with the broader school environment in which they work. Learners will incorporate essential strategies from Common Core practices. (Offered Fall 2019 & Spring 2020)
Units: 3

CI 180T. More Than Survival: The elements of success in teaching choral music
This class will cover the essential elements of running a successful choral-music program. Topics will include motivation and discipline; rehearsal procedures (e.g. warm-up exercises, vocal-development drills, pacing rehearsals); techniques for introducing music and refining the concert "product," teaching musical literacy; literature for ensembles of various voicings (even unbalanced groups); assessment; preparing for festivals and competitions.
Units: 1, Repeatable up to 9 units

CI 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading. (Formerly CTET 190)
Units: 1-3

CI 210. Current Issues & Trends in Mathematics Education
Examination and analysis of state, national, and international issues related to K-12 mathematics curriculum, instruction, and assessment with implications for teachers, educational leaders, and policy makers. Professional development resources for mathematics teachers at all instructional levels. (Formerly CTET 280T; CTET 210)
Units: 3

CI 212. Mathematics Education in the Primary Grades
Mathematics content and methods for primary grades. Focus is on using research about children's mathematical understanding and mathematics classrooms to inform instructional decisions. (Formerly CTET 212)
Units: 3

CI 225. Integration of Technology Across the Curriculum
Prerequisite: CTC Level 1 technology requirements and completion of final student teaching, or admission to a graduate program or permission of department chair. Appropriate use of advanced technologies to enhance teaching and learning: accessing and evaluating information, analyzing and solving problems, and communicating ideas. Meets CTC Level 2 technology requirements.
Units: 3

CI 227. Current Issues and Trends in Educational Technology
Focuses on the social, economic, and psychological impacts of technology on schools, teaching, and learning. Students examine issues from a historical perspective and formulate a vision of the future of education and technology through readings, discussions, and research. (Formerly CTET 227)
Units: 3

CI 229. Designing Virtual Realities for Education
This course provides students with the skills and knowledge to design virtual reality representations of partner institutes in the region. Working in groups, student create educational products that will be posted on the web. (Formerly CTET 2280T; CTET 229)
Units: 3

CI 230. Planning and Implementing Innovative Technology Programs
Strategies for implementing change in educational settings; planning for equitable technology use; planning and instituting effective staff development programs; managing resources, including networking equipment; locating, developing, and coordinating funding sources; and gaining parent and community support. (Formerly CTET 230)
Units: 3
CI 240. Social Justice and the Multicultural Classroom
Cultural and political contexts of schooling; foundations of education. Enhancing educational equity by providing multicultural curriculum, culturally responsive pedagogy and culturally appropriate assessment. They conduct web-supported classroom research. Use web-based collaborative tools with teachers, families of pupils, and community members.
Units: 3

CI 241. Teaching for Equity and Justice in the Multicultural Classroom: Practice into Theory
Theory and practical application of multicultural curriculum design. Continued attention to learning theory, instructional theory and role of technology in education. Focus is on what knowledge is most worth teaching, given curriculum standards and the explosion of knowledge in a diverse society.
Units: 3

CI 245. Investigating Practice in the Diverse Classroom: Practitioner Research
Overview of the epistemological, political, and methodological issues associated with teacher/practitioner research, its progress historically, and the specific questions and issues investigated through teacher/practitioner research. Investigation of multicultural teaching as reflected in curriculum, teacher practice, and assessment of student learning.
Units: 4

CI 246. Action Research in the Multicultural Classroom: Capstone Project and Dissemination
Corequisite CI 260, CI 298B, or CI 299B. Culminating learning experience for the Master of Arts in Teaching (MAT) program. Students then disseminate their Action Research Project through digital display and a multimedia presentation. Enrollment limited to students admitted to the MAT program.
Units: 4

CI 250. Advanced Curriculum Theory and Analysis
Theory and practice of curriculum development, evaluation, and revision. Study of contemporary problems and curriculum approaches to meet societal needs.
Units: 3

CI 260. Critical Pedagogy
Students develop knowledge and skills to critically examine and improve planning, instructional decisions, assessment, and student learning. Students engage in systematic reflection of teaching practices.
Units: 4

CI 274. Social Interaction in Teaching
In-depth study of the dynamics of effective interpersonal relations in the classroom with students - and beyond - with administrators, parents, and colleagues. Strategic interaction for creative, low-stress teaching and learning based upon related theory and research. (2 seminar, 2 lab hours) (Formerly ERA 274)
Units: 3

CI 275. Advanced Instructional Theories and Strategies
Study and application of contemporary research and theory in teaching and instruction. (Formerly CTET275)
Units: 3

CI 276. Understanding Mathematics Instruction and Applied Assessment
This course is designed to prepare teachers to plan instruction based on the assessment of students' mathematical understanding and to teach mathematics using multiple strategies and methods in culturally and linguistically diverse elementary classrooms. Graduate students will examine current research and literature that informs instruction in mathematics and guides assessment. (Dual listed with CI 176).
Units: 3

CI 280T. Advanced Topics
Prerequisite: permission of instructor. Advanced, in-depth analysis of issues and problems in curriculum and instruction; elementary, middle school, and secondary education; technology and computers in education. Emphasis placed on advanced research. (Formerly CTET 280T)
Units: 1-3

CI 282. Philosophy of Education
Seminar on philosophical issues in educational theory and practice and their historical backgrounds. Educational implications of current and historical systematic philosophical outlooks and ideological trends.
Units: 3

CI 284. Seminar in International Education
Analysis of historical, social, and political forces which shape national education endeavors. Emerging international education efforts and organizations. (Formerly ERF 284)
CI 285. Seminar in Advanced Educational Psychology
Prerequisites: Minimum 3 units from the following: CI 152, CI 171, COUN 174, or PSYCH 101, or permission of instructor. Seminar on the psychological foundations of education; nature and characteristics of development, learning processes, and forces which affect educational growth. (Formerly ERA 285)
Units: 3

CI 286. Social Issues in Education
Prerequisites: Minimum 3 units from the following: CI 151, CI 171, a course in Sociology, a course in Anthropology, or permission of instructor. Seminar for analysis of effect on institutional and ideological trends and problems on the role and operation of the school in American society. (Formerly ERA 286)
Units: 3

CI 287. Seminar in History of Educational Thought
Prerequisites: CI 282 or philosophy course or permission of instructor. Seminar on historical foundations of educational theory; growth of thought regarding teaching and learning; relationship of educational theory and practice in the United States. (Formerly ERA 287)
Units: 3

CI 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading. (Formerly CTET 290)
Units: 1-3

CI 298. Project
Prerequisites: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220. A project consists of a significant undertaking appropriate to education such as the development of curricula and instructional materials, educational policy, educational theory, and educational technology. An approved proposal is required for enrollment. Approved for RP grading. (Formerly CTET 298)
Units: 2-4

CI 298A. Project: Curriculum and Instruction
Prerequisites: Advancement to candidacy for the M.A. in Education - Curriculum and Instruction option (MAE - C&I); B average in all MAE coursework, including ERE 220. The project is a significant, original product in the area of curriculum and/or instruction. See MAE - C&I Thesis and Project Guidelines for details. Approved for RP grading.
Units: 1-3

CI 298B. Project: MAT
Prerequisites: Advancement to Candidacy for the Master of Arts in Teaching (MAT) degree; B average on initial 13 units of the MAT, including ERE 243. See Criteria for Thesis and Project. The action research project consists of a significant undertaking appropriate to multicultural, social justice education such as the development and refinement of curricula and instructional materials, educational policy, educational theory, and educational technology. An approval proposal is required for enrollment.
Units: 4

CI 298C. Project Continuation
Pre-requisite: Project CI 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

CI 299A. Thesis: Curriculum and Instruction
Prerequisites: Advancement to candidacy for the M.A. in Education - Curriculum and Instruction option (MAE - C&I); B average in all MAE coursework including ERE 220. The thesis involves a systematic study of a significant problem and demonstrates original, critical, and independent thinking. See MAE - C&I Thesis and Project Guidelines for details. Approved for RP grading.
Units: 1-3

CI 299B. Thesis: MAT
Prerequisites: Advancement to Candidacy for the Master of Arts in Teaching (MAT) degree; B average on the initial 13 units of the MAT, including ERE 243; completion of an acceptable action research thesis proposal. See Criteria for Thesis and Project. Preparation, completion, submission, and defense of acceptable action research thesis for the Master of Arts in Teaching (MAT) degree. See Kremen School of Education and Human Development's graduate program coordinator for school thesis guidelines.
Units: 4

CI 299C. Thesis Continuation
Pre-requisite: Thesis CI 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

CI 380T. Integrating Life Science in the Elementary Classroom
This course combines science theory with hands-on experiments dealing with life science concepts. Teachers in the elementary grades will be provided with opportunities...
to engage their students in relevant learning experiences, while increasing their own content knowledge in the area of life science. In addition, this course provides the elementary educator with the opportunity to meet professional development needs without leaving the classroom. This course is designed to enhance the classroom teachers' ability to teach life science in a meaningful way through utilizing the methods and activities that spark the student's desire to learn. Fun and motivating, the activities cover general botany and biology as well as the human body - bones, muscles, circulatory and respiratory systems, senses and the brain. Many of the activities are perfect for use at home in order to encourage parental involvement in the educational process of their child. This is possible because most of the materials, many of which are included, are easy to find. Teachers will also have the opportunity to locate and explore appropriate learning activities available on the Internet.

Units: 3

CI 380T. Teaching Poetry: A Structured Approach
This course contains poetry units appropriate for use with intermediate and middle grade students (4th-8th). The course manual addresses the writing process, ways of integrating art, music, social studies, and various developmental language skills into the poetry units. An extensive list of website references is provided for teachers who wish to gain more knowledge of this inspirational portion of the language arts program. Teachers will explore sources for finding special poetry for specific occasions, ideas for integrating poetry into the general curriculum, and poetry lesson plans. Additionally, teachers will be able to meet their professional development needs while engaging their students in meaningful activities. Teaching Poetry presents the teacher with a structured approach for involving their students will explore a range of poetic forms including Clerihew, Ballad, Limerick, Haiku, Diamante, Cinquain, and more. Students will engage in collaborative techniques, as they read, write, and share poetry. Teachers will use strategies that are both inspirational and practical as they encourage students to develop poems of their own.

Units: 3

CST 401. MSC Module 1: Curriculum, Instruction, and Intern Teaching in the Elementary School
Prerequisite: admission to CalStateTEACH program. Major emphasis on the foundations of education, teaching and mathematics, and assessment. ($500 course materials fee)

Units: 10
Course Typically Offered: Fall, Spring, Summer

CST 401A. Beginning Curriculum, Instruction, and Supervised Fieldwork in the Elementary School
Major emphasis on instructional planning and reading/language arts. Taken concurrently with CST 444; CSET preparation. ($500 course materials fee)

Units: 7

Course Typically Offered: Fall, Spring, Summer

CST 401B. Curriculum, Instruction and Supervised Fieldwork in the Elementary School
Continuation of CST 401A. Major emphasis on foundations of education, instructional planning, and reading and mathematics instruction and assessment. (No course materials fee)

Units: 3
Course Typically Offered: Fall, Spring, Summer

CST 401F. Multiple Subject Supervised Field Experience
Supervised field experience in elementary school classroom. Taken concurrently with CST 401B. CR/NC grading only.

Units: 3
Course Typically Offered: Fall, Spring, Summer

CST 402. MSC Module 2: Curriculum, Instruction, and Supervised Teaching in the Elementary School
Prerequisites: successful completion of CST 401 and subject matter competency (passage of CSET or subject matter equivalency verified by an academic adviser). Continued work in the foundations of education, teaching, reading, and mathematics. Major emphasis in teaching science, language arts, technology, and assessment. ($500 course materials fee)

Units: 10
Course Typically Offered: Fall, Spring, Summer

CST 403. MSC Module 2: Curriculum, Instruction, and Intern Teaching in the Elementary School
Prerequisite: successful completion of CST 402. Continued work in all curricular areas. Major emphasis in teaching social studies and mathematics, learning theory, and models of discipline. ($500 course materials fee)

Units: 10
Course Typically Offered: Fall, Spring, Summer

CST 404. MSC Module 4: Curriculum, Instruction, and Supervised Teaching in the Elementary School
Prerequisite: successful completion of CST 403. Continued work in all curricular areas. Major emphasis in reading diagnosis and remediation, integrated curriculum, technology, visual and performing arts, and physical education. ($500 course materials fee)

Units: 10
Course Typically Offered: Fall, Spring, Summer

CST 421. Multiple Subject Credential Module 1

Units: 12
CST 421A. Multiple Subject Credential Module 1A
Units: 6
Course Typically Offered: Fall, Spring, Summer

CST 421B. Multiple Subject Credential Module 1B
Units: 6
Course Typically Offered: Fall, Spring, Summer

CST 421S. Multiple Subject Supervised Fieldwork
Supervised early fieldwork participation in an assigned elementary school classroom.
Units: 3

CST 422. Multiple Subject Credential Module 2
Units: 12
Course Typically Offered: Fall, Spring, Summer

CST 422A. Multiple Subject Credential Module 2A
Units: 6
Course Typically Offered: Fall, Spring, Summer

CST 422B. Multiple Subject Credential Module 2B
Curriculum and Instruction in the Elementary School. Major emphases in Language Arts, Reading Diagnosis and Remediation, Educational Technology, and Assessment.
Units: 6
Course Typically Offered: Fall, Spring, Summer

CST 422S. Multiple Subject Supervised Initial Student Teaching
Supervised initial student teaching in an assigned elementary school classroom.
Units: 3

CST 423. Multiple Subject Credential Module 3
Units: 9
Course Typically Offered: Fall, Spring, Summer

CST 423S. Multiple Subject Supervised Student Teaching
Supervised full-day student teaching in an assigned elementary school classroom.
Units: 6
Course Typically Offered: Fall, Spring, Summer

CST 444. CSET Preparation
Prerequisite: admission to CalStateTEACH program. To be taken concurrently with CST 401A: CSET Track. Only for those students who have not passed the CSET and do not have subject matter equivalence. Designed to further basic skills in math, science, language arts, social studies, fine arts, and physical arts. CR/NC grading only.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring, Summer

CTET 280T. Imp Std Sci
Annual Central Valley Science Project's Summer Science Institute for 4th - 9th grade teachers of science.
Units: 1, Repeatable up to 9 units

CTET 380T. Talking to Others Email
Units: 1

CTET 380T. Improving Mathematics Instruction
This is a service course and the numbers of units depends on how many mini-institutes sponsored by the San Joaquin Valley Mathematics Project are attended. All institutes focus on the state math content standards, used and of new math textbooks, and increasing math competency.
Units: 1-5

ERE 153. Educational Statistics
Methods of describing, analyzing, and interpreting data; statistical methods including correlation, regression, t-tests, 1 and 2-way ANOVA designs, and chi-square.
Units: 3
Course Typically Offered: Fall, Spring, Summer

ERE 180T. Topics in Education
Issues and topics in educational foundations; curriculum and instruction; early childhood, elementary, middle school, and
secondary education; pupil personnel services; supervision and administration; child abuse, and computer literacy.

Units: 1-3

ERE 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

ERE 220. Research in Education
Prerequisites: ERE 153. Seminar in education research methodology; library resources; critiquing data collection, analyses, interpretation in research articles; writing research papers; for elementary and secondary teaching, early childhood, reading, administration, counseling, special education, related fields.

Units: 3

ERE 243. Research on Teaching in the Multicultural Classroom: Quantitative and Qualitative Methods
Prerequisite: CI 245. Provides students with a series of modules on quantitative and qualitative research techniques used in action research. Students begin to develop their Action Research Project after reviewing articles, developing mini-research ideas, collecting and analyzing data in the classroom context to improve teaching and learning.

Units: 3

ERE 244. Mixed Methods Research in Diverse Classrooms
Provides students with a series of modules on quantitative and qualitative research techniques used in action research. Students conduct mini-research studies by collecting and analyzing data in the classroom context to improve teaching and learning and to synthesize the results.

Units: 4

ERE 260. Assessment as Learning
Analyze interaction among assessment models, effective instruction, and learning in educational settings. Use educational theory to identify criteria for choosing and integrating alternative assessments including performance, observation/interview, portfolio, curriculum-embedded and self-assessment. Develop assessment items and protocols.

Units: 3

ERE 272. Instructional Planning and Evaluation
Principles and practices of instructional planning, assessment and testing of learning outcomes, performance appraisal and evaluation of teaching; test construction analysis, and grading.

Units: 3

ERE 280T. Advanced Topics in Education
Prerequisite: permission of instructor. Advanced, in-depth analysis of issues and problems in educational foundations; curriculum and instruction; reading; early childhood, elementary, middle school, and secondary education; and computers in education. Emphasis placed on advanced research.

Units: 1-3

ERE 287. Qualitative Research Methods in Education
Theoretical and ethical concepts and various qualitative designs are presented. Students develop researchable questions, reflect on biases, gain field site access, collect several types of qualitative data, code and analyze data, build trustworthiness and credibility, and write rich research stories.

Units: 3

ERE 288. Educational Measurement and Program Evaluation
Prerequisite: ERE 153. Procedures and issues involved in the measurement and evaluation of educational programs; planning, etc. Applications in educational settings are emphasized.

Units: 3

ERE 289. Statistical Modeling
Prerequisites: ERE 153, ERE 220. This course teaches statistical modeling concepts including simple regression, multiple regression, part and partial correlation, effect and dummy coding, linear and curvilinear regression, logistic regression, canonical correlation, and hierarchical linear modeling. Analyzing data and interpreting results are emphasized.

Units: 3

ERE 290. Independent Study
See Academic Placement --Independent Study. Approved for RP grading.

Units: 1-3

ERE 298. Project
Prerequisites: advancement to candidacy for the master's degree; B average on 24 units of the master's program including ERE 220. See [-LINK-]. A project consists of a significant undertaking appropriate to graduate study in education. An approved proposal is required for enrollment. Approved for RP grading.

Units: 4

ERE 298C. Project Continuation
Pre-requisite: Project ERE 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
ERE 299. Thesis
Prerequisites: advancement to candidacy for the master's degree; B average on at least 24 units of the master's program including ERE 220 and completion of an acceptable thesis proposal. See Criteria for Thesis and Project. Preparation, completion, and submission for the master's degree. See the Kremen School of Education and Human Development's graduate programs coordinator for school thesis guidelines. Approved for RP grading.
Units: 4

ERE 299C. Thesis Continuation
Pre-requisite: Thesis ERE 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

EDUCATIONAL LEADERSHIP DOC PGM

EDL 501. Organizational Theory in Complex Organizations
Prerequisites: admission to the program. Seminar. Combines alternatives views or organizational theory with application to the structure of the school; to critical roles played by teachers, principals and other school personnel; and to examine the relationships among strutural elements of schools.
Units: 3

EDL 502. Educational Reform
Prerequisite: admission to the program. Seminar. Examines change in education settings in the context of organizational theory, structure, and culture; change processes; and change leadership strategies and styles. K-12 educational settings and higher education settings are used to test theories and change strategies.
Units: 3

EDL 503. Educational Policy Environments
Prerequisite: admission to the program. Seminar. Determinants of policy in educational organizations and leadership. Analysis of structures used for legal, fiscal and political decisions and conflict management. Role of the educational leader in relation to intergovernmental activities aimed at educational reform.
Units: 3

EDL 504. Advanced Applied Quantitative Methods
Prerequisites: admission to the program or permission of instructor. Seminar. Examines advanced research methodologies and data analysis techniques applicable to education and social science settings. Topics include experimental and quasi-experimental design, advanced statistical techniques, sampling distributions, nonparametric statistics, inference and hypothesis testing. Specific applications to the work of the education leader.
Units: 3

EDL 506. Conceptual Curriculum Perspectives for Educational Leadership
Prerequisites: admission to the program and EDL 201, EDL 202. Seminar. Students will develop the philosophical and analytical skills to examine curriculum theory and practice, including the conceptualization of purposes of the organization of subjects matters, and of the instructional methods.
Units: 3

EDL 507. Applied Qualitative Research Methods
Prerequisite: admission to the program. Seminar. Examines the purpose and nature of qualitative research including current applications in educational settings. Emphasis is directed toward critical analysis of current qualitative studies and will include field-based application.
Units: 3

EDL 508. Theorie of Cross-Cultural Education
Prerequisite: admission to the program. Seminar. Designed to explain and discuss the most relevant theoretical approaches dealing with cross-cultural, multicultural education. As diverse and conflicting perspectives are examined, students will experience the complexity of views and perceptions dealing leaders with multicultural populations coexisting in a pluralistic society.
Units: 3

Prerequisite: Admission to the program. Review of approaches to designing and conducting educational research, including ethical issues. Emphasis on reading and evaluating research literature, and designing research projects. Psychometric theory, validity and reliability of tests, professional testing standards, hands-on experience with test evaluation are included.
Units: 3

EDL 510. Field-based Research Practicum in Organizational Settings
Prerequisites: admission to the program, EDL 201, EDL 202, EDL 203, EDL 204, EDL 205, EDL 206, EDL 207, EDL 208, and EDL 211, and permission of the director. Engages students in studies relevant to field settings. Includes collecting and analyzing both qualitative and quantitative data related to improving educational practice and/or solving school problems. Expected to relate to prospective dissertation topic and proposal possibilities.
EDL 511. Educational Evaluation, Assessment, and Planning
Prerequisite: admission to the program. Examines assessment practices, planning strategies, and evaluation processes in K-12 and higher education settings. Addresses current issues and trends in the field of education related to school accountability. (Formerly EDL 280T)
Units: 3

EDL 520. School Leadership for Reading Instruction
Students analyze forces driving reading/language arts mandates and their impact on the implementation of reading curricula. Using philosophical and corporate underpinnings of the "Reading Wars" students discover the praxis between theory, research, and practice.
Units: 3

EDL 521. Human Resource Leadership in Schools
Application of Human Resource Management Theory, empirical findings, and best practices to school leadership. HR theories and practices including recruitment, staffing, motivation, performance management, and development are examined emphasizing the strategic role of HR in enhancing organizational effectiveness.
Units: 3

Develops advanced skills to effectively manage internal and external resources within the school setting. The course provides an overview for leveraging external resources, obtaining grants, developing external partners, and examining issues and studies related to financing public education.
Units: 3

EDL 524. School Law
Examination of Federal Law, California Ed. Code, California Code of Regulation, and program implementation. Freedom of expression, separation of church and state, personnel law, liability, governance requirements, and special education are covered.
Units: 3

EDL 540. Resources and Fiscal Planning for Higher Education
Covers how resource allocation is determined in a Higher Education system structure. Approaches to budget development are examined using knowledge of traditional and nontraditional financial resources available to colleges, which are a major strategic aspect of higher educational financial planning.
Units: 3

EDL 551. Organizational Theory and Leadership in Comp
Students develop skills to create action plans for organizational change, reform, and renewal by analyzing educational organizations, diagnosing organizational needs, and identifying institutional challenges and contexts.
Units: 3

EDL 552. Educational Reform
Examines changes in educational settings in the context of: organization theory, structure and culture; change processes; and change leadership strategies and styles, K-12 educational settings and higher education settings are used to test theories and change strategies.
Units: 3

EDL 553. Educational Policy Environments
Determinants of policy in educational organizations and leadership. Analysis of structures used for legal, fiscal and political decisions and conflict management. Role of the educational leader in relation to intergovernmental activities aimed at educational reform.
Units: 3

EDL 554. Applied Quantitive Research Methods
Examines advanced research methodologies and data analysis techniques applicable to education and social science settings. Topics include experimental and quasi-experimental design, statistical techniques, sampling distributions, nonparametric statistics, inference and hypothesis testing with applications to the work of the education teacher.
Units: 3

EDL 556. Conceptual Curriculum Perspectives for Education
Examines the socio-political context of curriculum and its historical development. Focuses on educational theories and philosophies, instructional theories and practices, the influences of technology on curriculum, and the assessment of teaching and learning.
Units: 3

EDL 557. Applied Qualitative Research Methods
Examines the purpose and nature of qualitative research including current applications in educational settings. Emphasis is directed toward critical analysis of current qualitative studies and will include field-based and online applications. Fieldwork component is included in this course.
Units: 3

EDL 558. Theories of Cross-Cultural Education
Students develop skills to create action plans for organizational change, reform, and renewal by analyzing educational organizations, diagnosing organizational needs, and identifying institutional challenges and contexts.
Units: 3

EDL 559. Applied Research and Measurement in Education
Review of approaches to designing and conducting educational research, including ethical issues. Emphasis on reading and evaluating research literature and designing research projects. Includes psychometric theory, validity and reliability tests, professional testing standards, and hands-on experience with test evaluation.
Units: 3

EDL 561. Educational Assessment, Evaluation and Planning
Examines assessment practices, planning strategies, and evaluation processes in P-12 and higher education settings. Addresses current issues and trends in the field of education related to school accountability. Contains fieldwork/application component.
Units: 3

EDL 580T. Topics in Educational Leadership
Prerequisites: admission to the program, EDL 201, EDL 202, EDL 203, EDL 204, EDL 205, EDL 206, EDL 207, EDL 208, and EDL 211, and permission of the director. Topics and issues in educational leadership in the areas of organizational studies, curriculum, instruction and supervision, assessment and evaluation, and sociocultural studies. Analysis of research findings and an emphasis on the relationship of theory to practice.
Units: 1-3

EDL 580T. Student Development Theory
This course is an overview of the most important student development theories and related research that gives insight into effectively working with students at various levels of growth. Students will learn to critically analyze and evaluate theories for inclusiveness, relevance, and applicability for diverse populations. (Offered Spring 2020)
Units: 3

EDL 580T. Leadership in the Digital Age
This course focuses on effective leadership skills and competencies for leading in the digital age. Issues of social media, digital presences and digital literacy will be addressed. Emerging research about best practices for leaders in K-12 and Higher Education will be reviewed. Students will be exposed to the latest digital tools for education. (Offered Spring 2020)
Units: 3

EDL 580T. Executive Leadership
This is the culminating course in the Ed.D. Program in Educational Leadership. The purpose of this course is to engage students during the final semester of their program of study. Course modules offer students the opportunity to interact with executive leaders across educational sectors. (Offered Spring 2020)
Units: 3

EDL 580T. Writing in Academia
This course is intended to explore the world of writing for academia and focuses on the first three chapters of the dissertation writing process. (Offered Spring 2020)
Units: 3

EDL 580T. Critical Qualitative Research Methods Seminar
This seminar will discuss the foundation, methodology, and methods of qualitative critical research methodologies. The course will require students to have a topic of interest to adopt and apply varying critical methodologies (e.g. Critical Race Theory, Poststructuralism, Critical Discourse Analysis, etc.) (Offered Spring 2020)
Units: 3

EDL 580T. Leaders and Leadership
During this course attention will be focused on the following questions: What is leadership? How does the research literature define leadership generally? Roles leadership play in every day practice? Changes in leadership? (Offered Fall 2019 and Spring 2020)
Units: 3

EDL 590. Individual Study
Prerequisites: admission to the program, EDL 201, EDL 202, EDL 203, EDL 204, EDL 205, EDL 206, EDL 207, EDL 208, and EDL 211, and permission of the director. Research for individual doctoral graduate students. CR/NC grading only.
Units: 1-18

EDL 599. Dissertation
Prerequisites: advancement to candidacy for the Doctorate in Education and a minimum GPA of 3.0. Submission of approved dissertation. See Criteria for Dissertation. CR/NC grading only.
Units: 0-12

EDL 599C. Dissertation Continuation
Pre-requisite: Thesis EDL 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0
ELECT & COMPUTER ENGINEERING

ECE 1. Introduction to Electrical and Computer Engineering
Introduction to electrical and computer engineering. Orientation to electrical and computer engineering via hands-on exercises and projects; introduction to circuits, components, instrumentation, and electronic prototyping; computer productivity tools; hardware and software trouble shooting. (3 lab hours)
Units: 1
Course Typically Offered: Fall, Spring, Summer

ECE 71. Engineering Computations
Prerequisite: Math 75 or concurrently. Use of C programming language in engineering analysis and design. A systematic development in program structure, specification, documentation, testing, and debugging.
Units: 3
Course Typically Offered: Fall, Spring

ECE 72. Introduction to Electrical and Computer Engineering Tools
Prerequisites: ECE 71 or CSCI 40. Introduction to engineering applications; use of Matlab software in analysis and synthesis, basic commands, data arrays, plotting and data presentation, data transfer, computation with loops, iterative solutions, integration with C programming, and technical problem solving.
Units: 2
Course Typically Offered: Fall, Spring

ECE 81. Computer Algorithms and Data Structures
Pre-requisite: ECE71. IDE based Object-Oriented Programming in C++ using pointers, dynamic vectors, structures, classes, composition, overloading, templates, inheritance, separate compilation, namespaces, and the Standard Template Library. Implementation of searching/sorting algorithms, recursion, data structures, linked lists, stacks, queues, heaps, trees, graphs, and hashing.
Units: 4
Course Typically Offered: Fall, Spring

ECE 85. Digital Logic Design
Pre-requisites: ECE 1 and MATH 75. Discrete mathematics, logic, and Boolean algebra. Number systems and binary arithmetic, combinatorial logic and minimization techniques. Analysis and design of combinatorial circuits using logic gates, multiplexers, decoders, and PLD's. Flipflops, multivibrators, registers, and counters. Introduction to synchronous sequential circuits and state machines.
Units: 3

ECE 85L. Digital Logic Design Laboratory
Prerequisite: ECE 85 or concurrently. Usage, design, and implementation techniques for combinational and sequential circuits. Experiments utilizing logic gates, Karnaugh maps, multiplexers, decoders, programmable logic devices, latches, flipflops, counters and shift registers. Combinational and state machine design projects. Computer Assisted Engineering (CAE). (3 lab hours)
Units: 1
Course Typically Offered: Fall, Spring

ECE 90. Principles of Electrical Circuits
Prerequisites: MATH 77 or concurrently, PHYS 4B. Direct-current circuit analysis; circuit theorems; transient phenomena in RL and RC circuits, introduction to operational amplifiers, phasor concept; AC steady-state circuit analysis, sinusoidal steady-state response; power and RMS calculations in single-phase alternating-current circuits; principles of electrical instruments; computer solutions circuit simulation using Spice or other contemporary software tools.
Units: 3
Course Typically Offered: Fall, Spring

ECE 90L. Principles of Electrical Circuits Laboratory
Prerequisite: ECE 90 or concurrently, Phys 4BL. Experiments on direct transient, and single phase alternating current circuits. Use of basic electrical instruments, development of laboratory techniques, and verification of basic circuit laws and principles. (3 lab hours)
Units: 1
Course Typically Offered: Fall, Spring

ECE 91. Introduction to Electrical Engineering
Prerequisites: PHYS 4B; MATH 76. (No credit given for ECE 91 if taken after ECE 90). Direct current circuit analysis, transient and AC steady state circuit analysis, basic electronics, diodes, transistors, digital systems, digital logic circuit, simple microprocessors, DC and AC machines.
Units: 3
Course Typically Offered: Fall, Spring

ECE 91L. Introduction to Electrical Engineering Laboratory
Prerequisites: ECE 91 or concurrently. Experiments on direct and alternating current circuits, basic electronics, digital logic circuits, and electric machines.
Units: 1
Course Typically Offered: Fall, Spring

ECE 102. Advanced Circuit Analysis
Prerequisites: ECE 72, (or concurrently), ECE 90, MATH 81 or ENGR 101. Single and polyphase AC circuits, transfer functions, mutual inductance, transformers, two-port circuits,
pole-zero analysis, Bode plots, stability concepts, circuit response to periodic inputs, Laplace solution techniques, frequency response, passive and active circuits, design and circuit simulation tools.

Units: 3
Course Typically Offered: Fall

ECE 103. Professional Development Skills
Contemporary issues in electrical and computer engineering; ethics in engineering; leadership and professional skills important for a successful career; problem formulation and solving; engineering and the society.

Units: 3
Course Typically Offered: Fall

ECE 106. Switching Theory and Logical Design
Prerequisites: ECE 85 or equivalent. Analysis and design of sequential digital circuits; state machine analysis; and design, derivation of state graphs and tables for Mealy and Moore sequential machine; state minimization and assignment techniques; one-hot state assignment; algorithmic state machine and SM Charts, control circuit design for arithmetic operations.

Units: 3
Course Typically Offered: Spring

ECE 107. Digital Signal Processing
Prerequisites: ECE 124. Time and frequency domain analysis of discrete time signals and systems, digital processing of continuous time signals, FIR, IIR, lattice filter structures, filter design, hardware implementation issues, computer aided design and evaluation.

Units: 3
Course Typically Offered: Spring

ECE 114. Physical Electronics
Prerequisites: PHYS 4C, ECE 128 or concurrently. Semiconductor fundamentals, crystal structures and semiconductor materials, element quantum mechanics, energy bands and charge carriers, statistics. Integrated circuits and modern fabrication technology for discrete and intergrated devices. Operation principles of discrete devices; PN junction diode, BJT, MOS FET, and JFET, and optoelectronic devices.

Units: 3

ECE 115. Computer Organization
Prerequisites: ECE 85 and either CSCI 40 or ECE 71. Structural organization, hardware architecture and design of digital computer systems; binary representation of data; CPU, memory and I/O organization; register transfer, micro-operations and microprogramming; hardware/software design trade-offs. Introduction to RISC architecture and memory organization.

Units: 3

Course Typically Offered: Spring

ECE 118. Microprocessor Architecture and Programming
Prerequisite: ECE 85 and either CSCI 40 or ECE 71. Introduction to microprocessor software, hardware and interfacing. The emphasis is on learning assembly language programming, microprocessor architecture and its associated peripherals. G.E. Integration ID.

Units: 3
Course Typically Offered: Fall, Spring

GE Area: ID

ECE 118L. Microcontroller Laboratory
Prerequisite: ECE 85L. Prerequisite or corequisite: ECE 118. Lab is intended to solidify and build upon ECE 118 class. Experiments on microcontroller and its associated peripheral I/O subsystems. Hands-on program controlled I/O, timer, parallel and serial I/O communications, A/D and subsystem interfacing. Design projects. (3 lab hours) (Formerly ECE 120L)

Units: 1
Course Typically Offered: Fall, Spring

ECE 119L. Programmable Logic Controllers
Prerequisite: ECE 118. Hands-on experience in topics in micro controllers and automation processes. (3 lab hours)

Units: 1

ECE 121. Electromechanical Systems and Energy Conversion
Prerequisites: ECE 72 or ME 2; ECE 90 or ECE 91.. Principles and applications of direct- and alternating-current machinery and other energy-conversion apparatus. Introduction to power electronics and machine drives.

Units: 3

ECE 121L. Electromechanical Systems and Energy Conversion Laboratory
Prerequisites: ECE 90L or ECE 91L, and ECE 121 or concurrently. Experiments and computations on direct- and alternating-current machinery and on other energy-conversion devices and associated apparatus. (3 lab hours)

Units: 1
Course Typically Offered: Spring

ECE 122L. Digital Systems Lab
Prerequisites: ECE 118, ECE 118L, Senior standing. Hands-on experience in digital systems and related emerging technologies (3 lab hours)

Units: 1
Course Typically Offered: Fall, Spring

**ECE 124. Signal and Systems**
Prerequisites: ECE 72, ECE 90; MATH 81 or ENGR 101. Modeling and analysis of discrete and continuous linear systems and signals. Fourier transforms, and Fourier series, and differential equations, time and frequency response; system analysis via Laplace-and Z-transforms; state-equations and linear algebra. Stability analysis. Engineering applications and simulation using Matlab.

Units: 3
Course Typically Offered: Fall, Spring

**ECE 124L. Signal and Systems Lab**
Prerequisites: ECE 90L, ECE 124 (or concurrent enrollment). Analysis, mathematical modeling and simulation via MATLAB and generation of signals and system implementations using TIMS/EMONA hardware of discrete time and continuous time signals and linear systems.

Units: 1

**ECE 125. Probabilistic Engineering Systems Analysis**
Prerequisites: ECE 124. Probability theory, single and multiple discrete and continuous random variables and their characterization, transformations of random variables, principles of random variables, principles of random sampling, estimation theory, engineering decision principles, data analysis, reliability theory, applications to quality control in manufacturing process systems.

Units: 3
Course Typically Offered: Spring

**ECE 126. Electromagnetic Theory and Applications I**
Prerequisite: Math 81 or concurrently, ECE 90. Electrostatics; boundary value problems; magnetostatics; time-varying fields; Maxwell's equations. Transmission of electromagnetic energy.

Units: 3
Course Typically Offered: Fall, Spring

**ECE 128. Electronics I**
Prerequisite: ECE 90. Characteristics and properties of solid state devices; theory and analysis of electronic circuits; power supply design; device and circuit models; single- and multi-stage amplifier analysis and design; analysis of digital circuits; circuit stimulation using Spice or other contemporary software tools.

Units: 3
Course Typically Offered: Fall, Spring

**ECE 128L. Electronics I Laboratory**
Prerequisites: ECE 90L and ECE 128 or concurrently. Experiments on static and dynamic characteristics of solid state devices in analog and digital electronic circuits; computer solutions as appropriate. (3 lab hours)

Units: 1
Course Typically Offered: Fall, Spring

**ECE 132. Design of Digital Systems**
Prerequisites: ECE 118. Design of Digital Systems utilizing microprocessors; application of assembly programming language to input/output programming, interrupts and traps, DMA and memory management.

Units: 3

**ECE 134. Analog and Digital Communication Engineering**
Prerequisite: ECE 124; and ECE 125 (may be taken concurrently). Mathematical modeling of signals and systems, linear and nonlinear modulation theory, demodulators, link analysis and design, phase-lock loops, sampling theory and signal reconstruction, digitization techniques, basic digital information transmission, noise models, effect of noise on communication systems, computer simulations.

Units: 3

**ECE 134L. Communication Engineering Lab**
Prerequisite: ECE 134 or concurrently; senior standing in ECE. Experiments on communication signals and systems including modulation and demodulation, receiver architectures, operation of phase-lock loops, and use of eye diagrams in digital modulation schemes. (3 lab hours).

Units: 1

**ECE 135. Wireless Communication Systems**
Prerequisite: ECE 125, ECE 134. Principles of digital signal transmission and reception; binary, M-ary, and hybrid digital modulation techniques; channel and receiver front-end noise effects; statistical performance receiver analysis; source coding; block and convolutional channel coding; block decoding and VDA, channel fading and multipath; equalization; cellular systems; Spread Spectrum and CDMA; computer simulations.

Units: 3

**ECE 136. Electromagnetic Theory and Applications II**
Prerequisite: ECE 126. Plane wave propagation and reflection; waveguides; strip-lines and microstrip impedance matching, microwave circuits and S-parameters; amplifier power gain and stability, amplifier design, antenna analysis and design; methods for computer solution.

Units: 3

**ECE 136L. Electromagnetic Theory and Applications**
Prerequisite: ECE 136 or concurrently. Experiments on the transmission of electromagnetic energy through wires,
waveguides, and space; filters and antennas; impedance matching; cross-over networks; location of faults on lines. (3 lab hours)

Units: 1

ECE 138. Electronics II
Prerequisites: ECE 102, ECE 128. Analysis and design of high frequency amplifiers; high frequency models of transistors; operational amplifiers and applications; feedback amplifiers; oscillators, modulators, bandpass amplifiers, and demodulators for communications. Emphasis on modern design methods.

Units: 3
Course Typically Offered: Spring

ECE 138L. Electronics II Laboratory
ECE 128L and ECE 138 or concurrently. Design oriented experiments to study the characteristics, limitations, and design trade-offs of circuits from ECE 138. Emphasis on circuit and system design to meet preestablished specifications. Design project included; computer solutions as appropriate. (3 lab hours)

Units: 1
Course Typically Offered: Spring

ECE 140. VLSI System Design
Prerequisites: ECE 118, ECE 128. Emphasis on the design of a full custom VLSI system using contemporary CAD tools. Digital circuit design, CMOS circuit and layout principles, fabrication principles, physical and electrical design rules, control and data path design techniques, system timing, design verification, simulation and testing.

Units: 3

ECE 141. Algorithmic Computations
Prerequisite: CSCI 41. Advanced data structures and analysis of data structure and algorithm performance. Sorting, searching, hashing, and advanced tree structures and algorithms, particularly dynamic, greedy, and graph algorithms. Course projects require advanced problem solving, design, and implementation skills.

Units: 3

ECE 146. Computer Networks
Prerequisites: ECE 118 or CSCI 113. Analysis, theory, and modeling of modern computer networks; layered architecture of computer network protocols; flow and error control; circuit and packet switching; routing and congestion control; local area networks; Internet protocols; quantitative performance analysis; probability, random process, and queuing theory.

Units: 3

ECE 148. Analysis and Design of Digital Circuits
Prerequisites: ECE 85, ECE 128. Analysis and design of solid state digital circuits utilizing various logic families suitable for integration: TTL, ECL, NMOS, CMOS; logic gates; multivibrators; ROM, PROM, EPROM, and EEPROM; SRAM and DRAM.

Units: 3

ECE 151. Electrical Power Systems
Prerequisites: ECE 90. Power system networks and equipment, power flow, symmetrical components, short circuits analysis, introduction to economic dispatching and stability analysis, applications and use of software in power system analysis.

Units: 3

ECE 152. Power Systems Protection and Control
Prerequisites: ECE 151 and ECE 155 or concurrent. Transmission and distribution systems, protection and coordination, stability analysis, voltage and frequency control, system modeling and computer simulation.

Units: 3

ECE 153. Power Electronics
Prerequisites: ECE 124 and ECE 128. Analysis and design of power conversion devices; AC-DC converters (diode rectification and phase control devices); DC-DC converters (Buck/Boost); DC-AC inverters; continuous and discontinuous modes of operation; performance evaluation; power factor correction; signal distortion; efficiency analysis; applications; hands-on experiences.

Units: 3

ECE 155. Control Systems
Prerequisites: ECE 124. Analysis, design, and synthesis of linear feedback control systems. Mathematical modeling and performance evaluation; state variables; frequency domain analysis and design methodologies. Applications and utilization of Matlab in analysis and design.

Units: 3
Course Typically Offered: Spring

ECE 155L. Control Systems Lab
Prerequisites: ECE 155 or concurrently. Hands-on experience in topics in instrumentation and control systems. (3 lab hours)

Units: 1

ECE 156. Fundamentals of Cryptography and Computer Network Security
Prerequisites: ECE 81. Corequisites: ECE 125, ECE 146. Traditional ciphers; background of number theory and finite fields; symmetric key cryptography (block ciphers, stream ciphers, message authentication codes); asymmetric key cryptography (RSA, ElGamal, digital signature, Diffie-Hellman key exchange); cryptanalysis; security protocols (IPSec and TLS/SSL); other related topics.

Units: 3
Course Typically Offered: Spring

ECE 162. Analog Integrated Circuits and Applications
Prerequisite: ECE 138. Analysis of monolithic operational amplifiers; case studies; Widlar and Wilson current sources; linear and non-linear applications; multipliers, phase-lock loops, phase detectors; higher order active filters; all-pass equalizers; D/A adm A/D converters; oscillators, function generators; mixers, modulators, regulators; system design.
Units: 3

ECE 166. Microwave Devices and Circuits Design
Prerequisite: ECE 102, ECE 128, ECE 136. Microwave theory and techniques: slow-wave structures, S parameters, and microwave devices, including solid-state devices such as Gunn, IMPATT, TRAPATT, and BARITT diodes, and vacuum tubes such as klystrons, reflex klystrons, traveling-wave tubes, magnetrons, and gyrotrons.
Units: 3

ECE 168. Microwave Amplifier and Oscillator Design
Prerequisite: ECE 136. Small-signal and large-signal amplifier designs such as high-gain, high -power, low-noise, narrow-band and broadband amplifiers; microwave oscillator designs such as high-power, broadband, Gunn diode and IMPATT oscillator designs; power combining and dividing techniques; reflection amplifier design and microwave measurements.
Units: 3

ECE 171. Quantum Electronics
Prerequisite: ECE 128 and PHYS 4C. Review of wave properties; cavity mode theory; radiation laws; theory and morphology of lasers; laser and fiber-optic communications; designs of optical communication systems and components.
Units: 3

ECE 172. Fundamentals of Machine Learning
Prerequisites: ECE 72 and ECE 125. Linear regression, SSR, gradient descent, overfitting and complexity; training; validation, test data classification problems, decision boundaries, nearest neighbor methods, probability and classification. Bayes optimal decisions, linear classifiers, neural networks, decision tree, ensemble methods, clustering, supervised and unsupervised learning, PCA, SVM.
Units: 3

ECE 173. Robotics Fundamentals
Prerequisites: ECE 72 or ME 2; ECE 90/90L; ECE 85/85L or ECE 91/91L Introduction to industrial and mobile robots; forward and inverse kinematics; trajectory planning; sensors; micro controllers; laboratory experiments
Units: 3

ECE 174. Advanced Computer Architecture
Prerequisites: ECE 118. Quantitative and evaluation of modern computing systems; advanced topics: Superscalar organization; multi-core and multi-threading; parallel algorithm; interconnection network; cache hierarchies and cache coherence protocol and benchmark; branch predication and trace cache mechanism; multiprocessor and multiprocessor software
Units: 3
Course Typically Offered: Fall

ECE 176. Advanced Digital Logic Design
Prerequisites: ECE 106. Apply modern EDA tools and Verilog-HDL for behavioral and RTL modeling of digital logic circuits. Cover the systematic design of advanced digital systems using FPGA design flow, including functional verification, test-bench generation, timing analysis and design verification of combinational and sequential circuits including finite state machine for datapath control.
Units: 3
Course Typically Offered: Fall

ECE 178. Embedded Systems
Prerequisites: ECE 118L, ECE 176. Principles of real-time computing embedded systems, hardware/software peripherals interface, design applications using RISC processors, real-time operating system and project activities.
Units: 4
Course Typically Offered: Spring

ECE 186A. Senior Design I
Prerequisites: 30 units of ECE (see advising notes) or permission of instructor; university writing requirement (or concurrently). Design projects in electrical and computer engineering.
Units: 1
Course Typically Offered: Fall, Spring

ECE 186B. Senior Design II
Prerequisite: ECE 186A and university writing requirement with a letter grade of C or better, or passing the UDWE. Completion of approved design projects in Electrical and Computer Engineering. Project presentation and documentation that requires demonstration of awareness and incorporation of engineering standards in the design of a system that meets realistic constraints. Problem solving, written communication and application of critical thinking skills.
Units: 3
Course Typically Offered: Fall, Spring

ECE 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

ECE 191T. Topics in Electrical and Computer Engineering
Prerequisite: permission of instructor. Investigation of selected electrical engineering subjects not in current courses.
Units: 1-3

ECE 191T. Cloud and Cyber Security
Critical information assets and cyber security, cloud security, operating systems security, database security, network security, e-commerce security, security risks, encryption and cryptography, security management, security models. (Offered Spring 2020)
Units: 3

ECE 193I. Electrical and Computer Engineering Cooperative Internship
Prerequisite: Permission of adviser. Engineering practice in an industrial or governmental installation. Each cooperative experience usually spans a summer-fall or spring-summer interval. One semester or summer internships are also possible. This course cannot be used to meet graduation requirements. CR/NC grading only.
Units: 1-6
Course Typically Offered: Fall, Spring

ECE 224. Advanced Signals and Systems
Prerequisites: ECE 124 or equivalent. Theory of continuous time (CT) and discrete time (DT) multidimensional systems; state variable representations; systems state equation solution; Lyapunov and input-output stability, controllability, observability, and realizability, feedback systems. System simulations using MATLAB.
Units: 3

ECE 230. Nonlinear Control Systems
Prerequisite: ECE 155 or permission of instructor. Dynamic systems modeling and analysis; stability; sliding mode control; fuzzy logic control; and introduction to relevant topics. (Formerly EE 291T)
Units: 3

ECE 231. Digital Control Systems
Prerequisite: ECE 155 or permission of instructor. Discrete Time Feedback systems modeling and analysis; stability; digital controller design; digital transformation of analog controllers; implementation techniques, case studies. (Formerly EE 291T)
Units: 3

ECE 232. Optimal Control Systems
Prerequisite: ECE 155 or ENGR 210. Two-point boundary value problems; linear quadratic regulators; minimum-time design; output-feedback design; robust design; observers; filters and dynamic regulators; multivariable dynamic compensator design (3 hrs lecture)
Units: 3

ECE 240. VLSI Circuits and Systems
Review of CMOS logic circuits; CMOS circuit analysis; interconnect modeling; dynamic logic; timing and clocking strategies; datapath component design; test and verification strategies; ASIC Design Methodologies.
Units: 3

ECE 241. Applied Electromagnetics
Prerequisite: ECE 136. Maxwell's equations; plane wave propagation; inhomogeneous wave equation; Green's function; antenna analysis; Huygen's principle; induced current; waveguides; radar cross section.
Units: 3

ECE 242. Digital Systems Testing and Testable Design
Introduction to VLSI testing, VLSI test process and automatic test equipment, test economic, faults and fault modeling, logic and fault simulation, testability measures, delay test, design for testability, built-in self-test, boundary scan, and JTAG.
Units: 3

ECE 243. Modern Methods in Synchronous Sequential Design
Prerequisite: ECE 172 or permission of coordinator. Synchronous machine design with PLDs and FPGAs; algorithmic state machines; incompletely specified machines; maximum compatibility classes; partitioning of sequential machines; state merging and state splitting.
Units: 3

ECE 245. Communications Engineering
Prerequisite: ECE 134 or equivalent; ENGR 206. Modulation theory; statistical properties of information signals and noise; binary and M-ary modulation schemes and receivers for digital and analog messages; performances in the presence of noise; transmission over bandlimited channels and intersymbol interference; vector space representations; communication design considerations.
Units: 3

ECE 247. Modern Semiconductor Devices
Prerequisite: ECE 114 or permission of coordinator. Crystal structures and elastic constants; lattice energy and vibrations; thermal and dielectric properties of solids; ferroelectric and
magnetic properties of crystals; free electron model of metals; quantum statistics distributions; band theory; semiconductor crystals; superconductivity; photoconductivity and luminescence; dislocations.

Units: 3

ECE 249. Advanced Communications Engineering
Prerequisite: ECE 134 or equivalent; ENGR 206. Information theory; source coding; channel coding theorems; models for communication channels; theory of error control coding; block and convolutional codes; decoding algorithms; coding for bandlimited, noisy and distorting channels; performance improvements of coded communication systems; design applications to wireless systems.

Units: 3

ECE 251. Antennas and Propagation
Wave equation, plane waves, metallic boundary conditions; wave equation for the potentials Lorentz transformation; covariant formulation of electrodynamics; radiation from a moving charge; scattering and dispersion; Hamiltonian formulation of Maxwell's equations.

Units: 3

ECE 252. Advanced Power Electronics
Prerequisite: ECE 153 or permission of instructor. Advanced topics in power electronics including rectifiers, inverters as well as multi-level inverters, resonant and soft-switching converters, advanced switching techniques, power converter stability, and control issues in various applications.

Units: 3

ECE 253. Power Systems Dynamics
Prerequisites: ECE 151, ECE 155. Electromechanical dynamics under small and large disturbances; voltage stability; frequency variations; stability analysis and enhancement; advanced power system modeling; model reduction techniques; steady state stability of multi-machine systems; computer simulation; voltage and frequency control; electric power systems quality. (3 lecture hours)

Units: 3

ECE 255. Digital Signal Processing
Prerequisite: ECE 107 and ENGR 206, or equivalent. Discrete time signals and systems in time and frequency domain; random sequences and inputs to linear systems; correlation and power spectral density; digital filter design; lattice filters; estimation of signal parameters; spectral estimation; adaptive and optimal systems; simulation using MATLAB.

Units: 3

ECE 257. Optical Communications and Lasers
Quantum measure of light, linear, elliptical, and circular polarization; optical waveguide equations, ray and mode theory; source and detector characteristics; attenuation, dispersion, and noise effects; correlation, spectral density, noise equivalent bandwidth, coding, modulation, multiplexing techniques; systems and link design.

Units: 3

ECE 259. Radar System Design
The nature and history of radar, the radar equation, PRF and range considerations, CW and FM radars. MTI and pulse-Doppler radars, tracking radars. Radar power generation, antenna types and design considerations, receivers, detection of signals in noise, extraction of information from radar signals, propagation of radar wave, the effects of clutter, weather and interference. Examples of radar system engineering and design.

Units: 3

ECE 274. High Performance Computer Architecture
Advanced hardware design features of modern high performance microprocessors and computer systems. Topics include: instruction level parallelism; superscalar and superpipelined data path design and performance; dynamic and static scheduling; VLIW; hardware/software interface; memory hierarchies and cache coherence; multi processor structures and interconnection networks.

Units: 3

ECE 278. Embedded System Design
Prerequisite: Graduate standing. Embedded system design and development. High-level design tools, interface, and real-time embedded system programming and interface techniques.

Units: 3

ECE 290. Independent Study
Prerequisite: graduate status in engineering or permission of instructor. Approved for RP grading.

Units: 1-3

ECE 291T. Topics in Electrical Engineering
Prerequisite: graduate status in engineering or permission of instructor. Selected electrical engineering subjects not in current courses.

Units: 1-3

ECE 291T. Advanced Cloud Cyber Security
Critical information assets and cyber security, cloud security, operating systems security, database security, network security, e-commerce security, security risks, encryption and cryptography, security management, security models. (Offered Spring 2020)

Units: 3
ECE 298. Project
Prerequisite: graduate status in engineering. See Criteria for Thesis and Project. Independent investigation of advanced character such as analysis and/or design of special engineering systems or projects; critical review of state-of-the-art special topics; as the culminating requirement of the master's degree. Abstract required. Approved for RP grading.
Units: 3

ECE 298C. Project Continuation
Pre-requisite: Project ECE 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

ECE 299. Thesis
Prerequisite: see [-LINK-]. Preparation, completion, and submission of an acceptable thesis for master's degree. Approved for RP grading.
Units: 3-6

ECE 299C. Thesis Continuation
Pre-requisite: Thesis ECE 299. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

ENGINEERING INTERDISCIPLINARY

ENGR 1H. Honors Seminar
Seminar course for first semester freshman LCOE Honors Program students. Lectures, guests, discussions. Leadership training in engineering/construction management professions. Topics: interactive leadership, decision making, technical innovation, global community, ethics, professional service. Emphasis: leadership awareness, leadership training/skill building.
Units: 1

ENGR 2H. Honors Project
Units: 1

ENGR 3H. Honors Seminar II
Seminar for first semester, sophomore LCOE Honors students. Lectures, guests, discussions, workshops. Leadership training in engineering/construction management professions. Topics: proactive/interactive leadership, decision making, goal setting, project planning, leadership attitude, team building, innovation, ethics. Emphasis: leadership awareness/training/skill building, goal setting, teamwork.
Units: 1

ENGR 4H. Honors Project II
Project for second semester, sophomore LCOE Honors students. Lectures, guests, discussions, experiential service-learning professional projects in engineering/construction management. Topics: teamwork, leadership, professional engagement, technical applications, human factors, innovation/entrepreneurship, ethical behavior, pro-bono service. Emphasis: hands-on professional service projects.
Units: 1

ENGR 11. Engineering Applications
Open to qualified high school juniors and seniors only. Selected topics in engineering that serve as an introduction to the field of engineering and technology. (Formerly ENGR 1T)
Units: 1-4

ENGR 101. Applied Engineering Analysis I
Covers selected topics in mathematical analysis, with emphasis on applications to engineering problems. Ordinary differential equations, the Laplace transformation, matrices and determinants, Fourier series and integrals, partial differential equations.
Units: 3

ENGR 102. Applied Engineering Analysis II
Covers selected topics in mathematical analysis with emphasis on applications to engineering problems. Vector Analysis, line and surface integrals, complex variables and integrals, conformal mapping, series, residues, potential theory, special functions.
Units: 3

ENGR 105W. Engineering and Entrepreneurship
Prerequisites: Satisfactory completion of ENGL 1, junior standing. Preparation of resumes, letters of transmittal, technical reports, research proposals, progress reports, business plans, oral presentations, using effective writing techniques, in the process of commercializing a technology/process. Meets upper division writing skills requirement for graduation. Formerly ME 191T.
Units: 3
ENGR 110. Engineering Literacy and Pedagogy
Orientation to engineering; engineering practice, communications, and design process; engineering history and implications in society; technical documentation and resources; project selection criteria and sustainability.
Units: 3

ENGR 116. Fluid Mechanics
Prerequisites: CE 20, MATH 81 (or ENGR 101), ME 112 (or concurrently). Fundamentals of fluid mechanics as applied to engineering problems.
Units: 3

ENGR 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

ENGR 191T. Topic in Engr
Prerequisite: permission of instructor. Investigation of selected engineering subjects not in current courses.
Units: 1-3

ENGR 200. Seminar in Engineering
Orientation to the graduate program, exposure to various areas within Electrical Engineering and Mechanical Engineering, introduction to research methods, discussion of project and thesis topics.
Units: 1

ENGR 201. Systems Modeling and Realization
Prerequisites: Graduate Standing. Advanced software and hardware engineering tools and their applications; instrumentation and experimental measurements; transducers; analog and digital signal conditioning; instrumentation amplifiers; signal reconstruction; actuators; dynamic systems modeling; realization of models; spectrum analysis; real-time computations; data analysis. (2 lecture, 2 lab hours)
Units: 3

ENGR 202. Applied Engineering Analysis
Study of analytical tools used in the analysis and modeling of engineering systems in addition to the use of simulation software such as MATLAB. Emphasis is placed on solving problems tied to direct applications within the engineering disciplines.
Units: 3

ENGR 205. Computing in Engineering Analysis
(ENGR 205 same as CE 205). Prerequisite: graduate status in engineering. Solution of engineering problems using digital computation. Modeling of engineering systems for numerical analysis at the graduate level. Solution of engineering problems using digital computation. Modeling of engineering systems for numerical analysis.
Units: 3

ENGR 206. Stochastic Theory in Engineering Analysis for Electrical Engineers
Prerequisites: ECE 125 or ME 125 or equivalent. Estimation theory and applications, reliability theory, statistical yield models, random processes, autocorrelation, power spectral densities, noise characterization, random processes, matched filters, multivariable regression, analysis of variance, and design of experiments. Applications to communications and communication systems, control systems, and dynamic mechanical systems.
Units: 3

ENGR 210. Linear Control Systems
A first-year graduate course covering the analysis, synthesis, and performance of linear control systems. Partial fraction expansion, Routh's criterion, the impulse function. Basic servo characteristics and types, block diagrams, transfer functions. A detailed treatment to the root locus method for analysis and synthesis. Frequency response, logarithmic and polar plots, Nyquist's criterion, stability characteristics, phase margin and gain margin.
Units: 3

ENGLISH

CI 161. Mth Mtl Engl
Units: 3, Repeatable up to 999 units

EHD 154B. Final Student Teaching Seminar - English
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 5-10

EHD 155B. Studt Tchg Engl
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

**ENGL 1L. Writing Tutorial**
May be taken concurrently with ENGL 5A, ENGL 5B, ENGL 10, or ENGL 160W. Students work in a small group of two-three students and a tutor discussing writing assignments and collaborating by giving each other feedback and sharing strategies for revision. The tutor acts as a "personal trainer" by helping understand and fulfill the demands of your assignments according to your individual needs. CR/NC grading only. (2 hours)

Units: 1, Repeatable up to 3 units
Course Typically Offered: Fall, Spring

**ENGL 2. Writing Workshop**
Practical assignments and individual coaching on specific writing problems. For selected students this workshop may be required to be taken concurrently with, or as prerequisite to, other courses.

Units: 1-4
Course Typically Offered: Fall, Spring

**ENGL 5A. Academic Literacy I**
Practice in reading and writing processes, making literacy decisions based on audience, context, and purpose. Direct instruction on reading comprehension; genre analysis; planning, composing and revising writing; research strategies; paragraph development, sentence competence, and grammatical conventions. With ENGL 5B, equivalent of ENGL 10. CR/NC grading only.

Units: 3
Course Typically Offered: Fall, Spring

**ENGL 5B. Academic Literacy II**
Prerequisite: Completion of ENGL 5A with a grade of C or better. Continued study of reading and writing in various genres. Focus on research, analysis, synthesis, argument, and evaluation. Students guided to analyze the rhetorical qualities of academic literacy and language. Longer papers, portfolio assessment. G.E. Foundation A2.

Units: 3
Course Typically Offered: Fall, Spring

**ENGL 10. Accelerated Academic Literacy**
Reading and writing in academic and public genres, special attention to rhetorical decision-making and critical analysis. Guided instruction in reading and responding to texts. Participation in public and academic conversations via research in primary and secondary sources. (Formerly English 1) Enrollment in ENGL 10 not allowed if already received passing grade in ENGL 5A.

Units: 3
Course Typically Offered: Fall, Spring

**ENGL 20. Introduction to Literature**
Prerequisite: G.E. Foundation A2 (ENGL 5B OR ENGL 10). Introduction to literary appreciation and criticism through reading and close written analyses of short stories, novels, drama, and poetry from diverse Western and non-Western cultures. G.E. Breadth C2.

Units: 4
Course Typically Offered: Fall, Spring

**ENGL 21. Genre**
Prerequisite: ENGL 5B or ENGL 10. Genre explores the history, issues, and trends in genres, considered as authorial technique, audience expectation, and interpretive strategy. May examine forms (like poetry, prose, drama) or topics (such as memoir, mystery, science fiction).

Units: 4
Course Typically Offered: Fall, Spring

**ENGL 30. Readings in World Literature**

Units: 4
Course Typically Offered: Fall, Spring

**ENGL 31. Readings in British Literature**
Prerequisites: ENGL 5B or ENGL 10. Chronological survey of British Literature from medieval to contemporary. Discussion and written analyses of influential poetry, drama, fiction and nonfiction, including historical and cultural contexts. Required for English majors.

Units: 4
Course Typically Offered: Fall, Spring

**ENGL 32. Readings in American Literature**
Prerequisite: ENGL 5 or ENGL 10. Chronological survey of U.S. Literature from Native American oral traditions to contemporary. Discussion and written analyses of influential poetry, drama, fiction and nonfiction., including historical and cultural contexts. Required for English majors.

Units: 4
Course Typically Offered: Fall, Spring

**ENGL 41. Poetry Writing**
Beginning workshop in the writing of poetry; appropriate reading and analyses. G.E. Breadth C1.

Units: 4
ENGL 43. Fiction Writing
Beginning workshop in the writing of fiction; appropriate reading and analyses. G.E. Breadth C1.
Units: 4
Course Typically Offered: Fall, Spring
GE Area: C1

ENGL 44. Creative Nonfiction Writing
Beginning workshop in lyric essay, memoir, and other forms of creative nonfiction writing; appropriate readings and analysis. G.E. Breadth C1.
Units: 4
Course Typically Offered: Fall, Spring
GE Area: C1

ENGL 50T. Studies in Literature
(Same as WS 50T, Women in Novels section.) Prerequisite: ENGL 5 or ENGL 10. Sections designated as emphasizing certain writers, types, or themes, e.g., Shakespeare, The Poem, Literature of Protest, Women in Novels. Appropriate readings and analyses.
Units: 1-4

ENGL 70. Public Writing and Argument
Studies rhetorical situations, rhetorical appeals, argumentative discourses, and how writing incites social change. Practices using analytic lenses such as rhetorical criticism, discourse analysis, and critical race theory to analyze public writing and to construct arguments about local community issues.
Units: 4
Course Typically Offered: Fall, Spring

ENGL 100W. Writing Skills
Credit obtained only by passing Upper-Division Writing Skills Examination and upon request. CR/NC grading only.
Units: 1
Course Typically Offered: Fall, Spring

ENGL 101. Masterpieces of World Literature
Prerequisites: G.E. Foundation and Breadth Area C. Discussion and written analyses of influential poetry, drama, fiction, and nonfiction (in translation) from throughout the world, including historical and cultural contexts. Not applicable to the English major. G.E. Integration IC.
Units: 4
Course Typically Offered: Fall, Spring
GE Area: IC

ENGL 102. Masterpieces of English Literature
Prerequisites: G.E. Foundation and Breadth Area C. Discussion and written analyses of influential poetry, drama, fiction, and non-fiction by British authors as well as colonial and post-colonial works influenced by English literature. Historical and cultural contexts of literary works. Not applicable to the English major. G.E. Integration IC.
Units: 4
Course Typically Offered: Fall, Spring
GE Area: IC

ENGL 102WZ. Masterpieces of English Literature
Prerequisites: G.E. Foundation and Breadth Area C. Discussion and written analyses of influential poetry, drama, fiction, and non-fiction by British authors as well as colonial and post-colonial works influenced by English literature. Historical and cultural contexts of literary works. Not applicable to the English major. Meets the upper-division writing skills requirement for graduation. G.E. Integration IC.
Units: 4
GE Area: IC

ENGL 103. Masterpieces of American Literature
Prerequisites: G.E. Foundation and Breadth Area C. Discussion and written analyses of influential drama, fiction, and nonfiction by American authors and representing the cultural diversity of the nation. Historical and social contexts of literary works. Not applicable to the English major. G.E. Integration IC.
Units: 4
Course Typically Offered: Fall, Spring

ENGL 104. Children's and Adolescent Literature
Survey of the major forms and genres of children's literature. Designed primarily for future elementary school teachers. May not be used for credit toward the English major.
Units: 4
Course Typically Offered: Fall, Spring

ENGL 105. Introduction to Literary Analysis
Prerequisite: ENGL 31 and ENGL 32. The theory and practice of literary analysis. Examination of the concept of literary tradition; consideration of research methods; application of critical theory to textual analysis and the writing of literary criticism. Required for English majors.
Units: 4
Course Typically Offered: Fall, Spring

ENGL 106W. Writing in English Studies
Prerequisites: GE Foundation A2 Requirement (English 5B or 10) and 60 units of coursework. Methods for reading, writing, research, and inquiry within the discipline of English Studies. Develops literacies to join academic and public conversations. Meets the upper-division writing skills requirement for graduation.
Units: 4
Course Typically Offered: Fall, Spring

ENGL 112. World Literature: Ancient
Prerequisites: G.E. Foundation and Breadth Area C. Analysis of texts (in translation) from c. 1650 BCE-750 CE, from areas such as China, India, Egypt, Israel, Greece, and Rome. Possible
topics: epics and empires, civilization and wilderness, lyric experience, dramatizations of love and terror, and quests for wisdom. G.E. Integration IC.

Units: 4
Course Typically Offered: Fall, Spring

ENGL 113. World Literature: Medieval and Renaissance
Prerequisites: G.E. Foundation and Breadth Area C. Analysis of texts (in translation) from c. 750-1650, from areas such as Japan, Mali, Mexico, Spain and Persia. Possible topics: travelers' tales and intercultural encounters, satire and social critique, poetic and narrative self-fashioning, patronage and eroticism in court poetry. G.E. Integration IC.

Units: 4
Course Typically Offered: Fall, Spring

ENGL 114. World Literature: Modern
Prerequisites: G.E. Foundation and Breadth Area C. Analysis of texts (Anglophone and in translation) from c.1650 to the present, from areas such as Africa, Asia, Europe, and Latin America. Possible topics: imperialism and resistance, enlightenment, Romanticism, nationalism, modernism, postcolonialism, globalization, migration, evolving cultural and sexual identities. G.E. Integration IC.

Units: 4
Course Typically Offered: Fall, Spring

ENGL 117W. Writing from Children's Lit
Prerequisite: Satisfactory completion of G.E. Foundation and breadth area C. This course includes intensive, inquiry-based writing that emerges from the study of children's literature from grades K-6. Meets upper-division writing requirement. Enrollment limited to Liberal Studies Majors.

Units: 3
Course Typically Offered: Fall, Spring

ENGL 131. Literacy Studies
Corequisite: ENGL 105. Examines current issues in the field of literacy studies pertaining to English education. Particular emphasis given to literacy acquisition, adolescent literacy, and the discourses of literary analysis and writing pedagogy. Required for English credential majors. (Formerly ENGL 175T)

Units: 4
Course Typically Offered: Fall, Spring

ENGL 132S. Rhetoric, Grammar, and Writing Instruction
Prerequisite: ENGL 131 or permission of instructor; may be taken concurrently. Rhetoric, grammar, and writing instruction for future English teachers. Focus on structures of English language and role of grammar and usage in writing instruction. Students apply and extend learning through at least 30 hours of service-learning with local literacy organizations. (Formerly ENGL 175T)

Units: 4
Course Typically Offered: Fall, Spring

ENGL 133. Texts Teachers Teach
Prerequisite: ENGL 105. Co-requisite: ENGL 131. Explore practical ideas for bringing new texts or new ways to teach canonical texts into standardized curriculum environments for middle and high school English Language Arts classrooms. Includes contemporary Young Adult literature, world mythology and folklore, Shakespeare, poetry, and non-fiction.

Units: 4
Course Typically Offered: Spring

ENGL 141. African American Masterpieces of American Literature
Prerequisites: ENGL 105 (C or better). English majors may take ENGL 105 concurrently. This course provides a general overview of African Americans within U.S. culture and politics. It explores reconfigurations of "blackness" away from antithetical definitions of humanity and citizenship, and towards self-determination through strategic production of art and literature. (Formerly ENLG 169T.)

Units: 4
Course Typically Offered: Spring

ENGL 142. American Indian Masterpieces of American Literature
Prerequisites: ENGL 105 (C or better). English majors may take ENGL 105 concurrently. This course provides a general overview of American Indian writers within U.S. culture and politics. We will read fiction, poetry, non-fiction prose, creative non-fiction, and genre/popular fiction dealing with topics as related to American Indian lives. (Formerly ENGL 193T.)

Units: 4
Course Typically Offered: Spring - odd

ENGL 143. Asian American Masterpieces of American Literature
Prerequisites: ENGL 105 (C or better). English majors may take ENGL 105 concurrently. This course provides a general overview of Asian American writers within U.S. culture and politics. It explores how Asian American writers negotiate a myriad of identity formations that rebut many mainstream racialized depictions and how their writing resists restrictive legal contexts. (Formerly ENGL 169T.)

Units: 4
Course Typically Offered: Spring - even

ENGL 144. Masterpieces of Chicano Literature
Prerequisites: ENGL 105 (C or better). English majors may take ENGL 105 concurrently. This course provides a general overview of Chicano writers within U.S. culture and politics. These texts are artistic representations of historical processes
that led to a non-white racial formation, proletarianization, and the systemic disenfranchisement of U.S. peoples of Mexican descent. (Formerly ENGL 193T)

Units: 4
Course Typically Offered: Fall

ENGL 146. Medieval Literature
Corequisite: ENGL 105. Analysis of British texts, c. 500-1500. Topics may include oral and manuscript cultures; religious, linguistic and political conversion; and class, gender and sexuality in the literatures of monastery, court, and marketplace.

Units: 4
Course Typically Offered: Fall, Spring

ENGL 147. English Renaissance Literature
Corequisite: ENGL 105. Analysis of texts, 1500-1660. Topics may include Renaissance humanism, Reformation, Counter-Reformation, New World exploration, conflicting political and social cultures of court and city, the rise of print, the advent of English theater, and the development of vernacular literary forms.

Units: 4
Course Typically Offered: Spring

ENGL 150. Restoration and 18th Century Literature
Corequisite: ENGL 105. Analysis of British texts, 1660-1800. Topics may include commerce and mercantilism, colonialism, and global trade, crime and poverty, and an increased emphasis on feminine domesticity and masculine civic virtue.

Units: 4
Course Typically Offered: Fall

ENGL 151. British Romantic Literature
Corequisite: ENGL 105. Analysis of texts from 1789-1832, period of the French and Industrial Revolutions. Topics will examine how expansions in the literary marketplace intersect with the growth of domestic ideology and the idea of 'natural' rights to form national identity.

Units: 4
Course Typically Offered: Spring

ENGL 152. Victorian Literature
Corequisite: ENGL 105. Analysis of British texts, 1832-1901. Topics may include the condition of England, the spiritual crisis and science, empire and travel, cultural identity, and the "Woman Question".

Units: 4

ENGL 153. American Literature to 1865
Corequisite: ENGL 105. Analysis of texts, pre-contact to the Civil War. Topics may include American Indian creation stories and oral narratives, exploration, colonialism, Puritanism, frontier life, transcendentalism, and slavery.

Units: 4
Course Typically Offered: Spring

ENGL 154. American Literature 1865 to World War I
Corequisite: ENGL 105. Analysis of texts from Reconstruction to 1918. Topics may include the women's rights movement, realism and naturalism, urbanization and industrialization, migration and immigration.

Units: 4
Course Typically Offered: Spring

ENGL 155. Modern and Contemporary American Literature
Corequisite: ENGL 105. Analysis of texts since World War I. Topics may include alienation and disillusionment, self-conscious experimentation, the impact of the media and technology, social movements and identity politics, globalization, and postmodernism.

Units: 4
Course Typically Offered: Fall, Spring

ENGL 156. Modern and Contemporary British Literature
Corequisite: ENGL 105. Discussion and written analyses of selected poems, plays, and fiction from 1900 to the present by such authors as Forster, Yeats, Woolf, Lawrence, Joyce, Greene, Auden, Thomas, and post-World War II writers.

Units: 4
Course Typically Offered: Fall, Spring

ENGL 160W. Writing Workshop
Prerequisite: satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement. Practical assignments in writing, directed according to each student's individual needs. May be elected as preparation for special composition requirements. Does not apply to the English major or minor. Meets the upper-division writing skills requirement for graduation.

Units: 4, Repeatable up to 8 units
Course Typically Offered: Fall, Spring

ENGL 160WZ. Writing Workshop
Prerequisite: satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement. Practical assignments in writing, directed according to each student's individual needs. May be elected as preparation for special composition requirements. Does not apply to the English major or minor. Meets the upper-division writing skills requirement for graduation.
ENGL 161. Advanced Writing of Poetry
Prerequisite: ENGL 41. Intensive workshop in the writing of poetry; appropriate readings and analyses.
Units: 4, Repeatable up to 8 units
Course Typically Offered: Fall, Spring

ENGL 163. Advanced Writing of Fiction
Prerequisite: ENGL 43. Intensive workshop in the writing of fiction; appropriate readings and analyses.
Units: 4, Repeatable up to 8 units
Course Typically Offered: Fall, Spring

ENGL 164. Advanced Writing of Creative Nonfiction
Prerequisite: ENGL 44. Intensive workshop in memoir, lyric essay, and all other forms of creative nonfiction writing; appropriate readings and analyses.
Units: 4, Repeatable up to 8 units
Course Typically Offered: Fall, Spring

ENGL 164Z. Advanced Prose Writing
Prerequisite: ENGL 5B or ENGL 10. Workshop in all forms of nonfiction prose writing; appropriate readings and analyses. Designed for majors in all fields who want to develop their writing.
Units: 4, Repeatable up to 8 units

ENGL 165. Craft and Technique in Creative Writing
Prerequisite: ENGL 41, ENGL 43, or ENGL 44. Undergraduate seminar in the craft and techniques of creative writing designed to provide intensive study of current and traditional formal, stylistic, and technical issues and developments in poetry, fiction, and creative nonfiction.
Units: 4
Course Typically Offered: Fall

ENGL 166. Literary Publishing and Editing
Undergraduate seminar focused on supervised project-based editorial work with online and/or print literary publications.
Units: 4
Course Typically Offered: Spring

ENGL 167. Mythology and Folklore
Discussion and written analyses of the structure, content, and function of myth and folklore in world literature, with particular emphasis on the relationships among language, myth, and culture.
Units: 4

ENGL 168T. Women and Literature
(WS 168T same as ENGL 168T.) Prerequisite: ENGL 20. Discussion and written analysis of literature by and about women. Special emphasis on 19th and 20th Century authors including the Brontes, George Eliot, Emily Dickinson, Edith Wharton, Virginia Woolf, and contemporary writers.
Units: 4, Repeatable up to 8 units

ENGL 169T. Forms of Literature
Sections designated as emphasizing poetry, drama, novel, short story, perhaps limited to a specific period or subclass; for example, 18th Century English Novel, 20th Century British and American Poetry, Modern Short Stories, 20th Century Drama, Tragedy, Folklore, Mythology. Discussion and written analyses are required.
Units: 1-4
Course Typically Offered: Spring

ENGL 170W. Writing and Teaching Writing
Prerequisites: Satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement. Additionally students should complete at least 56 units prior to enrolling in a W course. Designed for future secondary teachers in all disciplines. Practice writing rhetorically using writing processes. Instruction in teaching writing across content areas. Does not apply to the English major or minor, Meets the upper division writing skills requirement for graduation.
Units: 4
Course Typically Offered: Fall, Spring

ENGL 171. Biography and Autobiography
Reading, discussion, and written analyses of selected biographical or autobiographical works, including such topics as literary biography, the autobiographical essay, memoirs, and issues of gender and ethnicity in biographical form.
Units: 4
Course Typically Offered: Fall

ENGL 172. Advanced Rhetoric and Composition
Introduces students to the interrelated fields of rhetoric, composition, and literacy studies (R/C/L). Familiarizes students with key terms, texts, histories, pedagogical theories, major figures/scholars, conversations, and debates in the discipline of rhetoric and composition.
Units: 4
Course Typically Offered: Spring

ENGL 173. Cultural Rhetoric(s)
Examines American Ethnic Rhetoric(s) through debates about the social histories of rhetoric. Traces classical, neoclassical, and/or contemporary rhetoricians. First-hand investigation of primary cultural artifacts, including review of archival studies,
rhetorical/feminist historiography, and/or qualitative research approaches.

Units: 4
Course Typically Offered: Spring

ENGL 174. Popular Fiction
Prerequisites: G.E. Foundation and Breadth Area C. Survey of major types of popular genre fiction (detective, horror, spy, science fiction, Western, fantasy, etc.) Discussion; writing. Examination of works in cultural and historical context and as literary and commercial art. G.E. Integration IC.

Units: 3
Course Typically Offered: Fall, Spring
GE Area: IC

ENGL 174Z. Popular Fiction - London in Literature
Units: 3
GE Area: IC

ENGL 175T. Topics in Rhetoric and Writing Studies
This course focuses on special topics in Rhetoric and Writing studies, such as rhetorical theory and history, writing theory or pedagogy, literacy studies, research methods, genre studies, writing assessment, teaching with technology.

Units: 4, Repeatable up to 8 units

ENGL 175T. Digital Writing
Designed especially for future teachers of writing, this course introduces students to the variety of new genres (including blogs, wikis, etc) and modes of reception produced by the development of traditional print forms into online and e-formats. (Offered Spring 2020)

Units: 4

ENGL 177. Literature, Cinema and the Liberal Arts
Explores humanistic themes and motifs through comparative analysis of works of literature, drama, and contemporary cinema. Examines how film and the other arts shape and reflect American values. Two essay midterms. Final project/paper. Five thousand work writing requirement. (Formerly INTD 168)

Units: 4
Course Typically Offered: Fall

ENGL 178. Lesbian & Gay Literature
(ENGL 178 same as WS 178) ENGL 178 enrollment Prerequisite: ENGL 105; WS 178 enrollment Prerequisite: WS 125 or permission of the instructor. Discussion and written analysis of literature that explores lesbian, gay, bisexual, transgender, and/or queer identities and experience. Also considers how cultural and historical forces shape current notions of sexual identity and community.

Units: 4

Course Typically Offered: Spring

ENGL 179. Multi-Ethnic American Literature
Prerequisite: English 5B or ENGL 10; concurrent enrollment in ENGL 105. Discussion and written analysis of selected poems, plays, fiction, and memoir by authors from several American ethnic backgrounds, such as African American, American Indian, Latino/Hispanic American, Asian American. (Formerly ENGL 169T)

Units: 4
Course Typically Offered: Spring

ENGL 181. Literary Theory and Criticism
A survey of literary theory, including Marxism, feminism, psychoanalysis, deconstruction, structuralism, and post-structuralism. Topics also include the history of literary criticism and the practice of interpretation. Discussion, lectures, written analyses.

Units: 4
Course Typically Offered: Fall, Spring

ENGL 182. English Workshop
Seminar in composition and learning. Discussion and practical exercises concerning theory, evaluation, and improvement of language learning and composition. CR/NC grading only.

Units: 1-4
Course Typically Offered: Fall, Spring

ENGL 183T. Seminar in Literature
Prerequisite: appropriate upper-division literature course. Designed for students interested in in-depth study of a literary topic; recommended for liberal studies majors. Seminar in an aspect of literary history, type, period, movement, individual author. Reports and written analyses required.

Units: 1-4

ENGL 184. Chaucer
Co-requisite: concurrent enrollment in ENGL 105. Reading, discussion, and written analyses of the major works of Geoffrey Chaucer.

Units: 4
Course Typically Offered: Fall

ENGL 185. English Internship Seminar
Prerequisite: permission of instructor. Seminar to be taken concurrently with ENGL 186 during the first semester of enrollment in program. Group and individual analyses of writing done in internship assignments. Discussion of the rhetorical problems of writing for public agencies, magazines and journals, and private industry. CR/NC grading only.

Units: 2
Course Typically Offered: Fall, Spring

ENGL 186I. Internship in English
Prerequisite: permission of instructor. No more than 2 units of ENGL 186 may apply to the English major. See also ENGL 185. Supervised work experience in public agencies and private industry to provide an opportunity to develop professional writing skills. Approved for SP grading. CR/NC grading only.
Units: 2-6
Course Typically Offered: Fall, Spring

ENGL 187. Milton
Co-requisite: concurrent enrollment in ENGL 105. Reading, discussion, and written analyses of the major works of John Milton.
Units: 4
Course Typically Offered: Spring

ENGL 188T. Single Author
Reading and written analysis of major works of a single author.
Units: 4, Repeatable up to 8 units

ENGL 189. Shakespeare
Co-requisite: concurrent enrollment in ENGL 105. (ENGL 189 same as DRAMA 194.) Reading and writing analysis of major works of Shakespeare.
Units: 4
Course Typically Offered: Fall, Spring

ENGL 189Z. Shakespeare
Units: 4

ENGL 190. Independent Study
See Academic Placement -- Independent Study. Approved for SP grading.
Units: 1-3

ENGL 191. Supervised Independent Reading
Prerequisite: permission of instructor. Reading works from a literary period (for example, Beowulf to Marlowe, American Literature to Whitman, World Literature: Ancient and Medieval) and discussion in individual conferences. (Formerly ENGL 191T)
Units: 1-4
Course Typically Offered: Fall, Spring

ENGL 192A. Practicum in Tutoring Writing I
Prerequisite: permission of instructor. Pedagogy, theory and practical discussions of tutoring writing. Required as a sequence of courses of undergraduate writing tutors every semester of tutoring at the Writing Center.
Units: 1
Course Typically Offered: Fall

ENGL 192B. Practicum in Tutoring Writing II
Prerequisite: ENGL 192A. Pedagogy, theory and practical discussions of tutoring writing. Examines closely theories informing practices tutors were introduced to in ENGL 192A of responding to writing, group facilitation and utilizing writing for learning. Introduction to specific methods of one-on-one tutoring. Required for undergraduate tutors tutoring at the Writing Center second semester.
Units: 1
Course Typically Offered: Spring

ENGL 192C. Practicum in Tutoring Writing III
Prerequisite: ENGL 192A and ENGL 192B. Pedagogy, theory and practical discussions of tutoring writing. Examination of demands of various writing genres and publishing styles as disciplinary practices; tutoring grammar in the context of genre. Required for undergraduate tutors tutoring at the Writing Center third semester.
Units: 1
Course Typically Offered: Fall

ENGL 192D. Practicum in Tutoring Writing IV
Prerequisite: ENGL 192A, ENGL 192B, and ENGL 192C. Pedagogy, theory and practical discussions of tutoring writing. Examines transferability of tutoring practices to classroom and professional settings, building a collaborative community and practices. Required for undergraduate tutors tutoring at the Writing Center fourth semester.
Units: 1
Course Typically Offered: Spring

ENGL 192E. Practicum in Tutoring Writing V
Prerequisite: ENGL 192A, ENGL 192B, ENGL 192C, and ENGL 192D. Pedagogy, theory and practical discussions of tutoring writing. Survey of variety of tutoring and small group practices, history of writing centers, collaborative practices. Required for undergraduate tutors tutoring at the Writing Center fifth semester.
Units: 1
Course Typically Offered: Fall

ENGL 193T. Seminar in Literary Studies
No more than 12 units of ENGL 193T- ENGL194T may be applied to the English major. Sections designated by topic. Individual projects; reading, discussion, and writing of papers on individual writers (for example, Milton, D.H. Lawrence), short periods of literary history (for example, Romantic Poets, Modern Novel), literary themes and traditions (for example, Transcendental Vein in American Literature, Arthurian Tradition) literary criticism (for example, Problems in Modern Criticism, Archetype and Myth), and other special
ENGL 193T should ordinarily not be taken until 3 upper-division courses in English have been completed.

Units: 4, Repeatable up to 8 units
Course Typically Offered: Fall, Spring

ENGL 193T. Languages & Literature: Critical Race Theory
This course examines NCTE'S students Right to their Own Language within the academy while illuminating race, racism, powers and social justice issues that push and pull against pedagogical and rhetorical norms. (Offered Spring 2020)

Units: 4

ENGL 193T. Beat Writers
Love it or hate it, the Beat movement is one of America's most vibrant artistic achievements. This class is an intensive study of the world of the Beats, from their origins in the Hipsters to their successors, the Hippies. (Offered Spring 2020)

Units: 4

ENGL 194T. Seminar in Women and Literature
(ENGL 194T same as WS 194T.) May be substituted for ENGL 193T in the English major; no more than 12 units of ENGL 193T- ENGL194T applicable to the major. Sections designated by topic. Individual projects; reading, discussion, and writing papers on individual women writers or some aspect of women in literature; for example, Doris Lessing, Myth and Archetypes of Women. ENGL 194T should ordinarily not be taken until 3 upper-division courses in English have been completed.

Units: 4, Repeatable up to 8 units

ENGL 197. Senior Project in English Studies
Prerequisite: ENGL 105. English Education Option students apply English Studies to explore a key question in the field related to professional aspirations, present results in essay, multi-media, or online format, and complete a reflective essay. Evaluate their learning in the field to prepare a professional portfolio that reflects on and demonstrates their achievement of subject matter competency in English Education to support their professional goals.

Units: 1

ENGL 197. Senior Project in English Studies
Prerequisite: ENGL 105. English Education Option students apply English Studies to explore a key question in the field related to professional aspirations, present results in essay, multi-media, or online format, and complete a reflective essay. Evaluate their learning in the field to prepare a professional portfolio that reflects on and demonstrates their achievement of subject matter competency in English Education to support their professional goals.

Units: 1

ENGL 205. Research Methods in English Studies
A graduate-level seminar in research methods in English studies. Students will learn scholarly modes of evaluation, analysis, critical approaches, argumentation, academic conventions, and professional ethics. Required of first year students in the English M.A.

Units: 4

ENGL 241. Seminar in Form and Theory: Poetry
Prerequisite: normally limited to students enrolled in the graduate creative writing program; others admitted by permission of instructor. Seminar in literary craft designed primarily for the graduate writing student to provide intensive study of current and traditional formal, stylistic, and technical issues and controversies in the genre (for example, traditional prosody, non-traditional poetics, and contemporary lyric).

Units: 4, Repeatable up to 12 units

ENGL 242. Literary Editing and Publishing
Prerequisite: normally limited to students enrolled in the graduate creative writing program; others admitted by permission of instructor. Seminar in evaluating literary manuscripts, including but not limited to poetry collections submitted for the annual Philip Levine Prize in Poetry. Issues of aesthetic, book manuscript development, literary contest administration, and poetry book production and marketing.

Units: 4, Repeatable up to 12 units

ENGL 243. Seminar in Form and Theory: Fiction
Prerequisite: normally limited to students enrolled in the graduate creative writing program; others admitted by permission of instructor. Seminar in literary craft designed primarily for the graduate writing student to provide intensive study of current and traditional formal, stylistic, and technical issues and controversies in the genre (for example, narrative theory and non-traditional fictional forms).

Units: 4, Repeatable up to 12 units

ENGL 244. Seminar in Form and Theory: Nonfiction
Prerequisite: normally limited to students enrolled in the graduate creative writing program; others admitted by permission of instructor. Seminar in literary craft designed primarily for the graduate writing student to provide intensive study of current and traditional formal, stylistic, and technical issues and controversies in the genre (for example, narrative theory and non-traditional fictional forms).

Units: 4, Repeatable up to 12 units
ENGL 245. Seminar in Form and Theory: Creative Nonfiction  
Prerequisite: normally limited to students enrolled in graduate creative writing program; others by permission of instructor.  
Seminar in literary craft designed primarily for the graduate writing student to provide intensive study of current and traditional formal, stylistic and technical issues and controversies in the genre (for example, traditional and nontraditional essay forms, memoir, prose theory).  
Units: 4, Repeatable up to 12 units

ENGL 250T. Seminar in Literature  
Prerequisites: major or minor in English; permission of instructor. Seminar in an aspect of literary history, type, period, movement, or an individual author (for example, Fiction, Seventeenth Century Lyric Poetry, The Irish, Dickens).  
Units: 4, Repeatable up to 16 units

ENGL 250T. Marvels, Miracles, and Magic  
This course will look at the place of marvels and magic in medieval and early modern texts. It will explore "magic" as part of medieval science and technology as well as literary representations of the marvelous and/or interactions with supernatural worlds. (Offered Spring 2020)  
Units: 4

ENGL 250T. Writing for Performance  
The course will focus on the delivery, intention, and an examination of best-practices aimed toward innovation and optimal audience reception. Classic and contemporary works of fiction, poetry, creative non-fiction will be the foundational subject matter for examination as it is performed. (Offered Spring 2020)  
Units: 4

ENGL 250T. Empire and Racial Spectacle  
This course will explore the cyclical relationship with a focus on how racial narratives are produced in order to fuel imperial projects. We will analyze a variety of literary, visual, and pop culture texts that produce "savagery" in order to justify colonization built upon systems of export production and race-based labor. (Offered Spring 2020)  
Units: 4

ENGL 250T. Feminism and Science Fiction  
Exploration and analysis of feminism in historical and contemporary Sci Fi writing. Special focus on place of gender in questions of race, class, colonialism. Authors such as Mary Shelley, Octavia Butler, Nnedi Okorafor, Ursula LeGuin, Joanna Russ, Suzy Mckee-Charkas, No Hopkinson, Samuel R. Zelane, Hiromu Arakawa and more.  
Units: 4, Repeatable up to 16 units

ENGL 250T. 14th Century: Catastrophe & Revolution  
Reading the literature of 14th century Britain in the context of political upheaval, pandemic, climate change and cultural shifts.  
Units: 4, Repeatable up to 8 units

ENGL 250T. 20th/21st Century United States Women's Writing  
Study of different genres written by U.S. women from a variety of ethnic backgrounds since 1900.  
Units: 4

ENGL 250T. Faulkner  
This course will explore Faulkner's development as a writer from his early poetry through the various stages of his career as a novelist. We will read and analyze his novels, including those usually cited as his major works and some seen as less important. This course will also include some engagement with a small portion of the vast amount of Faulkner's criticism. (Offered Spring 2020)  
Units: 4

ENGL 261. Seminar: Writing Poetry  
Prerequisite: permission of instructor. Advanced individual projects in the writing of poetry.  
Units: 4, Repeatable up to 16 units

ENGL 263. Seminar: Writing Fiction  
Prerequisite: permission of instructor. Advanced individual projects in the writing of fiction.  
Units: 4, Repeatable up to 16 units

ENGL 265. Seminar: Writing Creative Nonfiction  
Prerequisite: permission of instructor. Advanced individual projects in the writing of creative nonfiction.  
Units: 4, Repeatable up to 16 units

ENGL 270. Seminar in Teaching Writing: Theory and Practice  
Prerequisites: major or minor in English; permission of instructor. Seminar considers histories, philosophies, and research that inform pedagogical practices in rhetoric and composition. It introduces basic teaching methods through such activities as class discussions, curriculum design, and assessments.  
Units: 4

ENGL 278T. Seminar in Rhetoric and Composition  
Explores special topics in rhetoric and composition studies, such as rhetorical theory and history, composition theory, literacy theory, research methods, genre studies, writing
ENGL 278T: Languages & Literature: Critical Race Theory
This course examines NCTE'S students Right to their Own Language within the academy while illuminating race, racism, powers and social justice issues that push and pull against pedagogical and rhetorical norms. (Offered Spring 2020)
Units: 4

ENGL 280T: Seminar in Critical Theory
Prerequisites: major or minor in English; permission of instructor. Seminar in literary criticism (for example, Literary Critics).
Units: 4, Repeatable up to 12 units

ENGL 281: Current Writing Theory
Prerequisites: major or minor in English; permission of instructor. Designed to acquaint the student with current key issues in composition theory and the theoretical implications for course design and pedagogy.
Units: 4

ENGL 282A: Practicum in the Teaching of Writing I
Prerequisite: Permission of Instructor. Practical discussions of the daily work of teaching college writing including: modeling lesson planning, presenting demonstrations of teaching, and discussing pedagogical issues. Required of all Teaching Associates teaching English 5A for the first time. May count toward the MA degree in Rhetoric and Writing Studies.
Units: 1

ENGL 282B: Practicum in the Teaching of Writing II
Prerequisite: Permission of Instructor. Practical discussions of the daily work of teaching college writing including: supporting decisions about lesson planning, building coherence and scaffolding of activities, and discussing the opportunities and challenges of classroom teaching. Required of all Teaching Associates teaching English 5B for the first time. May count toward the MA degree in Rhetoric and Writing Studies.
Units: 1

ENGL 282C: Practicum in the Teaching of Writing III
Prerequisite: Permission of Instructor. Practical discussions of the daily work of teaching college writing including: designing and implementing English 10 curriculum, teaching analysis from a rhetorical perspective, teaching researched argumentative writing. Required of all Teaching Associates teaching in their third semester of teaching. May count toward the MA degree in Rhetoric and Writing Studies.
Units: 1

ENGL 282D: Practicum in the Teaching of Writing IV
Prerequisite: Permission of Instructor. Practical discussions of the daily work of teaching college writing including: implementing more advanced pedagogical theory and practices, scaffolding major writing project assignments, and integrating formative assessment techniques. Required of all Teaching Associates teaching in their fourth semester of teaching. May count toward the MA degree in Rhetoric and Writing Studies.
Units: 1

ENGL 282E: Practicum in the Teaching of Writing V
Prerequisite: Permission of Instructor. Practical discussions of the daily work of teaching college writing including: experimenting with new approaches and/or observing teaching from new perspectives. Required of all Teaching Associates teaching in their fifth semester of teaching. May count toward the MA degree in Rhetoric and Writing Studies.
Units: 1

ENGL 282F: Practicum in the Teaching of Writing VI
Prerequisite: Permission of Instructor. Practical discussions of the daily work of teaching college writing including: how to represent teaching in professional contexts for employment and within the discipline. Required of all Teaching Associates teaching in their sixth semester of teaching. May count toward the MA degree in Rhetoric and Writing Studies.
Units: 1

ENGL 282G: Practicum in the Teaching of Writing VII
Prerequisite: Permission of Instructor. Practical discussions of the daily work of teaching writing in secondary schools including implementing academic literacy practices to support articulation between secondary and college writing. May count toward the MA degree in Rhetoric and Writing Studies.
Units: 1-2

ENGL 282H: Practicum in the Teaching of Writing VIII
Prerequisite: Permission of Instructor. Practical discussions of the daily work of teaching writing in secondary schools including advanced integration of the teaching of expository writing through developing practices and activities for rhetorical reading, writing, and grammar. May count toward the MA degree in Rhetoric and Writing Studies.
Units: 1-2

ENGL 282I: Practicum in the Teaching of Writing IX
Prerequisite: Permission of Instructor. Practical discussions of the daily work of teaching writing in secondary schools across the disciplines, focusing on disciplinary literacies and designing assignments and activities to support the teaching of
reading and writing in various disciplinary contexts. May count toward the MA degree in Rhetoric and Writing Studies.

Units: 1-2

ENGL 283A. Practicum in Tutoring of Writing I
Prerequisite: Permission of instructor. Pedagogy, theory and practical discussions of tutoring writing. Required for graduate tutors during their first semester at the Writing Center. This course introduces students to the practice of responding to writing and group facilitation. Readings in responding to writing, tutoring methods, collaborative learning.

Units: 1

ENGL 283B. Practicum in Tutoring of Writing II
Prerequisite: Permission of instructor. Pedagogy, theory and practical discussions of tutoring writing. Required for graduate tutors during their second semester at the Writing Center. This course examines the underlying theories that inform the practices tutors were introduced to in the previous semester of responding to writing, group facilitation and utilizing writing for learning. Introduction to specific methods of one-on-one tutoring.

Units: 1

ENGL 283C. Practicum in Tutoring of Writing III
Prerequisite: Permission of instructor. Pedagogy, theory and practical discussions of tutoring writing. Required for graduate tutors during their third semester at the Writing Center. This course is designed to deepen the knowledge and practices developed so far by examining the pedagogical and theoretical foundations that guide tutoring practices. Building a tutoring community and mentoring new tutors, as well as transferring tutoring practices into classroom settings and campus tutoring events.

Units: 1

ENGL 283D. Practicum in Tutoring of Writing IV
Prerequisite: Permission of instructor. Pedagogy, theory and practical discussions of tutoring writing. Required for graduate tutors during their fourth semester at the Writing Center. This course is designed to examine the transferability of tutoring practices into classroom and professional settings (brainstorming sessions, meetings, writing collaboration), building a collaborative community and practices, conveying the knowledge and experience gained as a tutor for professional presentation and purposes. Strengthening a collaborative community at the Writing Center through mentoring and sharing of practices and experiences.

Units: 1

ENGL 283E. Practicum in Tutoring of Writing V
Prerequisite: Permission of instructor. Pedagogy, theory and practical discussions of tutoring writing. A required course for Writing Center graduate writing tutors during their fifth semester at the Writing Center. This course is designed to deepen knowledge and practices developed so far by examining the pedagogical and theoretical foundations that guide our tutoring practices, survey the history of writing centers and administrative practices.

Units: 1

ENGL 286. Practicum in Literary Arts - Publishing and Programming
Limited to students enrolled in the MFA program. Supervised work on editorial staff of professional literary magazine; projects in arts programming and service-learning. Repeatable for credit. Letter grade only.

Units: 1-6

ENGL 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3

ENGL 291. Supervised Independent Reading
Prerequisite: permission of instructor. Reading works from a literary period (for example, More to Milton, 20th Century American Literature, World Literature, Renaissance-Modern) and discussion in individual conferences. Approved for RP grading. (Formerly ENGL 291T)

Units: 1-4

ENGL 298. Project
Prerequisite: See Criteria for Thesis and Project. Revising, amending, and editing of three original scholarly papers produced while enrolled in graduate seminars, with the goal of creating publishable journal articles. The student's committee must approve of the scope and quality of the papers. Abstract required. Approved for RP grading.

Units: 2

ENGL 298C. Project Continuation
Pre-requisite: Project ENGL 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

ENGL 299. Thesis
Prerequisite: See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.

Units: 2-6

ENGL 299C. Thesis Continuation
Pre-requisite: Thesis 298. For continuous enrollment while completing the thesis. May enroll twice with department
approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

**ENGL 422T. Disoriented Word**

Units: 3

**ENGL 622T. Disoriented Word**

Units: 3

**ENGL 622T. Cultrs/Chldhd**

Units: 3

**ESE 1. Introduction to Academic Literacy**

Meets the Early Start Requirement. Designed to prepare students for the university's first-year writing requirement by teaching students a variety of academic reading and writing strategies.

Units: 1

**ESE 3. English Strategies**

Exposure to a variety of texts. Quoting, paraphrasing, summarizing, and synthesizing ideas. Attention to vocabulary development and grammar/editing. Application of learning strategies and reflection on use of these strategies. Meets the university remediation requirement.

Units: 3

**AFRICANA STUDIES**

**AFRS 1. Ethnic Experience**

Examines the experiences of various ethnic minorities in the U.S., addresses the issue of race as it affects ethnic formation, analyzes public policy and ethnic experience, discusses the comparable ideologies of race and gender, and evaluates culture and ethnic experience.

Units: 3

**AFRS 10. Introduction to Africana Studies**

Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. A survey course designed to introduce students to the vast array of scholarship defining the African American experience as they relate to the experiences of Africans on the continent and other peoples of African descent in the Diaspora. (Formerly AFAM 10).

Units: 3

Course Typically Offered: FallGE Area: D3

**AFRS 15. Slavery and the American Experience**

Prerequisite: GE Foundation A2 for students in English college-readness Category III and IV. A survey course examining the role of slavery in the economic, political and social development of the United States from the founding of the colonies through the revolutionary period to the civil war and beyond.

Units: 3

Course Typically Offered: SpringGE Area: D3

**AFRS 20. Critical Thinking About Race**

This course uses critical thinking skills to discuss, analyze, and critique centuries-old ideas on race/ethnicity and the social policies that were enacted to promote prejudice and discrimination against minorities with a special focus on peoples of African decent and American Indians.

Units: 3

Course Typically Offered: Fall, SpringGE Area: A3

**AFRS 21. Gospel Choir**

(Same as Music 102GC) Performance of a variety of inspirational songs reflecting the African American cultural experience. Participation through rehearsals, activities, programs, and field trips.

Units: 1, Repeatable up to 99 units

Course Typically Offered: Fall, Spring

**AFRS 24. African American Music**

The origin and evolution of African American music from the perspective of social and cultural history. Emphasis on slave songs, gospel, jazz, rhythm and blues, and soul music.

Units: 3

**AFRS 27. Africana Cultures and Images**

Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Introduction to the historical and contemporary experiences of African Americans and other peoples of African descent. Examines historical and social arrangements implicated in the experiences and the images these arrangements construct both in the United States and around the world. G.E. Breadth D3. (Formerly AFAM 27)

Units: 3

Course Typically Offered: Fall, SpringGE Area: D3

**AFRS 35. Art and Music of Africa**

Comprehensive study of African artistry and music.

Units: 3

**AFRS 36. Contemporary African Societies**

Analysis of the cultural and political structure of African societies; understanding the impact of colonialism in Africa; realizing the relationship of African Americans to Africa.

Units: 3
Course Typically Offered: Fall

AFRS 38. Sociology of the Black Experience
Basic principles sociology and their application to the black experience. This introductory course utilizes the sociological approach to seek an understanding of the various experiences of black people in society. Involves participant observation, interviewing, and field trips. (Formerly AFAM 38).

Units: 3

AFRS 55T. Topics in African American Studies
Selected topics at the introductory level in African American Studies.

Units: 1-3

AFRS 55T. Afro-Latin America
This course examines the experiences of Africans and their descendants in Latin America. While the course begins with the era of colonial slavery, most of our attention will focus on Afro-Latin Americans after emancipation. Topics we will explore include: slavery and emancipation, women and gender, race and the role of African descendants in building Latin American nations, and Afro-Latin American cultural traditions. (Offered Spring 2020)

Units: 3

AFRS 56. The African American Family
Deals with the origin, development, and adaptations the African American family has created to sustain itself as a viable institution. Emphasis is on problems encountered and created by the American society and how the African American family handles these adversities.

Units: 3

Course Typically Offered: Fall

AFRS 60. Introduction to African American Theatre
Study and practice in performance of African American drama and oral interpretation projects. Class will include poetry reading; dance performances; dramatic interpretations; comedic sketches. Previous experience not required.

Units: 3

AFRS 102A. African Dance
Focuses on the history of African dance in the United States, uses of dance among Africans/African Americans. Activities include dance techniques; imagery/visualization, dance exercises; simple constructive rest techniques; African dance step techniques preparatory for advance class. (2 lecture, 2 activity hours)

Units: 3

AFRS 104W. Writing About American Inequality
Prerequisite: satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement. Analysis of poverty, social class, and inequality in America. Students receive feedback in preparing papers on poverty and inequality. Emphasis on research techniques, evaluation and documentation of evidence, and style and mechanics of writing. Meets the upper-division writing skills requirement for graduation. (Formerly ETHS 104W)

Units: 3

Course Typically Offered: Fall, Spring

AFRS 121. Gospel Choir
(Same as Music 102GC) Performance of a variety of inspirational songs reflecting the African American cultural experience. Participation through rehearsals, activities, programs, and field trips.

Units: 1, Repeatable up to 99 units

AFRS 129. African American Literary Classics
Prerequisite: G.E. Foundation and Breadth Area C. Discussion and written analyses of significant poetry, drama, fiction, and nonfiction by African American writers representing a variety of views and perspectives. Historical and social contexts of literary works. G.E. Integration IC.

Units: 3

Course Typically Offered: Fall, SpringGE Area: IC

AFRS 130T. Topics in Ethnic Studies
In-depth research and writing on the past and contemporary situation of America's major ethnic minorities.

Units: 1-3

AFRS 135. The African American Community
Analysis of the various lifestyles and cultural patterns of African American communities. Emphasis on unique cultural features of the family, religion, foods, music, art, and folkways. (Formerly AFAM 135)

Units: 3

Course Typically Offered: Fall

AFRS 137. African American Women
(AFRS 137 same as WS 137.) An overview of the accomplishments of African American women in the United States; their contributions to American culture; African influence; African American women as defined by a dominant society vs. legitimate definition designed to encourage a positive self-concept.

Units: 3

AFRS 139. The African American Experience: Black Men and the Search for Self-Liberation
In this course, we will study the history of Black men, Black masculinity, and representations of Black men in media over the last century.. We will explore Black men's relationships with Black women, the State, and to other Black men. (Formerly AFRS 130T).
AFRS 140. The African American Church
History of the formation and development of African American religious institutions (Christianity, Islam, Judaism) in the African American community; their effect on the African American personality.
Units: 3
Course Typically Offered: Fall

AFRS 142. Hip Hop Culture
Analysis of the pre-history, formal advent, and subsequent cultural development and expansion of Hip-Hop primarily in Africana communities. Examines how Hip-Hop's history, politics, and economics in America shapes Africana gender identities, political sensibilities, and cultural worldviews. (Formerly AFRS 55T).
Units: 3
Course Typically Offered: Spring

AFRS 144. Race Relations
Prerequisites: G.E. Foundation and Breadth Area D. Analysis of the moral and intellectual issues surrounding the attitudes of whites toward blacks and other racial groups in the United States and elsewhere. Explores the functions of race relations and the social life that developed among non-white groups themselves. (Formerly AFAM 144)
Units: 3
Course Typically Offered: Spring

GE Area: ID

AFRS 145. Life and Times of Martin Luther King Jr.
Explores Dr. King’s leadership in the nonviolent movement for racial equality and human dignity, from the Montgomery Bus Boycott to King's assassination (1955-68). Emphasis on philosophy, ideology. Format: lectures, films, slides, recorded speeches, and discussion.
Units: 3

AFRS 146. Law and the Minority Community
Critical analysis of the foundation and changing structure of law and legal institutions as perceived by minority communities, with emphasis on equal employment and education, criminal justice, and political power.
Units: 3
Course Typically Offered: Spring

AFRS 148. Issues in the African American Community
Prerequisite: AFRS 10 or permission of instructor. In-depth, comprehensive, critical analysis of the current social and economic structure of the African American community. Examination of the effects of institutional racism on current social policy.
Units: 3

AFRS 150. South Africa
Prerequisites: G.E. Foundation and Breadth Area D. An introductory analysis of the social, racial, political, and economic problems of people of South Africa, both past and present. Multicultural/International M/I.
Units: 3
Course Typically Offered: Fall

AFRS 164. African Cultural Perspectives
This course explores the realities of the African cultural experiences through readings and films by Africans. The goal is to study the historical, political, economic, religious, and socio-cultural conditions of the continent in the pre-colonial, colonial, and postcolonial periods. Multicultural/International M/I.
Units: 3
Course Typically Offered: Fall

AFRS 165. African-American Theatre
(DRAMA 187 same as AFRS 165.) Performance, scene development, and dramatic styles consistent with the African American experience. Exploration of cross-cultural aesthetics as they inform creative development. Development of self-written or published scenes and plays. (Formerly AFAM 165)
Units: 3, Repeatable up to 6 units

AFRS 178. History of African Americans
(HIST 178 same as AFRS 178.)
Units: 3

AFRS 189. Fieldwork in Community Relations
Supervised field observation, participation, and documentation in the operation of minority communities.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

AFRS 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

AFRS 191. History of Allensworth
An examination of the historical development of the African American town of Allensworth from its status as a town to its existence as a state historic park. Students will be exposed to various academic disciplines through lectures and a field trip to the park.
Units: 1
Course Typically Offered: Spring
FINANCE & BUSINESS LAW

BA 18. Business and the Legal Environment
Prerequisite: sophomore standing. Introduction to legal system; relation of ethics to law; administrative, criminal, tort, and labor law; and legal aspects of international trade. A more extensive study of the law of contracts and agency. Case studies; discussion and analysis.
Units: 4
Course Typically Offered: Fall, Spring

BA 88. Public Law Environment of Business
Required of students seeking transfer credit for a 3-unit business law course in lieu of BA 18. Not open to students who completed BA 18 at California State University, Fresno. Relationship of ethics to law. Administrative law and government regulation framework, labor and employment law framework, and legal aspects of international trade.
Units: 1
Course Typically Offered: Fall

BA 101. Business Ethics
Traditional and contemporary ethical principles and their historic context and relevance to business practice. Identifying the ethical beliefs and values of self and others. Examining contemporary business problems from an ethical perspective.
Units: 3
Course Typically Offered: Summer

BA 104. Global Business
Prerequisites: G.E. Foundation and Breadth Area D. Studies globalization of business; role of trade, investment liberalization, and economic integration; technology; multinational enterprises. Examines influence of cultural, social, economic, political, geographic, philosophical, and environmental forces on individual and institutional competitiveness at regional, national and global levels; appropriate strategies. Multicultural/International M/I.*
Units: 3
Course Typically Offered: Fall, Spring

BA 105W. Business Communication
Prerequisites: satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement or approved equivalent, and junior standing. Business communication theory; analysis of communication alternatives; effective business writing and speaking; case studies. Meets the upper-division writing skills requirement for graduation.
Units: 3
Course Typically Offered: Fall, Spring

BA 150. Law and Business Activity
Prerequisite: BA 18. Examination of the law of bailments, shipments, sales, commercial paper, and secured transactions. Nature of property; and the relation of the legal, ethical, and regulatory environment to commercial transactions. Case studies; discussion and analysis.
Units: 3
Course Typically Offered: Fall, Spring

BA 152. Law for Entrepreneurs
Prerequisite: BA 18 or permission of the instructor. Special legal problems of entrepreneurs. Topics include hiring legal counsel; selecting a business form; operating small corporations; obtaining capital; using employees to foster organizational goals; and protecting intellectual property. Focus will be on preventative law. (Formerly BA 189T)
Units: 3
Course Typically Offered: Spring

BA 154. Real Estate Law
Meets California statutory course requirement for real estate broker's license. Prerequisite: BA 18. Legal aspects of acquisition and ownership of real estate; conveyances, mortgages, evidences of title; planning and zoning.
Units: 3
Course Typically Offered: Spring

BA 174. Introduction to International Business
Competing in global markets. Accommodating to differing cultural, legal, and political systems. Role of start-up and medium-sized firms, importing, exporting, international contracts, and investment, multi-country production and distribution. Forecasting and compensating for changing government policies, market conditions affecting profitability.
Units: 3
Course Typically Offered: Fall, Spring

BA 175. Tools and Techniques of International Business
Prerequisite: grade of C or better in BA 174 and FIN 120. Organizing international operations, entering foreign markets using global communications, finding business connections and potential imports or exports. Selling abroad, government support services, pricing, shipping, documentation, taxes, duties, quotas, trade licenses. International personnel strategies, accounting systems, travel, international business control.
Units: 3
Course Typically Offered: Fall

BA 176. The International Business Environment
Units: 3
Course Typically Offered: Spring

**BA 177. Legal Environment of World Commerce**
Prerequisites: BA 18; junior standing; BA 150 recommended. Seminar on international sales, documents, credits, dispute resolution; trade law, including GATT/WTO customs, tariff laws; regulatory ethical environment of international marketplace, intellectual property transfers, political risk, exploitation of labor and environment.

Units: 3
Course Typically Offered: Fall

**BA 179. Legal & Ethical Aspects of Sports Marketing**
Study and application of agency, franchise, government regulation, antitrust, contract and tort law principles as they affect the business of sports marketing. Review of ethical aspects of the sports marketing business.

Units: 3
Course Typically Offered: Spring

**BA 189T. Topics in Business Administration**
Studies in business administration.

Units: 1-3

**BA 189T. CSB Student Store Spring**
This course is designed to prepare students with real-life business experiences and offers a high-impact practice, project based learning opportunity for business majors. Students will participate in formation, management and daily operation of the store (physical store, online and special events). Activities include: product development, assortment planning, buying, inventory control, pricing, display, cashiering, sales, customer service, budget and financial management. Students are the owners of the SME. Products will be focused on Craig School of Business logo apparel and accessories. The STORE is operated with ASI oversight. (Offered Spring 2020)

Units: 2

**BA 190. Independent Study**
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

**BA 195I. Internship**
Prerequisite: permission of internship coordinator. Requires 150 hours of work at a pre-qualified, academically-related work station (business, government or nonprofit agency). Reflective journal, final report, and work station evaluation. As a course substitution, prior department approval required. Only one internship may count towards option requirements. CR/NC grading only.

Units: 3, Repeatable up to 6 units

Course Typically Offered: Fall, Spring

**CI 161. Mth Mtl Bus**
Units: 3, Repeatable up to 999 units

**EHD 154B. Final Student Teaching Seminar - Business**
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.

Units: 1

**EHD 155B. Studt Tchg Typ**
Prerequisites: admission to student teaching. EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.

Units: 5-10
Course Typically Offered: Fall, Spring

**EHD 155B. Studt Tchg Bus**
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.

Units: 5-10
Course Typically Offered: Fall, Spring

**FIN 30. Personal Financial Planning**
Personal financial analysis, planning, and management for lifelong decision making. Topics include financial planning strategies; money and credit management; home ownership; home, health, and auto insurance needs; savings and investment strategies; and retirement and estate planning. G.E. Breadth E1.

Units: 3

**FIN 120. Principles of Finance**
Prerequisites: ACCT 4A; DS 71; BA 105W or ENGL 160W (BA or ENGL course may be taken concurrently). Introduction to corporate financial management, investments, and financial institutions. Focus on financial policy, analysis, and valuation

Units: 5-10
Course Typically Offered: Fall, Spring

GE Area: E1
in a global environment. Topics include capital markets, risk and return, financial planning, capital budgeting, cost of capital, and working capital management.

Units: 4  
Course Typically Offered: Fall, Spring

FIN 121. Intermediate Financial Management  
Prerequisite: grade of C or better in FIN 120. Modern theories of corporate finance; financial decision making under uncertainty; efficient allocation of financial resources; advanced financial planning and control strategies.

Units: 3  
Course Typically Offered: Fall, Spring

FIN 122. Financial Institutions and Financial Markets  
Prerequisite: grade of C or better in FIN 120. Role of the Federal Reserve in monetary policy; interaction of fiscal and monetary policy; analysis of depository and nondepository financial institutions; regulatory issues in financial markets; public policy toward financial institutions.

Units: 3  
Course Typically Offered: Fall, Spring

FIN 123. Business Forecasting  
Prerequisite: DS 123; grade of C or better in FIN 120. Business activity analysis; methods of forecasting; general and specific forecasts; analysis of trends in product groups, sectors, regions, and other areas of the world economy; mathematical models and statistical decisions; analysis of case problems.

Units: 3  
Course Typically Offered: Fall, Spring

FIN 128. Investments  
Prerequisite: grade of C or better in FIN 120. Basics of investing; analysis of financial securities including debt and equity instruments, mutual funds, and exchange-traded funds; theories and techniques of asset allocation, active and passive portfolio management, and portfolio performance evaluations; fundamental analysis; technical analysis.

Units: 3  
Course Typically Offered: Fall, Spring

FIN 129A. Student-Managed Investment Funds I  
Prerequisite: grade of C or better in FIN 120. Analysis of investment strategies; analysis of investment vehicles; fundamental and technical analyses; assessing market and portfolio risks; evaluation of portfolio performance and business valuation. (Formerly FIN 129)

Units: 3  
Course Typically Offered: Fall, Spring

FIN 129B. Student-Managed Investment Funds II  
Prerequisite: Grade of B or better in Fin 129A and permission of instructor. Management of endowment funds; analysis of investment policy statements; analysis of investment styles; analysis of investment strategies; active vs. passive investing; portfolio protection and hedging; evaluation and reporting of portfolio performance.

Units: 3  
Course Typically Offered: Fall, Spring

FIN 131. Entrepreneurial Finance  
Prerequisite: grade of C or better in FIN 120. Using financial and entrepreneurial perspectives to make better decisions at each stage of the entrepreneurial process, from identification of opportunity to harvest. Issues: venture capital markets, deal structuring, valuations, later stage financing, going public and other harvesting methods.

Units: 3  
Course Typically Offered: Fall, Spring

FIN 133. Futures Markets  
Prerequisite: grade of C or better in FIN 120. Use of futures contracts as speculative investments and as hedging devices to reduce risk in securities portfolios and in domestic and international business operations. Topics: financial futures, commodity futures, futures markets, fundamental and technical analyses, hedging strategies.

Units: 3

FIN 138. Derivatives  
Prerequisite: grade of C or better in FIN 120. Introduction to the use and pricing of derivative assets such as options, futures, swaps, and option-like features embedded in corporate/treasury securities; mathematical concepts underlying derivative markets and contracts and basic pricing models; derivative strategies for hedging and arbitrage.

Units: 3

FIN 139. Financial Policy and Strategy  
Prerequisites: FIN 121 and last-semester senior standing. Integration and application of financial analysis, policy, strategy, and theory across business functional areas in a globally competitive environment. Case analysis/computer simulations included.

Units: 3

FIN 143. Risk and Insurance  
Fundamentals of insurance and risk management. Covers the basic areas of property, liability, auto, life, health, and social insurance. Other areas including marketing, underwriting, claims, investments, and loss control.

Units: 3
FIN 147. Retirement Planning
Fundamentals of retirement planning; qualified and nonqualified plans. Course will cover material required to prepare for the Certified Financial Planning designation. Topics include retirement needs and objectives, government regulations, various business and individual retirement plans, plan funding and investing, plan installation, administration, and termination, and social security.
Units: 3

FIN 150. Financial Planning
Prerequisite: permission of instructor. The concept of a total coordinated system of personal financial planning; evaluate existing programs, design improved plans and coordinate execution to achieve stated objectives. Includes data gathering, the psychology of financial counseling, and the counselor's fiduciary responsibilities. Case studies.
Units: 3

FIN 178. International Finance
Prerequisite: grade of C or better in FIN 120. Evolution of international monetary system; balance of payment accounting; foreign exchange; forecasting exchange rates; management of foreign exchange risk; political risk analysis; foreign direct investment; international money and capital markets. Eurocurrency markets; international banking; international monetary and banking organizations.
Units: 3
Course Typically Offered: Fall, Spring

FIN 180. Real Estate Principles
Meets California statutory course requirement for real estate salesperson's and broker's license. Theory and practice of urban land use. Location and legal dimensions, planning, and market processes; financial and investment decisions in real estate; computer analysis and case studies.
Units: 3
Course Typically Offered: Fall

FIN 181. Real Estate Appraisal
Prerequisite: grade of C or better in FIN 120 and FIN 180. Theory and determinants of real property value. Methods used in urban and rural property appraisals. Statistical techniques and the appraisal process; special purpose appraisals. Fieldwork required.
Units: 3
Course Typically Offered: Spring

FIN 182. Real Estate Practices
Meets California statutory course requirement for real estate broker's license. Relationship between public and private organizations active in real estate; company formation; selling and marketing techniques; financing; advertising; aspects of taxation; escrow procedure; property insurance; computer analysis and case studies.
Units: 3
Course Typically Offered: Fall

FIN 183. Real Estate Finance
Prerequisite: grade of C or better in FIN 120 and FIN 180. Characteristics and underwriting standards of institutions furnishing funds for real estate investment and development. Alternative financial instruments and their effect on property economics and value.
Units: 3
Course Typically Offered: Spring

FIN 185. Housing Market Analysis
Prerequisite: junior standing. Analysis of local and regional housing markets and submarkets; availability of market data; primary versus secondary data; design of data collecting instruments; interviewing techniques and interviewer bias; data analysis and presentation of findings; field studies required.
Units: 3

FIN 186. Business and Real Estate Economics
Prerequisites: ECON 40, ECON 50. Applications of economic principles in business and real estate management; measure of profit, analysis of demand, cost analysis; price, wage, and public policies; case studies, analysis.
Units: 3
Course Typically Offered: Spring

FIN 189T. Topics in Finance
Topics covered in this course include money and credit management, savings and investment strategies, analysis of financial securities including debt and equity instruments, mutual funds and exchange traded funds, fundamental and technical analysis, and retirement and estate planning.
Units: 3

FIN 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

FIN 195I. Internship
Prerequisite: permission of internship coordinator. Requires 150 hours of work at a pre-qualified, academically-related work station (business, government or nonprofit agency). Reflective journal, final report, and work station evaluation. As a course substitution, prior department approval required. Only one internship may count towards option requirements. CR/NC grading only.
Units: 3, Repeatable up to 6 units
FOOD SCIENCE & NUTRITION

CULG 50. Culinary Science I
Introduction to high quality food. Emphasis on principles of food safety, nutrition, food preparation, and sensory evaluation. (2 lecture, 2 lab hours) (Course fee, $25)
Units: 3
Course Typically Offered: Fall, Spring

CULG 55. Culinary Science II
Prerequisite: CULG 50. Advanced preparation of high quality food. Includes nouvelle cuisine, advanced plate presentation, advanced knife culinary skills and professional methods of production, including advanced cooking techniques. (2 lecture, 3 lab hours) (Course fee, $25)
Units: 3
Course Typically Offered: Spring

CULG 65. Culinary Science III
Prerequisite: CULG 50. Fundamentals of baking including dough, quick breads, yeast breads, pies, pastries, cakes and cookies. Instruction in flours, fillings and ingredients. Topics include baking terminology, tools and equipment use, formula conversions, functions of ingredients, and the use of proper flours. (2 lectures, 3 lab hours) (Course Fee $25)
Units: 3

CULG 151. Food Product Development
Prerequisites: CULG 55, FSC 100, FSC 112. Experimental approach to development of new food products. Explores both scientific and marketing parameters of product development. Includes concepts of traditional wine and food pairings, food styling and presentation, and other culinary techniques. (2 lecture, 3 lab hours)
Units: 3

CULG 152. Techniques for Healthy Cooking
Prerequisites: CULG 50; NUTR 53 or NUTR 54 or permission of instructor; computer competency recommended. Planning a nutritious diet implementing the Dietary Guidelines for Americans. Cooking principles, recipe modification, and food selection at supermarkets and restaurants to increase dietary complex carbohydrates and decrease fat, sugar, and sodium. (2 lecture, 2 lab hours) (Course fee, $25)
Units: 3
Course Typically Offered: Fall, Spring

FN 200. Research Methods in Food and Nutrition
Prerequisite: permission of instructor. Quantitative and qualitative research design in food and nutritional sciences. Methods of data collection and analysis. Evaluation of research design and outcomes. Reporting research results. Students will develop a research proposal.
Units: 3

FN 209. Vitamins and Biocatalysts
Prerequisite: CHEM 150. Mechanisms of action of vitamins, coenzymes, and cofactors in biological transformations involving food processing and human nutrition. Emphasis on the fundamental nature of biochemical reactions related to food science and nutrition. (Formerly AGRI 209)
Units: 3

FN 221T. Topics in Food Science and Nutrition
Prerequisites: upper-division food science and nutrition course appropriate to study topic; permission of instructor. Advanced studies in a given area of food science and nutrition. Some topics may require lab hours.
Units: 3, Repeatable up to 9 units

FN 223. Food, Nutrition, and Health
Prerequisite: CHEM 150. Review and discussion of the recent scientific literature relating to food consumption, nutrient intake, and human health.
Units: 3

FN 229. Seminar
Prerequisite: permission of instructor. Students investigate and present current research problems. Observation and evaluation of additional assigned seminars. Oral and written reports required.
Units: 1, Repeatable up to 3 units
Course Typically Offered: Fall, Spring

FN 230. Advanced Nutrition Counseling
Prerequisite: NUTR 157. Advanced counseling techniques including learning and behavioral theories and principals of goal setting. Design, delivery, and evaluation of nutrition counseling. Development and evaluation of nutrition education materials. Role-playing and case studies assigned. (Formerly FN 221T)
Units: 3

FN 250. Food and Nutrition Resource Management
Examine management resources (human, financial, and physical) in a variety of industry and practice settings related to foods and nutrition. Development of a business and marketing plan. Group projects, case studies, and selected topics from current literature.
Units: 3
**FN 290. Independent Study**  
See Academic Placement -- Independent Study. Approved for RP grading.  
Units: 1-3

**FN 292. Readings in Food Science and Nutrition**  
Prerequisite: permission of instructor. Individually directed readings in a field of special concern to students in the graduate program; appropriate reports and evaluations required; individual conferences, no formal class meetings. Approved for RP grading.  
Units: 1-3

**FN 299. Thesis**  
Prerequisite: prior advancement to candidacy. See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.  
Units: 2-6

**FN 299C. Thesis Continuation**  
Pre-requisite: Thesis 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.  
Units: 0

**FSC 1. Introduction to Food Science and Technology**  
Survey of specific types of industries, chemical composition, microbiological concerns, processing, and environmental risks and their control to ensure food quality and safety. Introduction to governmental regulation. Current issues in the food industry.  
Units: 3  
Course Typically Offered: Fall, Spring

**FSC 41. Introduction to Food and Dairy Processing**  
Prerequisites: FSC 1. Introduction to the technology of processing foods, including dairy products with special reference to unit operations and sanitation. Laboratory includes computer applications related to food technology. (2 lectures, 2 lab hours) (Field trips) 3RD  
Units: 3  
Course Typically Offered: Spring

**FSC 100. Sensory Evaluation**  
Prerequisite: MATH 11 or AGBS 71. Analysis, measurement, and methods used in sensory evaluation of foods. (2 lecture, 3 lab hours)  
Units: 3

**FSC 112. Food and Dairy Chemistry**  
Prerequisites: CHEM 150; FSC 1. Study of the functional properties of water, dispersed systems, carbohydrates, proteins, enzymes, lipids, and colligative properties with respect to their role in processing and shelf-life. Computer applications. (3 lecture, 3 lab hours)  
Units: 4  
Course Typically Offered: Fall

**FSC 115. Food Analysis**  
Prerequisites: FSC 41 or FSC 112; MATH 11 or AGBS 71; or permission of instructor. Application of analytical techniques and instrumental methods used in the analysis of food composition. Laboratory analyses include proximate, fatty acids, Brix, titratable acidity, mineral, peroxidase, peroxide values, reducing sugars, vitamins, and filth. (2 lecture, 3 lab hours)  
Units: 3

**FSC 120. Quality Assurance in the Food and Dairy Industries**  
Prerequisites: FSC 1; FSC 178; CHEM 1A or CHEM 3A; MATH 11 or AGBS 71; or permission of instructor. Physical, chemical, and microbiological methods for determining quality in food and dairy processing. Total Quality Management (TQM) and Statistical Quality Control (SQC) principles utilized. Food product standards and Hazard Analysis Critical Control Points (HACCP) guidelines and applications. Computer applications. (2 lecture, 3 lab hours) (Field trips)  
Units: 3

**FSC 125. Food and Dairy Microbiology**  
Prerequisites: FSC 41, FSC 178, BIOL 20 or permission of instructor. Physical, chemical, and biological control of microorganisms used in foods. Beneficial microorganisms used in food and dairy production. Laboratory emphasis on microbiological methods used in examining foods. Computer applications. (2 lecture, two 3-hour labs) (Field trips)  
Units: 4  
Course Typically Offered: Spring

**FSC 141. Fruit, Vegetable, and Edible Oil Processing**  
Prerequisites: FSC 41, FSC 178; senior standing. Characteristics of raw fruits and vegetables. Application of storage and thermal dehydration, refrigeration/freezing, waste management, and packaging principles that influence quality. Computer applications. (3 lecture, 3 lab hours) (Field trips)  
Units: 4

**FSC 142. Dairy Processing**  
Prerequisite: FSC 41, FSC 178; senior standing; or permission of instructor. Unit operation approach to processing, including
the three major steps of processing (raw material preparation, processing and packaging.) Overview of applied processing such as fluid milk, concentrated milks, cream, non-fat dried milk (NFDM) powder, ice cream, butter, and cheese. (3 lecture, 3 lab hours) (Field trips)

Units: 4
Course Typically Offered: Fall

FSC 144. Food Engineering
Prerequisites: FSC 41; PHYS 2A; MATH 75 or equivalent; or permission of instructor. The application of the engineering concepts and unit operations that include energy balance, heat transfer, fluid flow, thermodynamics, and mass transfer. (2 lecture, 3 lab hours) (Field trips)

Units: 3
Course Typically Offered: Fall, Spring

FSC 162T. Topics in Food Science
Prerequisites: FSC 50; CULG 50; NUTR 54. Topics relating to food science. Some topics may have labs.

Units: 1-4

FSC 161. Food Laws, Regulations, Inspection, and Grading
Prerequisites: FSC 1. Federal and state laws and regulations pertaining to the food industry. Federal Register, Code of Federal Regulations, United States codes, California state codes, and other government documents as they pertain to the FDA, USDA, EPA, and other agencies. Grading and inspection of food products. (2 lectures, 2 activity hours)

Units: 3
Course Typically Offered: Fall

FSC 180. Undergraduate Research
Prerequisites: junior or senior standing and permission of instructor. Exploratory work on a suitable problem in food science. Approved for RP grading.

Units: 1-4
Course Typically Offered: Fall, Spring

FSC 190. Independent Study
See Academic Placement - Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

FSC 192. Readings and Conference
Prerequisite: permission of instructor. Individually directed readings; reports and evaluation. (Hours arranged)

Units: 1-3

Course Typically Offered: Fall, Spring

FSC 193I. Supervised Work Experience
Prerequisites: second semester junior standing and permission of instructor. Supervised work experience in food science. CR/NC grading only.

Units: 1-6
Course Typically Offered: Fall, Spring

FSC 199. Senior Seminar
Prerequisites: permission of instructor. Faculty, student, and industry presentations of current food science topics. Discussion of topics of practical importance to graduating students.

Units: 1
Course Typically Offered: Spring

FSM 60. Food Safety for Foodservice Professionals
Up-to-date information on all aspects of handling food from receiving and storing to preparing and serving.

Units: 1
Course Typically Offered: Fall, Spring

FSM 131. Introduction to Food Systems Management
A managerial and systems approach to food service operations. Impact of legislation, labor relations, and marketing on industry.

Units: 3
Course Typically Offered: Fall, Spring

FSM 133. Quantity Food Production
Prerequisites: FSM 60, FSM 131, CULG 50. Preparation and service in quantity food service operations including techniques for making stocks, soups, and sauces. Ethnic cooking, menu planning, recipe standardization, equipment and layout, production controls, work simplification, and quality assurance. (2 lecture, 3 lab hours) (Course fee, $25)

Units: 3
Course Typically Offered: Fall

FSM 134. Cost Analysis in Food Systems Management
Prerequisites: FSM 133; computer competency recommended. Advanced concepts of planning, analyzing, decision-making and reporting procedures unique to food systems management. Cost analysis and control, computer applications, and purchasing in food service. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Spring

FSM 135. Institutional Experience
Prerequisites: FSM 134 or permission of instructor; health clearance and health and accident insurance required. Supervised work experience in food systems management. (1 lecture, 4 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

FSM 162T. Topics in Food Systems Management
Prerequisites: CULG 50; FSM 131; NUTR 54. Topics relating to food systems management.
Units: 1-4

FSM 180. Undergraduate Research
Prerequisite: permission of instructor. Exploratory work on a suitable problem in food systems management. Approved for RP grading.
Units: 1-4
Course Typically Offered: Fall, Spring

FSM 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

FSM 192. Readings and Conference
Prerequisite: permission of instructor. Individually directed readings; reports and evaluation. (Hours arranged)
Units: 1-3
Course Typically Offered: Fall, Spring

FSM 193I. Supervised Work Experience
Prerequisite: permission of instructor. Supervised work experience in food systems management. A health clearance may be required. CR/NC grading only. (CSU liability insurance fee, $8)
Units: 1-6
Course Typically Offered: Fall, Spring

NUTR 147. Nutrition and the Athlete
Prerequisite: NUTR 53 or NUTR 54. Intermediate principles of nutrition and the application of these principles to diet and nutritional status. Interactions among diet, nutritional status, training, response, adaptation and performance.
Units: 3
Course Typically Offered: Fall, Spring

NUTR 149. Food and Nutrition Communication
Prerequisites: NUTR 156 is required for Certificate of Dietetics option students, NUTR 153 is required for non-Certificate of Dietetics option students or instructor permission; computer competency recommended. Integrating and translating food and nutritional science concepts into easily understood consumer messages. Activities include developing an assortment of instructional materials using a variety of media, writing lesson plans, and making presentations to a target audience. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Spring

NUTR 153. Advanced Nutrition
Units: 3
Course Typically Offered: Spring

NUTR 156. Nutrition Assessment
Prerequisites: NUTR 153, and COUN 174. Must be concurrently enrolled in NUTR 175. Assessment of nutritional status emphasizing dietary evaluation, nutrition care planning, and intervention. Application of dietary standards and principles for disease prevention and control. Methods for monitoring quality of nutritional care requiring application of nutrition counseling skills. (2 lecture, 3 lab hours) (Formerly NUTR 157A)
Units: 3
Course Typically Offered: Fall

NUTR 157. Medical Nutritional Therapy
Prerequisite: NUTR 156. Advanced concepts of nutritional therapy in disease. Identification of goals of nutritional therapy, principles of dietary modification, and meal planning for specific conditions. Calculation of diet prescriptions and application of nutrition counseling skills for medical conditions. (2 lecture, 3 lab hours)(Formerly NUTR 157B). Must be accepted in the Registered Dietitian track in the Dietetics Option.
NUTR 160. Nutrition across the Life Cycle 1
Prerequisite: NUTR 54. The influence of nutrition on age, growth, and normal development. Nutrition recommendations from conception through toddler, preschooler, and childhood. Socioeconomic, cultural, and psychological factors influencing food and nutrition behavior. The role of exercise throughout the life cycle.
Units: 3
Course Typically Offered: Spring

NUTR 162T. Topics in Nutrition
Prerequisites: NUTR 54, NUTR 160. Topics relating to nutrition. Some topics may have labs.
Units: 1-4

NUTR 162T. Advanced Nutrition - Micronutrients and Fluids Metabolism
Micronutrients and fluid metabolism with an emphasis on regulation, structure, digestion, absorption, transport, and distribution. (Offered Fall 2019 and Spring 2020)
Units: 3

NUTR 165. Nutrition Across the Life Cycle 2
Prerequisite: NUTR 160. The influence of nutrition on age, growth, and normal development. Nutrition recommendations from child and preadolescent through late adulthood. Socioeconomic, cultural, and psychological factors influencing food and nutrition behavior. The role of exercise throughout the life cycle.
Units: 3
Course Typically Offered: Spring

NUTR 166S. Community Nutrition
Prerequisite: NUTR 165. Survey of nutrition programs created to improve community health. Development and examination of public health nutrition policy. Proposal writing.
Units: 3
Course Typically Offered: Fall

NUTR 175. Senior Dietetics Seminar
Co-requisite: Must be enrolled concurrently in NUTR 156. Prepares students to assume leadership positions in dietetics. Provides a forum where students focus on professional development, ethics and lifelong learning. Capstone course for seniors applying to dietetic internship programs. Open only to students admitted to the Certificate in Dietetics Program.
Units: 1
Course Typically Offered: Fall

NUTR 180. Undergraduate Research
Prerequisite: permission of instructor. Exploratory work on a suitable problem in nutrition and dietetics. Approved for RP grading.
Units: 1-4
Course Typically Offered: Fall, Spring

NUTR 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

NUTR 192. Readings and Conference
Prerequisite: permission of instructor. Individually directed readings; reports and evaluation. (Hours arranged)
Units: 1-3
Course Typically Offered: Fall, Spring

NUTR 193I. Supervised Work Experience
Prerequisites: permission of instructor. Supervised work experience in dietetics and nutrition. CR/NC grading only.
Units: 1-6
Course Typically Offered: Fall, Spring

MODRN & CLSCL LANG & LIT

CI 161. Mth Mtl F L
Units: 3, Repeatable up to 999 units

EHD 154B. Final Student Teaching Seminar - Spanish
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 1
EHD 154B. Final Student Teaching Seminar - German
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 1

EHD 154B. Final Student Teaching Seminar - French
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 1

EHD 155B. Studt Tchg Span
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

EHD 155B. Studt Tchg Germ
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

EHD 155B. Studt Tchg Fren
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10

FL 10T. Topics in Foreign Language
Beginning or intermediate speaking, listening, reading, and writing skills in a selected language.
Units: 1-4

FL 131. Trends in Foreign Language Teaching
Current trends and issues in foreign language teaching. Evaluation of recent teaching materials. May include on-campus practice in teaching beginning languages.
Units: 3

FL 170. Community Service
Directed fieldwork in a project which uses language skills developed through previous study of a foreign language. Projects may include working with public school foreign language teachers and students, interpreting/ translating for public/ private service agencies, or other approved projects. CR/NC grading only.
Units: 1-3

FL 190. Independent Study
See Academic Placement -- Independent Study. Approved for SP grading.
Units: 1-3

FREN 1A. Elementary French
Beginning course in conversational and written French. Not open to students with two or more years of high school French credit.
Units: 4
Course Typically Offered: Fall, Spring

FREN 1B. Elementary French
Prerequisite: G.E. Foundation A2; FREN 1A recommended or permission of instructor. Second semester course in conversational and written French. Not open to those with three or more years of high school French credit. G.E. Breadth C2.
Units: 4
Course Typically Offered: Fall, Spring

GE Area: C2

FREN 1A. Elementary French
Beginning course in conversational and written French. Not open to students with two or more years of high school French credit.
Units: 4
Course Typically Offered: Fall, Spring

FREN 1B. Elementary French
Prerequisite: G.E. Foundation A2; FREN 1A recommended or permission of instructor. Second semester course in conversational and written French. Not open to those with three or more years of high school French credit. G.E. Breadth C2.
Units: 4
Course Typically Offered: Fall, Spring

GE Area: C2

FREN 2A. French for Communication
Prerequisite: G.E. Foundation A2; FREN 1B or equivalent recommended. Second year course that emphasizes speaking and reading, and a review of basic French grammar. G.E. Breadth C2.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

FREN 2B. French for Communication
Prerequisite: G.E. Foundation A2; FREN 2A or equivalent recommended. Second year course that emphasizes speaking and reading skills. G.E. Breadth C2.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

FREN 4. Reading and Writing
FREN 2B or equivalent recommended. Opportunity to increase reading and writing skills in preparation for upper-division coursework in French.
Units: 3
Course Typically Offered: Fall

FREN 5. Conversation
FREN 2A or equivalent recommended. May be taken concurrently with FREN 2A or FREN 4. Development of listening and speaking skills. Exclusive use of French in an informal class atmosphere. Conversations on assigned topics, extemporaneous discussions.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

FREN 103. Advanced Grammar and Composition
Two semesters of Intermediate French recommended. To be taken twice for the major. Written assignments in French on varied topics with emphasis on composition. Written exercises in French on specific points of grammar. (Fall semester)
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

FREN 109. French Literature, Culture, and Society from the Middle Ages to Today
Prerequisites: G.E. Foundation and Breadth Area C. Two semesters of Intermediate French recommended. Intellectual, cultural and social background of major literary movements and representative authors from the earliest period to the present. Selected readings. Taught in French. (Fall semester) G.E. Integration IC.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: IC

FREN 110. French Theater
FREN 109 recommended. Drama in France from the Renaissance to the present, with emphasis on the 17th and 20th centuries. Reading and discussion of representative works.
Units: 3
Course Typically Offered: Fall

FREN 111. The French Novel
FREN 109 recommended. The novel as a reflection of French society. Analysis of major works from various periods.
Units: 3
Course Typically Offered: Fall

FREN 112. French Prose: Essay and Short Story
FREN 109 recommended. Analysis of prose works by such authors as Montaigne, Voltaire, Maupassant, Camus, Sartre.
Units: 3
Course Typically Offered: Fall

FREN 113. French Poetry
FREN 109 recommended. Introductory course in poetry as a genre; principles of French versification. Students will be exposed to major contributions of the French in poetry. Thematic and/or chronological presentations (movements, "isms").
Units: 3
Course Typically Offered: Fall

FREN 120T. Topics in French Civilization
FREN 103 recommended or permission of instructor. Possible topics: French contributions to Western Civilization (art, music, architecture, history, science). Special emphasis on contemporary France. The history of Anglo-French and Franco-American relations. Linguistic, cultural, intellectual, political, commercial, and diplomatic similarities and differences explored. Taught in French.
Units: 3, Repeatable up to 6 units

FREN 132. French Phonology and Structural Analysis
Completion of one semester of FREN 103 recommended. As a progression toward mastery, an investigation of the French language as a functioning code of verbal communication. Relationships of oral/written aspects and contrasts with American English. Intensive drill on individual pronunciation problems.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

FREN 149. Voices of Africa
Prerequisites: G.E. Foundation and Breadth Area C. Study of representative works by such writers as Achebe, Senghor, and Mphahlele which reveal the attitudes of modern Africans toward their land, their traditions, and their encounter with the 20th century world. Course taught in English. G.E. Integration IC.
Units: 3
Course Typically Offered: Spring

FREN 150. Advanced Conversation
Units: 3
FREN 160T. Selected Topics in French Studies
FREN 103 recommended or permission of instructor. Topics chosen from French literature (genre, themes, movements), from French linguistics (History of the Language; Contrastive Analysis: English/French), or French Culture and Civilization.
Units: 1-3

FREN 160T. Francophone Cuisine and Culture
This is an in-depth study of French and Francophone cultures through a study of their regional cuisines as depicted in great works of literature, film and media. This course seeks to understand regional similarities and differences, traditions and trends as we integrate reading, writing and talking about Francophone cuisines. (Offered Spring 2020)
Units: 3

FREN 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

FREN 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 3, Repeatable up to 6 units

GERM 1A. Elementary German
Beginning course. Imparts basic speaking, listening, reading, and writing abilities in German as well as introduces the cultures of Germany, Switzerland and Austria. Not open to students with two or more years of high school German credit.
Units: 4
Course Typically Offered: Fall

GERM 1B. Elementary German
Prerequisite: G.E. Foundation A2; GERM 1A recommended or permission of instructor. Second semester course. Develops speaking, listening, reading, and writing abilities; broadens knowledge of German, Swiss and Austrian cultures. Not open to those with three or more years of high school German. G.E. Breadth C2.
Units: 4
Course Typically Offered: Spring

GERM 2A. Intermediate German
Prerequisite: G.E. Foundation A2; GERM 1B recommended or permission of instructor. Third semester course. Builds reading, conversational, and writing facilities in German; develops linguistic and cultural mastering of varied, increasingly complex situations. General review of grammar syntax; cultural topics. G.E. Breadth C2.
Units: 3

GERM 2B. Intermediate German
Prerequisite: G.E. Foundation A2; GERM 2A recommended or permission of instructor. Fourth semester course. Builds further reading, conversational, and writing facilities in German; develops general linguistic and cultural competence. General review of grammar and syntax; cultural topics. G.E. Breadth C2.
Units: 3
Course Typically Offered: Spring

GERM 8T. Selected Topics in German
GERM 1A recommended or permission of instructor. Language experience outside classroom stressed in oral topics. Problem vocabulary and grammar topics. CR/NC grading only.
Units: 1, Repeatable up to 2 units

GERM 101. Composition
GERM 2B recommended or permission of instructor. Development of written expression through intensive practice, vocabulary building, grammar and syntax review, cooperative work on improving composition, analysis of varying styles. May be taken twice. (Fall semester)
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall

GERM 103T. German Culture and Civilization
Studies in principal aspects of German (also Austrian and Swiss) history, thought, customs, institutions, film, arts, music, folklore, contemporary life; influence on Western civilization. Taught in English.
Units: 3, Repeatable up to 6 units

GERM 112. German Literature to 1750
GERM 2B recommended or permission of instructor. In-depth studies of German literature prior to 1750: Medieval, Renaissance, Reformation, Baroque, Enlightenment; including such authors as Wolfram, Walther von der Vogelweide, Luther, Grim melshausen. Critical analysis of texts, lecture, discussion, student reports.
Units: 3

Course Typically Offered: FallGE Area: C2
GERM 114. German Literature through the Classical Age
GERM 2B recommended or permission of instructor. From the beginnings to Goethe's death in 1832, concentrating on the Classical Age (Lessing, Schiller, Goethe). Critical analysis of texts, lecture, discussion, student reports.
Units: 3

GERM 116. Nineteenth Century Literature
GERM 2B recommended or permission of instructor. Investigates major 19th century authors such as Brentano, Tieck, Hoffmann, Buchner, Stifter, Keller, Raabe, Fontane. Critical analysis of texts, lecture, discussion, student reports.
Units: 3

GERM 118A. Modern Literature: 1890-1945
GERM 2B recommended or permission of instructor. Investigates Classical Modernity (1890-World War II), including such authors as Kafka, Rilke, Mann, Brecht, Musil. Critical analysis of texts, lecture, discussion, student reports.
Units: 3

GERM 118B. Contemporary Literature: 1945-Present
GERM 2B recommended or permission of instructor. Investigates the Postmodern Age (World War II to the present), including such author as Grass, Boll, Frisch, Handke, Bernhard, Wolf. Critical analysis of texts, lecture, discussion, student reports.
Units: 3

GERM 150. Advanced Conversation
GERM 2B or concurrently recommended or permission of instructor. Intensive practice in advanced oral German to cultivate ease within a number of speech situations. Emphasis on current affairs in Germany, Austria, and Switzerland. (Spring semester)
Units: 3, Repeatable up to 6 units
Course Typically Offered: Spring

GERM 160T. Topics in German Studies
Intensive analysis, discussion, and evaluation of significant facets of German life through the study of specific movements, literary problems, themes, films, cultural artifacts, music, institutions, epochs, folklore, and regions.
Units: 1-3

GERM 160T. Visualizing German History: Comics and Film
This course provides a historical overview, tracing the origin, style and subject matter of early German comics and films to more contemporary visual representations, such as blogs, memes and other online representations. The course addresses how comics and film approach the memory of WWI and WWII, as well as the immediate post-war period, leading up to German reunification. The central question of this course is how contemporary generations remember through visual media and explores how comics and films invited the reader to participate imaginatively in German history. (Offered Spring 2020)
Units: 3

GERM 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

GERM 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

GRK 1A. Elementary Greek
Units: 3
Course Typically Offered: FallGE Area: C2

GRK 1B. Elementary Greek
Prerequisite: G.E. Foundation A2, GRK 1A or permission of instructor. Second semester course in Classical and New Testament Greek; completion of the fundamentals of Greek grammar. Emphasis on translation practice and composition skills. Background study: Greek culture and its relevancy to the modern world. G.E. Breadth C2.
Units: 3
Course Typically Offered: SpringGE Area: C2

GRK 10. The Rise of Rationalism: 5th C. Athens
The origins of argumentation, logic, rhetoric, inductive thinking, and the role of literature in fifth-century Athens, as reflected in selections from Plato, Thucydides, Euripides, and the orators. Discussions and lectures. Conducted in English.
Units: 3

GRK 131T. Greek Literature
Prerequisite: GRK 1B. Concentration on a major Classical Greek poet or prose author. Translation and discussion. Research reports on literary, historical, and textual problems.
Units: 3, Repeatable up to 12 units

GRK 131T. Gaza's Homer
This course focuses on Homer's Iliad, still considered by many to be the greatest work of literature in the Western canon. We will read selections of the poem and discuss the work's reception among ancient and early modern readers, focusing
especially on the work of the Renaissance humanist Theodorus Gaza. (Offered Spring 2020)

Units: 3

ITAL 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

ITAL 1A. Elementary Italian
Beginning course in conversational and written Italian with special emphasis on Italian culture (literature, music, philosophy and lifestyle). Not open to those with two or more years of high school Italian credit.
Units: 4
Course Typically Offered: Fall, Spring
GE Area: C2

ITAL 1B. Elementary Italian
Prerequisite: G.E. Foundation A2; ITAL 1A recommended or permission of instructor. Second semester course in conversational and written Italian. Not open to those with three or more years of high school Italian credit. G.E. Breadth C2.
Units: 4
Course Typically Offered: Fall, Spring
GE Area: C2

ITAL 2A. Intermediate Italian
Prerequisite: G.E. Foundation A2; ITAL 1B recommended or permission of instructor. Review of grammar and syntax; composition; oral practice, reading of short stories and plays. G.E. Breadth C2.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

ITAL 2B. Intermediate Italian
Prerequisite: G.E. Foundation A2; ITAL 2A recommended or permission of instructor. Oral and written composition; reading of short stories, novels, biographies. G.E. Breadth C2.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

ITAL 5. Conversation
ITAL 1B recommended. May be taken concurrently with ITAL 2A or ITAL 2B. Development of listening skills and oral fluency through discussion, vocabulary exercises, and conversations on assigned topics.
Units: 3, Repeatable up to 6 units

ITAL 160T. Selected Topics in Italian Studies
Topics chosen from Italian literature (genre, themes, movements, particular authors), from Italian culture or civilization, or from Italian cinema.
Units: 3, Repeatable up to 9 units

ITAL 160T. How to Become a Leader: from Machiavelli to Mussolini
This course, taught in English, explores the lives and times of the two most known (and infamous) Italian politicians, Niccolo Machiavelli, the greatest political thinker of the Renaissance (16th century), and Benito Mussolini, the founder of Fascism (20th century) and their influence on the United States. Students will be exposed to the main ideas and events of Italian Renaissance and Fascism, read Machiavelli's masterpieces and Mussolini's major speeches and learn about how their thoughts influenced the United States. Students will also compare Machiavelli's bold vision of a successful leader with Mussolini's ultimate failure in incarnating such a vision. (Offered Spring 2020)
Units: 3

ITAL 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

LATIN 1A. Elementary Latin
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

LATIN 1B. Elementary Latin
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

LATIN 131T. Latin Literature
Prerequisite: LATIN 1B. Concentration on a major Latin poet or prose author. Translation and discussion. Research reports on literary, historical, and textual problems.
Units: 3, Repeatable up to 12 units

LATIN 131T. Cicero-Pro Archia Poeta
In this class we will read the speech delivered in 62 BC by M. Tullius Cicero, advocating for the grant of citizenship to the Poet Archias (a Greek who migrated to Rome in his early 20s), whose status was called into question amidst the political squabbling of Roman elites. In the Pro Archia Poeta Oratio, Cicero-Rome's greatest orator and the last great patriot of the failing res publica-gives a rousing defense of the artes liberales
and the benefits of humanist education for a free citizen, addressing the complexities relating to exclusivity of citizen status in a republic. It is a work that has as much meaning in our own time as it did for the revolutionary times in which the author lived. (Offered Spring 2020)

Units: 3

LATIN 132. Classical Mythology
Greco-Roman myths, emphasis on their impact on the fine arts and literatures of the Western World. Illustrated lectures. Taught in English.

Units: 3

LATIN 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3

PORT 1A. Elementary Portuguese
Prerequisite: G.E. Foundation A2. Beginning course in conversational and written Portuguese, including Luso-Brazilian cultural traditions (literature, music, philosophy and lifestyle). Not open to those with two or more years of high school Portuguese credit.

Units: 4
Course Typically Offered: FallGE Area: C2

PORT 1B. Elementary Portuguese
Prerequisite: G.E. Foundation A2; PORT 1A recommended or permission of instructor. Second semester course in conversational and written Portuguese. Not open to those with three or more years of high school Portuguese credit. G.E. Breadth C2.

Units: 4
Course Typically Offered: SpringGE Area: C2

PORT 2A. Intermediate Portuguese
PORT 1B recommended or permission of instructor. Intermediate course emphasizing speaking, listening, reading longer texts, writing compositions, grammar, and Luso-Brazilian culture.

Units: 3
Course Typically Offered: Fall

PORT 2B. Intermediate Portuguese
PORT 2A recommended or permission of instructor. Continuation of PORT 2A emphasizing speaking, listening, grammar, reading longer literature, writing compositions, and Luso-Brazilian culture.

Units: 3

SPAN 1A. Elementary Spanish
Beginning course in conversational and written Spanish. Emphasis on reading, writing, listening, speaking, and culture of Spanish-speaking peoples.

Units: 4
Course Typically Offered: Fall, SpringGE Area: C2

SPAN 1B. Elementary Spanish
Prerequisite: G.E. Foundation A2; SPAN 1A recommended or permission of instructor. Second semester course in conversational and written Spanish. G.E. Breadth C2.

Units: 4
Course Typically Offered: Fall, SpringGE Area: C2

SPAN 2A. Spanish for Communication

Units: 3
Course Typically Offered: Fall, SpringGE Area: C2

SPAN 2B. Spanish for Communication
Prerequisite: G.E. Foundation A2. Second year course the emphasizes speaking and reading skills. G.E. Breadth C2.

Units: 3
Course Typically Offered: Fall, SpringGE Area: C2

SPAN 3. Reading and Writing
Prerequisite: G.E. Foundation A2; SPAN 2A or SPAN 2B recommended. Opportunity to increase reading and writing skills in preparation for upper-division coursework in Spanish. G.E. Breadth C2.

Units: 3
Course Typically Offered: Fall, SpringGE Area: C2

SPAN 4A. Spanish for the Bilingual Student
Prerequisite: G.E. Foundation A2. For the native speaker of Spanish who has intensive life experience using the Spanish language. Grammar is stressed, but speaking, reading, and writing skills are also further developed. G.E. Breadth C2.

Units: 3
Course Typically Offered: Fall, SpringGE Area: C2

SPAN 4B. Spanish for the Bilingual Student
Prerequisite: G.E. Foundation A2. Recommended: SPAN 3 or permission of instructor. For students from a bilingual background who have previous formal study of Spanish. Emphasis on productive language skills, grammar, advanced reading comprehension, and culture using peninsular and Latin American texts. G.E. Breadth C2.

Units: 3
SPAN 5. Spanish for Conversation
SPAN 2A or SPAN 2B recommended. Emphasis on spoken Spanish; development of oral fluency through class discussion, conversation games, and vocabulary exercises.
Units: 3

SPAN 8T. Fundamental Skills in Spanish
Instruction in fundamental problems in writing and word usage, such as accentuation, spelling, and vocabulary. Intended primarily for students who need more work in specific areas of writing and speaking. CR/NC grading only.
Units: 1-2

SPAN 10. Spanish in Context
Two years of high school Spanish, SPAN 1B recommended or permission of instructor. Intended for those who are enrolled in our summer study abroad program. Emphasizes speaking, reading, and cultural interaction with members of the community. (Summer only)
Units: 3-6
Course Typically Offered: Summer

SPAN 110T. Practical Spanish for Professionals
Applicable for minor. Preparation of professionals and paraprofessionals in California Spanish to work with the Spanish speaking in the following fields: health, education, social work, business, law, agriculture, and psychology.
Units: 3, Repeatable up to 12 units

SPAN 112. Reader’s Theater in Spanish
SPAN 3 or SPAN 4B recommended. Dramatic readings of prose and poetry selections performed by students in front of the class. Discussion focuses on a critical reading of the text and preparation of the performance. Public presentations and recordings optional.
Units: 3

SPAN 113. Structure of Spanish
SPAN 3 or SPAN 4B recommended. An introductory descriptive survey of the structure of standard Spanish: sounds, spelling, word formation, and grammar.
Units: 3

SPAN 114A. Essentials of Medical Interpreting
SPAN 3 or SPAN 4B recommended. This course is an introduction to the theory and practice of medical interpreting. It introduces the field of interpreting, interpreter roles, interpreting modes, interpreting contexts, medical terminology, cognitive processes associated with interpreting, professional standards of practice, code of ethics, employment opportunities, and working conditions.
Units: 3
Course Typically Offered: Fall, Spring

SPAN 114B. Advanced Medical Interpreting
Prerequisite: SPAN 114A. Provides a more advanced interpreting practice in various medical contexts, focusing on cognitive processes associated with interpreting, memory skills, note-taking, self-monitoring, professional identity, professional development, employment opportunities, medical terminology, and certification.
Units: 3
Course Typically Offered: Fall, Spring

SPAN 115A. Basic Principles of Translation
SPAN 3 or SPAN 4B recommended. Addresses specific problems of Spanish to English and English to Spanish translation, with emphasis on idiomatic expressions. It includes specialized vocabulary from the fields of medicine, literature, journalism, technology, and others.
Units: 3

SPAN 115B. Advanced Translation
Prerequisite: SPAN 115A. Students will continue to develop their translation skills, further their knowledge of resources, apply different translation techniques through a variety of authentic hands on translation projects, both sample and commissioned by actual clients.
Units: 3
Course Typically Offered: Fall, Spring

SPAN 116A. Essentials of Legal Interpreting
SPAN 3 or SPAN 4B recommended. Introduction to the profession of legal interpreting from English into Spanish and vice versa. Topics include legal terminology, the role of the interpreter, code of ethics, standards of practice, interpreting laws, and multicultural interactions.
Units: 3

SPAN 116B. Advanced Legal Interpreting
Prerequisite: SPAN 116A. This course builds on the existing knowledge of theory and practice of legal interpreting. Topics include advanced interpreting practice, code of ethics and professional responsibility, current trends in the field of professional legal interpreting, interpreter qualifications and certification, note-taking, and memory building skills.
Units: 3

SPAN 117. Advanced Conversation and Reading
SPAN 3 or SPAN 4B recommended. Reading and discussion of current periodicals, newspapers, and magazines that reflect the cultural patterns of the Spanish-speaking countries.
Units: 3
SPAN 119. Advanced Grammar
SPAN 3 or SPAN 4B recommended. Special emphasis on grammar review and development of writing skills. Analysis of grammatical constructions.
Units: 3
Course Typically Offered: Fall, Spring

SPAN 121A. Composition A
SPAN 119 highly recommended. Refinement of writing skills through vocabulary development, spelling exercises, and composition. Special emphasis on problems created by differences between the spoken and written language.
Units: 3
Course Typically Offered: Fall, Spring

SPAN 121B. Composition B
Prerequisite: SPAN 121A. Greater refinement of writing skills necessary for SPAN 140 and further upper-division courses in Hispanic literature. Special emphasis on analyzing a literary text by written means.
Units: 3
Course Typically Offered: Fall, Spring

SPAN 124. Oral and Written Expression
SPAN 2B, SPAN 3, SPAN 4B, or SPAN 10 recommended. Systematic analysis of students' ability to express themselves, both orally and in writing. Development of vocabulary, pronunciation, and grammatical structures. (Summer only)
Units: 3
Course Typically Offered: Summer

SPAN 125. Hispanic Cultural Productions (taught in Spanish)
Prerequisite: G.E. Foundation and Breadth Area C. Recommended: SPAN 3 or SPAN 4B. Interdisciplinary approach to global examination of cultural productions of Spain and Latin America through readings, lectures, films, and other media. This course is taught in Spanish. G.E. Integration IC.
Units: 3
Course Typically Offered: Fall, SpringGE Area: IC

SPAN 129. Mexican Culture (taught in Spanish)
Prerequisites: G.E. Foundation and Breadth Area C. Recommended: SPAN 2B, or SPAN 3, or SPAN 4B. Interdisciplinary approach to Mexican culture. Study of geography, history, politics, the arts, aspects of daily life, and cultural patterns by means of reading assignments, lectures by the instructor and invited guests, films and other media. This course is taught in Spanish. G.E. Integration IC.
Units: 3

SPAN 130. Introduction to Spanish Linguistics
SPAN 119 recommended or permission of instructor. Basic principles of Spanish linguistics, including aspects of syntax, morphology, phonetics, dialectology, and historical linguistics.
Units: 3
Course Typically Offered: Fall

SPAN 134. Spanish in Bilingual Schools
Prerequisites: SPAN 119 and SPAN 121A recommended or permission of instructor. Emphasis on Spanish language development for bilingual teachers at the elementary level. Presentation of specialized vocabulary in teaching elementary courses. Development and evaluation of bilingual teaching materials in Spanish. (Formerly SPAN 104)
Units: 3
Course Typically Offered: Fall, Spring

SPAN 137. Applied Spanish Linguistics
SPAN 130 recommended or permission of instructor. Analysis of Spanish with emphasis on areas of phonetics, pronunciation, and grammar which cause the greatest problems in learning and teaching the language. Readings and practice in the development of instructional strategies and materials.
Units: 3
Course Typically Offered: Spring

SPAN 139. Spanish of the Southwest
SPAN 3 or SPAN 4B recommended. Research on dialect differences in California and the Southwest, including the linguistic, social, and cultural determinants. Emphasis on the Spanish of the San Joaquin Valley.
Units: 3

SPAN 140. Introduction to Literary Analysis
Required: SPAN 119, SPAN 121B, or permission of instructor. Readings and appreciation of Hispanic literature to familiarize the student with fiction and poetry as art forms.
Units: 3
Course Typically Offered: Fall, Spring

SPAN 142. Introduction to Spanish Literature
SPAN 3 or SPAN 4B recommended. Selected readings from those literary works which have fundamentally affected the development of Spanish civilization, from El Cid to Lorca. Provides a historical framework for the study of Spanish literature.
Units: 3
Course Typically Offered: Fall, Spring

SPAN 143. Introduction to Spanish-American Literature
SPAN 3 or SPAN 4B recommended. Selected readings from those literary works which have fundamentally affected the
development of Spanish American civilization, from Hernan Cortes to Octavio Paz. Provides an historical framework for the study of Spanish American literature.

Units: 3
Course Typically Offered: Fall, Spring

SPAN 145. Mexican Literature
SPAN 140 or permission of instructor. Study of the works of such major Mexican literary figures as Sor Juana, Gutierrez Najera, Azuela, and Fuentes.

Units: 3
Course Typically Offered: Fall

SPAN 147. Twentieth Century Spanish-American Literature
SPAN 140 or permission of instructor. Intensive study of selected Spanish-American works including writings of Azuela, Fuentes, Carpenter, Vargas Llosa; outstanding poets such as Neruda, Vallejo, and Paz.

Units: 3
Course Typically Offered: Spring

SPAN 148T. Major Themes in Hispanic Literature
SPAN 140 or permission of instructor. Reading and in-depth analysis of the works of major Hispanic authors and/or themes.

Units: 3, Repeatable up to 6 units

SPAN 149. The Golden Age
SPAN 140 or permission of instructor. A study of Spanish Renaissance Man and his environment. His sociopolitical, esthetic, and literary ideas are studied through readings in Garcilaso, San Juan de la Cruz, and other authors.

Units: 3
Course Typically Offered: Spring

SPAN 150. Twentieth Century Spanish Literature
SPAN 140 or permission of instructor. A study of Spanish Existential Man. His sociopolitical, esthetic, and literary ideas are studied through readings in Unamuno, Ortega y Gasset, Lorca, Jose Hierro, and other authors.

Units: 3
Course Typically Offered: Fall

SPAN 165. Modernismo - 1950
Prerequisite: SPAN 140, SPAN 142, & SPAN 143, or permission of instructor. In-depth study of the authors from Modernismo and Vanguardia: Dario, Machado, Vallejo, Huidobro, Lorca, Neruda, Paz, and Bombal. Introduction to the ideas of Marx, Nietzsche, and Freud.

Units: 3

Course Typically Offered: Spring

SPAN 170. Senior Seminar in Spanish Studies
Senior standing, 20 upper-division units of Spanish coursework recommended, SPAN 140 required, or permission of instructor. Culminating experience in the major that includes summative assessment of language, linguistic, cultural, and literary proficiency. Readings and research projects. Addresses individual needs of graduating majors. (Spring semester)

Units: 3
Course Typically Offered: Fall, Spring

SPAN 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

SPAN 201. Teaching Spanish as a Foreign Language

Units: 3

SPAN 202. Introduction to Literary Theory
Prerequisite: Spanish major or permission of instructor. Introduction to the study of theory, from Plato to Derrida to Post-Colonialism, as it relates to the study of Hispanic literature.

Units: 3

SPAN 203. Applied Literary Theory
Prerequisite: SPAN 202. Theory and practice of literary analysis. Application of research, bibliographical and critical methods to literary texts.

Units: 3

SPAN 204. Spanish Syntax
Prerequisite: Spanish major or permission of instructor. An analysis of the grammatical structures of the Spanish language. Includes contrastive analysis of Spanish and English syntax.

Units: 3

SPAN 205. History of the Spanish Language
Phonological, morphosyntactic, lexical and semantic development of the Spanish language, from the Pre-Roman period to Modern Spanish.

Units: 3
SPAN 210. Spanish American Short Story
Prerequisite: Spanish major or permission of instructor. Study of the short story as an art form in Latin America and analysis of short stories of such writers as Quiroga, Arreola, Rulfo, Bombal, Borges and Cortazar.
Units: 3

SPAN 214. Generation of '98
Prerequisite: Spanish major or permission of instructor. Advanced analysis of the literature of Spain written at the time of the final collapse of Spain's empire. Includes works by Azorin, Baroja, Unamuno, Valle-Inclan, Machado, Ortega, and Jimenez.
Units: 3

SPAN 215. Hispanic Women Writers
Prerequisite: Spanish major or permission of instructor. Discussion and close written analysis of poetry, novels, theater and essays written by Hispanic women from 1535 to present.
Units: 3

SPAN 216. Masterpieces of Hispanic Theater
Prerequisite: Spanish major or permission of instructor. Discussion and close written analysis of peninsular and Spanish American theater masterpieces, historical milieu and cultural context.
Units: 3

SPAN 218T. Topics in Hispanic Literary Studies
Prerequisite: Spanish major or permission of instructor. Hispanic literary topics such as Hispanic Realism, Novel and Cinema, Violence in Hispanic Literature, Novel of Dictatorship, Novel of the Indian in Latin America.
Units: 3, Repeatable up to 6 units

SPAN 218T. The Good, the Bad, and the Ugly: Women in Early Modern Spain
During the 16th and 17th centuries, witches, prostitutes, female rogues, transvestite soldiers, noblewomen and nuns transgressed the social order by not complying with the expectations set for the "good" woman and the sexual morality of the times. These women were criticized, punished and even burned at the stake. This course will explore the contradictions inherent in the discourses about good/evil and beauty/ugliness in relation to the definition of woman and womanhood throughout history. We will study and analyze historical and fictional female figures such as Celestina, Magdalena de San Jeronimo, Catalina de Erauso, Maria de Zayas and Sor Juana Ines de la Cruz, amongst others. (Offered Spring 2020)
Units: 3

SPAN 219T. Topics in Creative Writing
Prerequisite: Spanish major or permission of instructor. Topics in advanced creative writing in Spanish including poetry, fiction and/or non-fiction.
Units: 3, Repeatable up to 9 units

SPAN 222. Cervantes
Prerequisite: Spanish major or permission of instructor. In-depth study of Don Quixote and selected Novelas ejemplares. Includes discussion of works, lectures, and written research.
Units: 3

SPAN 224. Major Hispanic Novelists
Prerequisite: Spanish major or permission of instructor. Research and in-depth study of the novels of major Hispanic novelists.
Units: 3

SPAN 225. Modernismo - 1950
Prerequisite: Spanish major or permission of instructor. Research and in-depth study of the literature from Modernismo through 1950. Discussion and written analysis of the major authors from the period.
Units: 3

SPAN 226. Major Hispanic Poets
Prerequisite: Spanish major or permission of instructor. Research and in-depth study of the poetry of major Hispanic poets. Discussion and written analysis of the poetry on one of the following poets: Machado, Lorca, Dario, Neruda.
Units: 3

SPAN 227. Novel of Formation
Analysis of the Latin American novel of formation. Discussion of issues such as the formation of an individual's sense of gender, race, and class, the role of travel, memory, orality, and writing in the socialization of youth.
Units: 3

SPAN 230. History of Spanish
The linguistic development of the Spanish language from Latin to the present day including the sound system, word formation and etymology, and grammar, within a social and cultural context.
Units: 3

SPAN 245. Mexican Literature
Prerequisite: Spanish major or permission of instructor. Discussion and analysis of representative works of Mexican literature from the Precolombian Period through the 1980s. Includes study of major cultural and artistic movements in literature, the visual arts and film.
SPAN 247. The Spanish American "Boom"
In-depth study of the Spanish-American "new novel" that emerged in the 1960s. Analysis of factors leading to this "boom" and impact of this new narrative style on subsequent writers in Latin America and on a broader scale.
Units: 3

SPAN 249. Golden Age
Advanced analysis of prose narratives, poems, and theatrical works from Spain's Renaissance and Baroque periods in their historical and cultural contexts.
Units: 3

SPAN 250. Spanish Post-War Literature
Prerequisite: Spanish major or permission of instructor. Discussion and analysis of representative works of Spanish literature from 1939 through the 1980s. Examines literary production during the Francoist Dictatorship and the transition to a democratic government.
Units: 3

SPAN 255. Nineteenth Century Spanish Literature
Prerequisite: Spanish major or permission of instructor. Discussion and analysis of representative works of Spanish literature from the Romantic, Realist, and Naturalist Movement.
Units: 3

SPAN 257. Spanish American Testimonio
Analysis of Spanish American Testimonio genre through representative texts. Discussion of aesthetic, ethical, and ideological issues related to the production and diffusion of these texts, such as authority/authorship, literature/anthropology, writing/orality, memory, political engagement, manipulation, and resistance.
Units: 3

SPAN 259. The Poetics of Caribbeanness
Prerequisites: Spanish major or permission of instructor. Analysis of literary and artistic movements in the Spanish Caribbean, from the colonial times to the present, through representative works, emphasizing how the interactions of race, gender, and ethnicity affect the construction of individual and national identities.
Units: 3

SPAN 267. Early 20th Century Spanish Literature
Prerequisite: Spanish major or permission of instructor. Discussion and analysis of representative works of Spanish literature from Modernismo, the Generation of 1914, and the Generation of 1927.
Units: 3

SPAN 270. Research Methods
Training in the search for, proper selection of, and proper use of secondary sources in support of a research paper's thesis that participates in currently scholarly debates related to Hispanic literature of all time periods.
Units: 3

SPAN 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 2-3

SPAN 298. Project
See Criteria for Thesis and Project. Writing and/or editing materials suitable for school programs from elementary through high school level, such as children's literature, original poetry, testing devices, and translations. Approved for RP grading.
Units: 3-6

SPAN 298C. Project Continuation
Pre-requisite: Project SPAN 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

SPAN 299. Thesis
Prerequisite: See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the completion of the master's degree. Approved for RP grading.
Units: 3-6

SPAN 299C. Thesis Continuation
Pre-requisite: Thesis 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

ARMENIAN STUDIES

ARM 1A. Elementary Armenian
Beginning course in conversational and written Armenian. Not open to students with two or more years of high school Armenian credit.
Units: 4
**ARM 1B. Elementary Armenian**  
Prerequisite: G.E. Foundation A2, ARM 1A or permission of instructor. Second semester course in conversational and written Armenian. Not open to those with three or more years of high school Armenian credit. G.E. Breadth C2.

Units: 4  
GE Area: C2

**ARM 2A. Intermediate Armenian**  
Prerequisites: G.E. Foundation A2, ARM 1B or permission of instructor. Review of grammar and emphasis on conversation and reading. G.E. Breadth C2.

Units: 3  
GE Area: C2

**ARM 2B. Intermediate Armenian**  
Prerequisites: G.E. Foundation A2, ARM 2A or permission of instructor. Advanced conversation, composition, and reading.

Units: 3

**ARM 148. Masterpieces of Armenian Culture**  
Prerequisites: G.E. Foundation and Breadth Area C. Survey of outstanding examples of Armenian culture including literary works by Naregatsi, Toumanian, Siamanto, Varoujean, and others. Survey of Christian Armenian architecture and music. G.E. Integration IC.

Units: 3  
GE Area: IC

**ARM 190. Independent Study**  
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3

**ARMS 10. Introduction to Armenian Studies**  

Units: 3  
GE Area: D3

**ARMS 20. The Arts of Armenia**  
An introduction to Armenian architecture, painting, sculpture, ceramics, metal work, and textiles. All lectures are illustrated with slides. G.E. Breadth C1.

Units: 3

**ARMS 45. William Saroyan**  
The ethnic experience in America, especially the San Joaquin Valley, through the writings of William Saroyan. The author's major literary successes will be read and compared with films made of these same works. Writing assignments of at least 2,500 words.

Units: 3

**ARMS 50T. Studies in Armenian Literature**  
Various masterpieces of Armenian literature: David of Sassoun, Saroyan, historical literature, modern literature, Armenian American authors.

Units: 3

**ARMS 105. Armenian Genocide in Comparative Context**  
(ARMS 105 same as HIST 105.) Review of theory and characteristics of genocide. Study of the Armenian Genocide as an example and show comparison with other genocides in the 20th century. Discusses role of international constituencies and prevention and lessons of genocide. (Formerly HIST 109T section)

Units: 3

**ARMS 106. Armenians in North America**  
(ARMS 106 same as HIST 106). Study of six waves of Armenian migrations to North America from 1870-1995. Topics discussed include entry, settlement, work, family, community organizations, church, politics, culture, and integration in U.S. society. (Formerly ARMS 120T section)

Units: 3

**ARMS 108A. Armenian History I: Ancient and Medieval**  
(HIST 108A same as ARMS 108A.) History of Armenia and Armenians from prehistoric times to the beginning of the modern era. The historical process will be considered from Armenia's point of view as well as from that of its neighbors: Assyria, Iran, Rome, Byzantium, the Arabs, the Seljuk Turks, the Crusades, the Mongols, and various Turkish dynasties.

Units: 3

**ARMS 108B. Armenian History II: Modern and Contemporary**  
(HIST 108B same as ARMS 108B.) Overview of modern and contemporary Armenian history, including Armenia's relations with Persian, Turkish, and Russian empires, the Armenian Renaissance, the "Armenian Question," the Genocide, the Armenian Republic, Soviet Armenia, the Second Armenian Republic, and diasporan communities in America, Europe, and the Middle East.

Units: 3
ARMS 120T. Topics in Armenian Studies
Specialized topics in Armenian history, art, and culture, not normally covered in other Armenian Studies courses. Topics include the Armenian church, minor arts, film, the Diaspora, and the Genocide.
Units: 1-3

ARMS 120T. Armenian Cultural History
This course focuses on the cultural history of Eastern Anatolia, Armenia, and the Caucasus in the 12th - 14th century. During this period, the region passed under the control of the various Empires, and witnessed the rise of the Georgian kingdom. This course highlights continuities of socioeconomic institutions and practices as well as the emergence of regional norms that created a degree of stability in a highly dynamic period. Topics to be examined will include: demographic changes, processes of urbanization and social mobility, evolutions in gender and class roles, inter-communal relations between faiths, and the visual representation of power and legitimacy.
Units: 3, Repeatable up to 6 units

ARMS 120T. Armenian in the Ottoman Empire after the Genocide
This course is a survey of the aftermath of the Genocide in the Ottoman Empire, an analysis of the Armenians in the Ottoman Empire and modern Turkey after World War I. In this course, we will analyze the political and social developments within the Ottoman Empire during 1918-1923 and pay particular attention to the post-war political developments regarding Armenians. The course will provide a deep insight into the history of Armenians in the Ottoman Empire and modern Turkey after World War I. (Offered Spring 2020)
Units: 3

ARMS 121. Armenian Painting
History and development of Armenian painting with special concentration on the art of manuscript illumination and the origins of Christian art. All lectures are illustrated with slides.
Units: 3

ARMS 123. Armenian Architecture
History and development of Armenian architecture is presented in the context of early Christian architecture. There will be a survey of monuments from the fourth to the 17th centuries. All lectures are illustrated with slides.
Units: 3

ARMS 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

ARMS 190H. Honors Independent Study
Designed for advanced undergraduate students who have successfully been admitted into the Armenian Studies Honors Program. Students will work closely with assigned faculty to develop a research proposal and to complete an honors thesis ready for publication.
Units: 3

GEOGRAPHY & CITY & REGNL PLNNG

CRP 81. Introduction to City Planning
Prerequisites: G.E. Foundation and Breadth Area D. Introduction to and critical analysis of theory and practice of community planning; traditional and alternative roles of planning in contemporary society; perspectives on community problems; evaluation of concepts, literature, and history.
Units: 3
Course Typically Offered: Fall, Spring

CRP 110. Planning Process and Theory
Prerequisites: G.E. Foundation, Breadth Area D, or permission of instructor. Exploration of answers to the following question through a survey of classic and contemporary theories of planning: What role can planning play in developing the city and region within the constraints of a capitalist political economy and a democratic political system. Activities utilized include communicative and participatory aspects of planning theory. (Formerly CRP 104.)
Units: 3
Course Typically Offered: Fall

CRP 115. Urban Design
Prerequisites: G.E. Foundation, Breadth Area D, and GEOG 81, or permission of instructor. Exploring the principles of urban design at the scale of neighborhoods, downtowns, and city-wide basis through case studies and field observations. Learning the relationship of urban design to cultural, social and political factors, land use, transportation, environment, and public health.
Units: 3
Course Typically Offered: Fall

CRP 120. Community Development Theory & Practice
Prerequisites: G.E. Foundation, Breadth Area D, and GEOG 81, or permission of instructor. Introduction to basic issues of urban housing, community development, and economic development; the role of public policy in the above fields; market approaches to tackling issues in the fields; review and critique of urban renewal/housing programs. (Formerly CRP 103)
Units: 3
Course Typically Offered: Spring

CRP 130. Transportation Planning
Prerequisites: G.E. Foundation, Breadth Area D, or permission of instructor. Introduction to brief history and trend of U.S. transportation planning; basic concepts and key issues in transportation; Analytical skills in travel analysis; the relationship between transportation, land use, and the environment; Transportation planning process and policy; sustainable transportation. (Formerly CRP 109.)
Units: 3
Course Typically Offered: Spring

CRP 135. Planning Law & Administration
Prerequisites: G.E. Foundation, Breadth Area D, and CRP 81, or permission of instructor. Study of contemporary growth and land use management techniques used by local, state and federal governments. Examination of the role of public law in addressing urban growth and environmental change issues, and the legal aspects of preparing and administering planning controls and incentives. (Formerly CRP 106)
Units: 3
Course Typically Offered: Fall

CRP 140. Economics for Planners
Prerequisites: G.E. Foundation, Breadth Area D, or permission of instructor. This course looks at urban problems from an economic and financial point of view. Students will better understand how economic decision making shapes urban areas and some of their problems, and how they may use economic arguments in making decisions on problems addressed by urban planners. (Formerly CRP 108)
Units: 3
Course Typically Offered: Fall

CRP 150A. Community Plan Making - A
Prerequisites: G.E. Foundation, Breadth Area D, and GEOG 81 and CRP 120, or permission of instructor. Application of planning theory and methods to the analysis and creation of community plans. Students will work with selected clients including cities and communities in addressing local planning issues. Includes field trips to the selected client.
Units: 3

CRP 150B. Community Plan Making - B
Prerequisite: Completion of CRP 150A, or permission of instructor. Continuation of CRP 150A. Application of planning theory and methods to the analysis and creation of community plans. Students will work with selected clients including cities and communities in addressing local planning issues. Includes field trips to the selected client.
Units: 3

CRP 191T. Topics in Urban Planning Techniques
Selected topics such as analytical techniques; means for management of urban development, including transportation, public facilities, and activities in the private sector; public policy concerning issues of local and regional significance. (Formerly GEOG 187T.)
Units: 1-3
Course Typically Offered: Spring - even

CRP 196I. City And Regional Planning Internship
This course familiarizes the students with planning practice through an off-campus internship experience. Based on their employer's assignments, the intern will collect and analyze data, work with residents and other stakeholders, prepare planning reports, conduct mapping exercises, and/or make presentations. The internship must be preceded and succeeded by at least one semester of course work in planning while in residence at the California State University, Fresno.
Units: 3
Course Typically Offered: Fall

EHD 155B. Studt Tchg S Sci
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

GEOG 2. Introduction to Cultural Geography
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. General background to cultural geography, including origins of cultural landscapes, man's modification of the natural environment, and problems of population and settlement geography. G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall - evenGE Area: D3

GEOG 4. World Geography
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Survey of worldwide social, cultural, economic and political forces; earth's physical features; economic development; cultural and natural resources; man-land relationships. Applicable concepts and methodologies. Approach is by continents and/or cultural realms. G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3

GEOG 5. Physical Geography: Global Concepts, Weather and Climate
The earth as a planet, map projections, location on the earth's surface, time, oceans, weather, and climate.
Units: 3
Course Typically Offered: Fall

GEOG 7. Physical Geography: The Earth's Surface
A survey of those elements of the physical environment at the earth-atmosphere contact. Fundamentals of landform features, soils, natural vegetation, and water bodies.
Units: 3
Course Typically Offered: Spring

GEOG 25. Critical Thinking in Geography
Fundamentals of critical thinking with emphasis on: evaluating claims, geographical and cultural influences on perception, constructing arguments, deductive and inductive reasoning, recognizing fallacies and persuasive rhetoric, and explanations. These skills are applied to select topics drawn from various geographical contexts.
Units: 3
GE Area: A3

GEOG 30. Introduction to Spatial Statistics
Introduction of elementary statistical principles and techniques: probability theory, sampling, descriptive statistics, spatial statistics, hypothesis testing, correlation analysis, bivariate regression, and forecasting. (Formerly GEOG 110) (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Spring

GEOG 81. Introduction to Community Planning
Introduction to and discussion of theory and history of cities; the principals and methodologies of urban studies and analysis; value, ethics, and practice of urban planning in American cities; planning policies that address urban sustainability, equity, and health problems in cities. G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall
GE Area: A3

Course Typically Offered: Fall - even

GEOG 112. Climatology
Prerequisites: MATH 75 (or equivalent) and GEOG 5 (or equivalent). Study of various systems of climate classification. Climates as they exist throughout the world and the reasons for their occurrence.
Units: 3
Course Typically Offered: Spring - odd

GEOG 114. Micrometeorology
(GEOG 114 same as PLANT 134.) Prerequisites: MATH 75 (or equivalent) and GEOG 5 (or equivalent), or permission of instructor. Micrometeorological influences on local climates including natural ecosystems and varying agricultural canopies. Local climate influences on wildlife, domestic animals, and humans. Manipulation of local climate including frost protection, irrigation and wind sheltering. Microclimates of non-uniform terrain and urban environment.
Units: 3
Course Typically Offered: Fall - odd

GEOG 115. Violent Weather/Climatic Hazards
Prerequisite: G.E. Foundation and Breadth Area B. Studies hurricanes, tornadoes, thunderstorms, lightning, destructive winds, heat waves, drought, severe winter storms, and floods. Looks at physical laws and processes that account for their formation and behavior; examines human impact. G.E. Integration IB.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: IB

GEOG 118. Air Quality Meteorology
This course examines the sources, effects, and regulation of air pollutants; and the roles of meteorology in air pollution. Topics covered include air pollution sources and sinks, atmospheric systems and pollutant transport, welfare and health effects of air pollution.
Units: 3

GEOG 122. Introduction to Biogeography
Prerequisites: G.E. Foundation and Breadth Area B, and GEOG 30 (or equivalent). Examination of the living planet and global patterns of life. Topics covered include evolution, biodiversity, extinction, conservation, and impacts of global change on our planet's biosphere. (Formerly GEOG 117.)
Units: 3
Course Typically Offered: Fall - even

GEOG 127. Global Environmental Change
Prerequisites: G.E. Foundation and Breadth Area B. Effects of human activities on the natural world from ancient times to the present with emphasis on local, regional, and global environmental changes and their implications for the future.
GEOG 128. Environmental Pollution
Prerequisites: completion of G.E. Foundation and Area B. Breadth requirements. A discussion of current environmental pollution problems involving the atmosphere, land, and water. The adverse effects of transportation, surface mining, sewage and waste disposal, noise, the use of pesticides, energy production and consumption, and related topics are examined.
Units: 3
Course Typically Offered: Spring - even

GEOG 129. Environmental Impact Assessment
This course examines National Environmental Policy Act (NEPA) guidelines required to conduct environmental impact assessment (EIA) of a project via physical-chemical, biological, socioeconomic, and cultural analyses of the effects the proposed activity will have on the natural environment. G.E. Integration IB.
Units: 3
GE Area: IB

GEOG 132. United States Environmental Law
Prerequisites: G.E. Foundation and Breadth Area D, and junior standing. Contemporary environmental problems and their interrelationships. The conceptual, constitutional, and administrative framework for environmental protection and management. Legislation and case law for the protection and enhancement of the environment with emphasis on natural resources. (Formerly CRP 135).
Units: 3
Course Typically Offered: Spring - odd

GEOG 133. Environmental Policy Management
Discussion of theories, practices, and apparatus used in solving environmental problems from multidisciplinary approach to safeguard, sustain, and reinstate the physical environmental conditions. Topics include environmental policy, issues in water resources and solid waste management, and life cycle analysis. G.E. Integration ID.
Units: 3
GE Area: ID

GEOG 134. Introduction to Environmental Entrepreneurship
Discussion on how to set up a new business in environmental science, sustainability, green energy, and natural resource management. Topics include environmental equity and management, natural resource management, forestry, life cycle analysis, waste management, green energy, engineering economics, and entrepreneurship.
Units: 3

GEOG 135. Environmental Protection
Prerequisite: G.E. Foundation and Breadth Area D. An examination of the plight of nature; the values of nature preserved; man's attempt to preserve nature. Attention focuses on the national park movement, wilderness, endangered species, the management of lands for the purpose of preservation, and related topics.
Units: 3
Course Typically Offered: Spring - odd

GEOG 139T. Environmental Regions
Prerequisites: G.E. Foundation and Breadth Area D. Systematic and regional investigation of the physical and cultural complexes of various environmental regions. Regions to be discussed include the Humid Tropics, Arid Lands, Polar Lands, Coastal Lands, Mountain Environments, Island Environments. (Formerly GEOG 145T)
Units: 3, Repeatable up to 9 units

GEOG 141. GIS I: Data Display and Manipulation
Prerequisites: GEOG 30 (or equivalent) or permission of instructor. Use of computers in mapping and geographic information systems applications. Operational knowledge of boundary and attribute data manipulation, spatial query, geocoding, and layout using state-of-the-art mapping and geographic information systems software. (2 lecture, 2 lab hours) (Formerly GEOG 101).
Units: 3
Course Typically Offered: Fall

GEOG 142. GIS II: Data Creation and Project Implementation
Prerequisite: GEOG 141 or permission of instructor. Fundamental concepts of acquisition, structure, manipulation, and analysis of GIS data. Practice in the design, management, and implementation of GIS. Specific operational knowledge may include georegistration, boundary and attribute file creation, map development, spatial query, and spatial analysis. (2 lecture, 2 lab hours) (Formerly GEOG 107).
Units: 3
Course Typically Offered: Spring

GEOG 143. GIS III: Spatial Analysis and Modeling
Prerequisite: GEOG 142 or permission of instructor. Spatial analysis and modeling in a GIS environment. Spatial geometry, pattern analysis, terrain analysis, path analysis, network analysis, surface modeling, spatial autocorrelation, and spatial interpolation. (2 lecture, 2 lab hours) (Formerly GEOG 108).
Units: 3
Course Typically Offered: Fall - odd

Prerequisites: G.E. Foundation Breadth and Area B; MATH 5 (or equivalent); GEOG 7, GEOG 30 (or equivalent) or permission of instructor. Introductory techniques of remote sensing; including digital image processing; advanced GIS applications. (2 lecture, 2 lab hours) (Formerly GEOG 106).
Units: 3

**GEOG 160. Urban Geography**
Prerequisites: G.E. Foundation and Breadth Area D. The city environment. An understanding of the changing urban environments from ancient through medieval to modern times; the relationship of the urban center to its surrounding hinterland; the interdependence of its functional parts; its problems and future.
Units: 3
Course Typically Offered: Fall - even

**GEOG 161. Historical Geography of the United States**
Prerequisites: G.E. Foundation and Breadth Area D. Regional settlement of the United States; peopling of physiographic regions, creation of economic (cultural) regions, and geographic factors related to broad trends in American history.
Units: 3
Course Typically Offered: Fall

**GEOG 162. Political Geography**
Prerequisites: G.E. Foundation and Breadth Area D. Systematic treatment of the nature and structure of states, boundary problems, political policy for the oceans, international power, air space.
Units: 3
Course Typically Offered: Fall - even

**GEOG 163. World Crises**
Prerequisites: G.E. Foundation and Breadth Area D. Current major political, economic, and environmental crises occurring on either a global or a regional level.
Units: 3
Course Typically Offered: Spring - odd

**GEOG 164. American Ethnic Geography**
Prerequisites: G.E. Foundation and Breadth Area D. Geographical analysis of selected American ethnic groups to include their cultural hearths, cultural landscapes, cultural evolutions, migrations, and current spatial distributions. Economic, social, and political correlates will be explored.
Units: 3

**GEOG 165. Medical Geography**
Prerequisites: G.E. Foundation and Breadth Area D. Examination of spatial patterns of diseases worldwide, with special emphasis on diffusion patterns for infectious diseases. Analysis of global health care delivery systems including health care resources, accessibility, and uses. (Formerly GEOG 155).
Units: 3
Course Typically Offered: Spring - even

**GEOG 166. Geography of World Economy**
Prerequisites: G.E. Foundation and Breadth Area D. An examination of the organization of world economy and human economic activities from a geographical perspective. Discussion of contemporary economic issues may include industrial restructuring, technological innovation, foreign trade and investment, Pacific Asia dynamism, Third World crisis, new international economic order, regional inequality, and local area development. (Formerly GEOG 130).
Units: 3
Course Typically Offered: Fall - odd

**GEOG 167. People and Places-A Global Perspective**
Prerequisites: G.E. Foundation and Breadth Area D. Contrasting characteristics of a diverse world; influence of major social, cultural, economic, and political forces on societal behavior and institutions; impacts of geographical factors including location, climate, natural resources, urbanization, diffusion/adoptions of innovations, and rural/urban lifestyles on development. Multicultural/International M/I.
Units: 3
Course Typically Offered: Fall, Spring

**GEOG 170T. Latin American Regions**
Prerequisites: G.E. Foundation and Breadth Area D. Geography of Latin America. Relationship of cultural and natural features; social and economic development; man-land relationships. Regions to be discussed include Mexico, Central America, Caribbean Islands, and South America.
Units: 1-3

**GEOG 171T. Anglo-American Regions**
Prerequisites: G.E. Foundation and Breadth Area D. Examination of the physical, economic, and cultural geographic foundations of major Anglo-American regions. Regions to be discussed include Canada, the United States, the American West, the South, the Middle West, and the North East. (Formerly 166T).
Units: 1-3
GEOG 173. The American West  
Prerequisites: G.E. Foundation and Breadth Area D. Physical and human geography of the western continental United States. Occupance of the region, both historically and in contemporary times, by different peoples including Indians, Hispanics, Anglos, and others. Examines population, land and resource use, urban centers, and subdivision of the American West. G.E. Integration ID. (Formerly GEOG 169).  
Units: 3  
Course Typically Offered: Fall, Spring  
GE Area: ID  

GEOG 174. European Regions  
Prerequisites: G.E. Foundation and Breadth Area D. Geographic regions of Europe emphasizing the relation of human activities to physical factors areal in their distribution and influence. Regions to be discussed include Mediterranean lands, Western Europe, Eastern Europe, Central Europe, Northern Europe, the British isles.  
Units: 1-3  

GEOG 175T. African Regions  
Prerequisites: G.E. Foundation and Breadth Area D. Study of major African regions relating to basic physical, cultural, economic, and political geographic conditions and problems. Regions to be discussed include Developing Black Africa, North Africa, West Africa, East Africa, Central Africa, and Southern Africa. (Formerly GEOG 181T).  
Units: 1-3  

GEOG 177T. Asian Regions  
Prerequisites: G.E. Foundation and Breadth Area D. Geographic regions of Asia emphasizing physical and cultural features. Regions to be discussed include Southeast Asia, South Asia, China, and the Far East.  
Units: 1-3  

GEOG 178. Geography of California  
Prerequisites: G.E. Foundation and Breadth Area D. Natural and cultural patterns of California; historical and regional geography of the state. (Formerly GEOG 168).  
Units: 3  
Course Typically Offered: Spring - even  

GEOG 179. Geography of the Middle East  
Prerequisites: G.E. Foundation and Breadth Area D. Comprehensive study of the physical features of the Middle East and the cultural traits of its people. The area under consideration extends from the Turkish Straits to the Pamir Knot, and from the Caucasus to the Sudan.  
Units: 3  

GEOG 184. Environmental Planning  
The course includes theoretical and practical with the components in an effort to provide students with the skills needed to critically evaluate environmental factors in the planning process. The class is generally organized into two sections: policies and practices. G.E. Integration ID.  
Units: 3  
GE Area: ID  

GEOG 190. Independent Study  
See Academic Placement -- Independent Study. Approved for RP grading.  
Units: 1-3  
Course Typically Offered: Fall, Spring  

GEOG 191T. Topics in Geography  
Prerequisites: G.E. Foundation and Breadth Area D. Selected topics in cultural, physical, environmental, or economic geography or in geographic techniques. (Formerly GEOG 188T).  
Units: 1-3  
Course Typically Offered: Fall, Spring  

GEOG 191T. Environmental Impact Assessment  
This course investigates guidelines, processes, procedures, and implementation of environmental impact assessment (EIA) used to assess a project through technical, economic, and social analysis of its effects in natural environment. The objective is to provide familiarity with EIA considered in granting permission for creation of infrastructure, public facilities, and developmental work. Topics consist of background of EIA; policy and institutional framework; public participation, screening, and scoping; forecast and appraisal of impacts; impact management and mitigation techniques; and EIA preparation decision making. Students understand to create, critique, and review EIA and the decision making processes via issue specific case studies.  
Units: 3  

GEOG 192. Directed Readings  
Prerequisite: permission of instructor. Supervised readings in a selected field of geography. Combined units of GEOG 190 and GEOG 192 may not exceed 6 units. CR/NC grading only.  
Units: 1-3  
Course Typically Offered: Fall, Spring  

GEOG 195. Field Geography  
Prerequisite: permission of instructor. Weekend, semester break, or summer field trips. CR/NC grading only.  
Units: 1-6
GEOG 201. Foundations in Urban Planning
Introduction to and critical analysis of theory and practice of urban planning; traditional and alternative roles of planning in contemporary society; perspectives on community problems; evaluations of concepts, literature and history.
Units: 3

GEOG 202. Land Use Regulation, Law & Ethics
This course will examine the development and application of the jurisdictions "Police Powers" to implement land development plans and policies. Historical and contemporary case studies will be examined. Topics include general plan, zoning, subdivisions, nuisance control, and growth management strategies.
Units: 3

GEOG 203. Community Planning
Introduction to basic issues of urban planning, community development, and economic development; the role of public policy in the above fields; market approaches to tackling issues in the fields; review and critique of urban renewal/housing program.
Units: 3

GEOG 204. Environmental Planning
This course is designed to familiarize the student with the fundamental concepts and mechanisms underlying environmental planning at the local, state, and federal level. The complex and embedded interactions of the build and natural environments will be examined.
Units: 3

GEOG 205. Transportation Planning
Introduction to brief history and rend of U.S. transportation planning; basic concepts and the issues in transportation; analytical skills in travel behavioral demand modeling; transportation economics, finance, and policies; sustainable transportation
Units: 3

EARTH & ENVIRONMENT SCIENCES

EES 1. Natural Disasters and Earth Resources
Prerequisite: G. E. Foundation B4 (except for those with declared majors in the College of Science and Mathematics). Processes and materials that produce the different geologic resources and hazards (earthquakes, volcanoes, floods, landslides). Plate tectonic theory (including continental drift) as the unifying model to explain geologic phenomena. Emphasizes the relationship between geology and humans. G. E. Breadth B1. (3 lecture, 2 lab hours; optional field trips) (Course fee, $10).
Units: 4
Course Typically Offered: Fall, Spring GE Area: B1

EES 1V. Natural Disasters and Earth Resources - Virtual Labs
Prerequisite: G. E. Foundation B4 (except for those with declared major in the College of Science and Mathematics). Processes and materials that produce the different geologic resources and hazards (earthquakes, volcanoes, floods, landslides). Plate tectonic theory (including continental drift) as the unifying model to explain geologic phenomena. Emphasizes the relationship between geology and humans. G. E. Breadth B1. (3 lecture, 2 lab hours; optional field trips (Course fee, $10) This course offers virtual labs with alternating in-class and self-paced lab options
Units: 4
Course Typically Offered: Fall, Spring GE Area: B1

EES 2. Historical Geology
Prerequisites: EES 1. Origins & evolution of solid earth, life, oceans, and atmosphere as revealed by the rock record's fossil remains with emphasis on the evolution of life and the physical environment (2 lecture, 2 lab hours) (Course fee, $10)
Units: 3
Course Typically Offered: Spring

EES 3. Geology Field Trip
Extended weekend field trip to areas of geologic interest including Yosemite National Park, Death Valley, or coastal California. May be repeated. Non-majors encouraged. CR/NC grading only. (Weekend field trips required; Field trip fee, $60)
Units: 1, Repeatable up to 3 units
Course Typically Offered: Fall

EES 4. Environmental Science
Prerequisite G.E. Foundation B4. Introduction to environmental science, focusing on environmental principles and processes. Topics include human population and consumption, ecosystems and biodiversity, resource management and conservation, energy sources and technology use, dynamics, ecosystems, pollution and wastes, environmental economics and ethics, global changes, and tomorrow's world. (3 lecture, 2 lab hours) (Course fee, $10)
Units: 4
Course Typically Offered: Fall, Spring GE Area: B1

EES 9. Introduction to Earth Science
Introduction to earth science emphasizing K-6 teacher preparation. Addresses topics in earthquakes, volcanoes, rock and mineral formation, oceanography, astronomy, and meteorology. For liberal studies majors only (Course fee, $10)
Units: 3
EES 12. Mineralogy  
Prerequisite: EES 1; CHEM 1A (or concurrently). Properties, relationships, uses origin of minerals; determination of common minerals by physical and other tests. Field trips may be required. (2 lecture, 3 lab hours) (Course fee, $35)  
Units: 3

Course Typically Offered: Fall

EES 30. Introductory Field Methods  
Pre- or co-requisites: EES 1, EES 2 or instructor's permission. Introduction to geologic fieldwork methods, including use of Brunton pocket transit and stereo aerial photographs, preparation/interpretation of maps and geologic cross-sections. Graded for EES majors/minors. (1 lecture, 6 lab/field hours) (Weekend field trips required) (Course fee, $35.00)  
Units: 3

Course Typically Offered: Spring

EES 31. Environmental Sampling Methods  
Prerequisites: CHEM 1A; EES 4. This course is an introduction to quantification, assessment, and prediction of environmental processes and interactions. The course will introduce students to sampling strategies and scientific procedures for addressing scientific questions. Ensuring that the procedures and strategies for data collection address defined hypotheses will be a central theme. (Formerly EES 150T)  
Units: 3

Course Typically Offered: Spring

EES 50. National Parks of the Sierra Nevada  
Geology, ecology, and history (human and natural) of Yosemite, Kings Canyon, and Sequoia National Parks and issues facing these Parks. (3 lecture hours, Field Exercises required; Field trip fee, $25).  
Units: 3

Course Typically Offered: Fall

EES 100. Analytical Methods in the Earth Sciences  
Prerequisites: EES 12 (concurrent enrollment recommended). The course covers various methods for identifying and characterizing crystalline substances. Topics include Crystallography, Optical methods for mineral identification, and powder X-ray diffraction methods for mineral identification structure characterization. (1 lecture, 3 lab hours) (Course fee, $10)  
Units: 2

Course Typically Offered: Fall

EES 101. Igneous and Metamorphic Petrology  
Prerequisites: EES 30, EES 100; CHEM 1B (or concurrently). Origin classification, textures, structures, and geologic setting of igneous and metamorphic rocks; examination of samples in outcrop, hand specimen, and thin section. Weekend field trips required. (3 lecture, 3 lab hours) (Course fee, $35)  
Units: 4

Course Typically Offered: Spring

EES 102. Sedimentology  
Prerequisites: EES 30 or EES 31 (or concurrently). Origin, classifications, textures, and structures of sedimentary rocks; examination of samples in hand specimen and thin section. Required field component for field stratigraphy and sedimentology, and producing a formal field report. (3 lecture, 3 lab hours plus field project) (Course fee, $35)  
Units: 4

Course Typically Offered: Spring

EES 104W. Scientific Writing and Research Techniques  
Prerequisite: EES 1 or EES 4. Organizing and writing the scientific report. Topics include: techniques and conventions in research methods, evaluation approaches, and presentation of results. Peer reviews. Oral presentation and term paper required. Meets the upper-division writing skills requirement for graduation.  
Units: 3

Course Typically Offered: Spring

EES 105. Geomorphology  
Prerequisite: EES 1; EES 30 or EES 31 (or concurrently). Landforms, climates, geologic processes, and their interrelation in shaping the earth's surface today and in the geologic past. Interpretation of topographic maps and aerial photographs. Field trips required. (2 lecture, 3 lab hours) (Course fee, $35)  
Units: 3

Course Typically Offered: Spring

EES 106. Structural Geology  
Prerequisites: EES 30, EES 101; MATH 75 (or concurrently), PHYS 2A. Recognition, representation, and interpretation of structural features of the earth's crust. Includes theoretical and mechanical principles. Study of regional tectonics and major structural provinces of the Cordillera. Required field component for field mapping, collecting and producing formal field report. (2 lecture, 3 lab hours plus field project) (Course fee, $35)  
Units: 4

Course Typically Offered: Spring

EES 107. Advanced Field Methods  
Prerequisites: EES 102, EES 104, EES 106. Field trips to areas of diverse geology; observation, description, and mapping of geologic phenomena. Includes written reports of areas selected for study. Students should contact the department for details. (9 lab hours usually including fieldwork on weekends or during January intercession and spring vacation) (Course fee, $35)
Units: 3
Course Typically Offered: Spring

**EES 108. Soil and Water Sciences**
Prerequisites: BIOL 1A, CHEM 1B and 1BL, EES 1 or EES 4, PHYS 2A or PHYS 4A and 4AL, MATH 75. Introduction to the physical, chemical, and biological properties of soil and water in relation to environmental sustainability. Introduction to the hydrologic cycle, distribution of soil and water sources. Discussion of soil and water resources management and policy issues. (3 lecture, 3 lab hours; optional field trips) (Course fee, $10)

Units: 4
Course Typically Offered: Spring

**EES 109. Atmospheric Science**
Prerequisites: BIOL 1A, CHEM 1B and 1BL, EES 1 or EES 4, PHYS 2A or PHYS 4A and 4AL, MATH 75. The structure of the atmosphere and man's impact upon it. The causes and consequences of air pollution. Air quality standards. Stratospheric and tropospheric ozone. Introduction to the chemistry of air pollution and air pollution control strategies. (2 lecture, 3 lab hours; optional field trips) (Course fee, $10)

Units: 3
Course Typically Offered: Fall

**EES 110. Invertebrate Paleontology**
Prerequisites: EES 1 or BIOL 1A and BIOL 1B, or BIOL 12, or BIOL 11. Invertebrate structures and development of prehistoric animals; introduction to stratigraphic importance of fossils. Field trips may be required. (2 lecture, 3 lab hours) (Course fee, $10)

Units: 3
Course Typically Offered: Fall

**EES 112. Planet Earth through Time**
Credit not allowed after completion of EES 2. Prerequisite: G.E. Foundation and Breadth Area B. Principles of geology used in the interpretation of the history of Earth as revealed in rocks and their fossils. Includes origin of the solar system, evolution of atmosphere and oceans, origin of life, rise and fall of the dinosaurs, plate tectonics, and ice ages. G. E. Integration 1B. Does not satisfy Division 1 pre-1999 G. E. curriculum.

Units: 3
Course Typically Offered: Fall, Spring

**GE Area: IB**

**EES 113. Stream Habitat Restoration**
Prerequisites: EES 1 or BIOL 10 or BIOL 1A or instructor's consent. Investigation of stream geology, hydrology, and biology relevant to restoring stream habitat. Includes collecting and interpreting lab and field data. Field trips required. (2 lecture, 3 lab hours)

Units: 3

**EES 114. Engineering Geology**
Prerequisites: EES 1 and MATH 5 or MATH 72 or MATH 75 or MATH 75A and MATH 75B. Introduction to techniques and theory of geotechnical investigations. Includes field and lab techniques in soil and rock mechanics, rock logging, geophysics, slope stability, engineering hydrogeology, stereo analysis, seismic engineering. Recommended for students in geology or civil engineering. Field trips required. (2 lecture, 3 lab hours) (Course fee, $35)

Units: 3
Course Typically Offered: Fall

**EES 117. Hydrogeology**
Prerequisites: EES 1 or EES 4; MATH 75 or MATH 75A and 75B. Recommended courses: EES 124 and MATH 76. The hydrologic cycle; surface water processes; stream flow and hydrograph; properties of porous geologic materials; principles of groundwater flow; water wells; geology of groundwater occurrence; water quality and pollution. Field trip required. (2 lecture, 3 lab hours) (Course fee, $35)

Units: 3
Course Typically Offered: Fall

**EES 118. Applied Geophysics**
Prerequisites: EES 1, PHYS 2A and completion of or concurrent enrollment in PHYS 2B. Presents an overview of geophysics as applied to problems in exploration, engineering, and environmental geology. Emphasizes hands-on methods of data acquisition and interpretation that entry-level geologists will most likely encounter including gravity, magnetics, seismic refraction, ground penetrating radar, down-hole surveys, and electrical resistivity. Field instrument use is used throughout. (2 lecture, 3 lab hours) (Course fee, $35)

Units: 3

**EES 122. Stratigraphy**
Prerequisites: EES 102 (may be taken concurrently). Stratigraphic principles and recognition of stratigraphic units. Emphasis on tectonostratigraphic concepts. (2 lecture, 3 lab/field hours) (Course fee, $35)

Units: 3

**EES 124. Geochemistry**
Prerequisites: CHEM 1A and CHEM 1B and EES 1 or EES 15; EES 12 and EES 101 recommended. Chemistry applied to earth processes and evolution. Reactions involved in origin and transformations of natural waters, rocks, and minerals. Crystal chemistry and behavior of elements and isotopes. (3 lecture hours) (Formerly GEOL 124)

Units: 3
EES 125. Global Paleoclimates
Prerequisites: EES 1 and either MATH 2, MATH 5, or MATH 75. Introduction to processes and mechanisms behind gradual and abrupt climate change over the last 500 million years. Discussion of investigation methods in paleobiology, paleogeography, and paleoceanography. Proxies interpretation for building age models and correlation of marine and terrestrial records.
Units: 3

EES 130T. Advanced Problems in Geology
Prerequisite: senior standing in geology. Topics or problems in the following fields: engineering geology, geology of North America, field geology, micropaleontology, advanced ground water geology, sedimentation and sedimentary rocks, geochemistry, geophysics, volcanic geology and marine geology. Some topics may have labs.
Units: 1-3

EES 130T. Research Seminar in Geosciences
The aim of this course is to expose undergraduate students to selected research and career topics in the geosciences. Speakers within the department and outside the department and university will address topics in their specialty. (Offered Spring 2020)
Units: 1

EES 135W. Dinosaurs
Prerequisite: satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement, to be taken no sooner than the term in which 60 units are completed. Introduction to the dinosaurs as revealed from sedimentary rocks and fossils, including their evolution, diversity, habitats, extinction, and fossilization. Develops skills for scientific writing of proposals, abstracts, journal articles, and reviews. Meets the upper-division writing skills requirement for graduation (3 lecture hours)
Units: 3
Course Typically Offered: Fall, Spring

EES 150T. Studies in Earth Science
Applicable to the geology major only with prior departmental approval. Prerequisite: EES 1. Earth science topics designed for students minoring in geology, with an interest in earth science, in teacher training, and for elementary and secondary teachers.
Units: 1-3

EES 150T. Using Excel to Develop Models of Geological Data
This is a hands-on class where in each meeting students will be given a new data set, and will create a model, using Excel, to explain the data. Students will discover what comprises a successful or a failed model and how models are adjusted to turn failure into success, and vice versa. This is not a class on computer programming. Students will learn how to use Excel during the course, but some familiarity with the program will be helpful and access to Excel and a laptop computer an absolute must, since we will use these at every class meeting. (Offered Spring 2020)
Units: 3

EES 154. Introductory Earth Science
Not applicable to the B.S. in Geology. Appropriate for liberal studies majors and K-6 teachers. Earth systems interactions demonstrated through hands-on activities, experiments, and field work. Topics include recognition, origin, and use of rocks and minerals; geologic time and fossils; interpretation of landscapes and the rock record; and plate tectonics. (2 lecture, 2 lab hours, 1 hour arranged) (Course fee, $10)
Units: 3
Course Typically Offered: Spring

EES 155. Discovering Earth Science
Not applicable to the B.S. in Geology. Prerequisites: EES 1, or EES 112, or instructor's permission. Appropriate for students and 7-12 teachers seeking a secondary school science credential. Activity-based discovery of earth science and its integration with other sciences. Topics include energy in the earth system, geochemical cycles, dynamic interactions between the lithosphere, atmosphere, and hydrosphere, and origin/evolution of the earth. (2 lecture, 2 lab hours, 1 hour arranged) (Course fee, $10)
Units: 3
Course Typically Offered: Spring

EES 160. Field Studies
Prerequisite may be specified by instructor. Field trips during weekends or winter/spring recess to geologically important and significant areas such as the Grand Canyon, Baja California, the Sierra Nevada, Death Valley.
Units: 1-4

EES 167. Oceans and Atmosphere and Climate
Prerequisite: G. E. Foundation and Breadth Area B. Integrated introduction to oceans, and atmosphere, and climate changes: their origin and evolution; plate tectonics; ocean currents, waves, and tides; atmospheric circulation and El Nino; production and life; and environmental issues and concerns. G.E. Integration IB.
Units: 3
Course Typically Offered: Fall, Spring

GE Area: IB

EES 168. California's Earth System
Prerequisites: G. E. Foundation and Breadth Area B. Not applicable to B.S. in Geology. Interaction of earth, water, air,
and life in California's earth system over geologic time. Human interaction with the environment. G.E. Integration IB.

Units: 3
Course Typically Offered: Fall, Spring

EES 177. Quantitative Methods for Earth Science
Prerequisites: EES 1; MATH 75. Applications of mathematical techniques and quantitative methods in earth science; introduction to basic skills, including statistical methods, numerical techniques, matrix operations, and spatial analysis. (2 lecture, 3 lab hours)

Units: 3

EES 178. Geostatistics
Prerequisites: EES 1 or EES 4; Math 75 recommended. Principles and application of geostatistics and visualization techniques in Geo-environmental sciences. Topics include spatial and temporal correlation, variograms, kriging, and factor analysis, etc. Techniques are used for evaluation of mineral deposits and characterization of an environment with limited sampling data. (2 lecture, 3 lab hours, 1 day required field tests).

Units: 3
Course Typically Offered: Fall

EES 180. Computer Applications in Geology
Use of computers in geology, focusing on such applications as multi-dimensional graphics, desktop mapping, communications, on-line resources, modeling. (2 lecture, 3 lab hours)

Units: 3

EES 185. Remote Sensing for the Natural Sciences
Prerequisite: General Education Breadth, Area B; GEOG 105 recommended. Introduction to remote sensing techniques, including ultraviolet, visible, and infrared electromagnetic sensors, both space and aircraft based, and acoustic methods. Laboratory exercises will use examples from geology, agriculture, and society. familiarity with computers required. (2 lecture, 3 lab hours)

Units: 3

EES 186. Environmental GIS
Prerequisite: GEOG 107 recommended. Spatial information management, analysis, interpretation, and display using computer methods. Map concepts, spatial relationships, database design, and spatial analysis of data. Laboratory exercises using geologic map data, faults, earthquake epicenters, stream habitats and restoration, and endangered species. Familiarity with computers required. (2 lecture, 3 lab hours)

Units: 3

Course Typically Offered: Fall

EES 187. Biogeochemistry
Prerequisites: CHEM 1A and 1AL, 1B and 1BL; BIOL 1A, 1B and 1BL; PHYS 2A or PHYS 4A and 4AL; EES 124; MATH 75. Comprehensive understanding of the processes that alter the surface of the Earth drawing on the foundational principles of biology, chemistry, and geology. Reactions that reshape modern earth are facilitated by biological, geological, and chemical interaction whose timescale is critical to understanding significance and connectedness to other reactions and cycles. (3 lecture, 3 lab hours)

Units: 4

EES 190. Independent Study
See Academic Placement - Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

EES 191. Environmental Science Capstone
Prerequisites: EES 124, EES 104W. This course surveys significant environmental challenges facing our local communities. We will evaluate scientific inquiry and investigation of environmental questions and design projects that attempt to seek solutions. Students will complete a data-driven study using an evidence-based approach to proving and disproving tractable hypotheses. This work will be presented in a final scientific presentation in oral and written form.

Units: 3
Course Typically Offered: Spring

EES 199. Undergraduate Thesis
Prerequisites: EES 104W; senior standing. Independent research project in any geology or environmental science topic supervised by a faculty member, and leading to completion of baccalaureate degree.

Units: 3
Course Typically Offered: Fall, Spring

EES 199S. Undergraduate Thesis through Service Learning
Prerequisites: EES 102, 104W. 106, 108, 178, 186. Independent, service-learning based, culminating research on any geology or environmental science topic supervised by a faculty member, and leading to completion of a thesis with academic and applied values. Project must meet the specified needs of an identified community partner.

Units: 3
Course Typically Offered: Fall, Spring

EES 201. Seminar in Geology
Prerequisite: graduate standing. Seminar covering advanced and evolving topics in the earth sciences. Requirements include active discussion participation, frequent oral presentation, and
written research papers. Satisfies Graduate Writing Skills requirement. (3 seminar hours)

Units: 3

EES 202. Geology Laboratory Teaching Techniques
Laboratory safety, lab lecture techniques, earth and environmental science activity design, equipment setups, student evaluation methods and grading, peer teaching assessment, leading field trips, etc. Primarily for teaching associates in geology. CR/NC grading only. (one 2-hour lab)

Units: 1

EES 206. Landslides
Landslides is an interactive/discussion course examining geological and engineering aspects of slope movements, slope stability analysis, and landslide mitigation. Current concepts, methods, and techniques applied to landslides for recognition, field study, analysis, and control will be explored. ( Formerly EES 251T)

Units: 3

EES 210. Analysis of Faults and Earthquakes
Prerequisites: EES 106 and EES 107. Includes plate tectonic theory; kinematics and dynamics of fracturing and faulting; formation and propagation of seismic waves; recognizing and quantifying seismic potential; remote sensing and geophysics in applied fault studies. Field projects and oral presentations required. (2 lecture, 3 lab hours) (Course fee, $35)

Units: 3

EES 211. Fundamentals of GIS
Fundamental concepts and techniques of GIS; hands-on labs on data exploration and analysis; advanced skills in spatial and 3-D analysis on terrain and watershed delineation; midterm and final term projects. Asynchronous online.

Units: 3

EES 212. Geospatial Technologies
The course introduces global positioning systems, remote sensing, and light detection and ranging technology and their integration with Geographic Information Systems. Asynchronous online.

Units: 3

EES 214. Advanced Spatial Analysis
Prerequisites: EES 211. Spatial analysis is an advanced course in GIS that exposes students to an array of spatial analysis theories, techniques, and practices. Reading, demonstrations, applied assignments. Primarily asynchronous online.

Units: 3

EES 216. GIS Practicum
Prerequisites: EES 211; EES 212; EES 214 co-requisite. Culminating experience for Advanced Certificate in GIS designed to demonstrate advanced working knowledge of GIS. Proposal; data privacy and management; GIS project; documentation; write-up; and presentation. Primarily asynchronous online.

Units: 3

EES 217T. Topics in Hydrogeology and Environmental Geology
Prerequisite: major in geology and/or permission of instructor. Studies of current issues and recent research topics which may include groundwater contamination, environmental pollution, and hazardous and nuclear waste management. Readings from books, journals, and government publications. Independent research and oral presentation required. Laboratory activities may be required.

Units: 2-3

EES 220. Groundwater Hydrology
Prerequisites: EES 117. MATH 77 recommended. Principles of flow through porous and fractured media; groundwater hydraulics in the saturated and unsaturated zones; contaminant transport; introduction to groundwater models. (2 lecture, 3 lab hours) (Course fee, $35)

Units: 3

EES 230. Contaminant Transport
Prerequisites: EES 117 or permission of instructor, MATH 76 and EES 178 recommended. A study of analytical methods to predict and draw maps of contaminant transport in water, air, and soil. MathCAD program will be used to solve the governing equations of chemical diffusion, advection and dispersion in the environment.

Units: 3

EES 231. Depositional Systems
Prerequisites: EES 102 and EES 105. Investigation of modern and ancient depositional systems. Field trip required. (2 lecture, 3 lab hours) (Course fee, $35)

Units: 3

EES 232. Basin Analysis Seminar
Prerequisites: EES 102 and EES 106. Topics may include: basin styles, tectonics and sedimentation, seismic stratigraphy, subsidence and thermal history, and petroleum plays. Research paper and oral presentation required. (Course fee, $35)

Units: 3

EES 250T. Topics in Geology
Prerequisite: major in geology and/or permission of instructor. Advanced studies of such areas as petrology, marine geology,
and regional stratigraphy. Some topics may have labs and field trips.

Units: 1-3

EES 250T. Using Excel to Develop Models of Geological Data
This is a hands-on class where in each meeting students will be given a new data set, and will create a model, using Excel, to explain the data. Students will discover what comprises a successful or a failed model and how models are adjusted to turn failure into success, and vice versa. This is not a class on computer programming. Students will learn how to use Excel during the course, but some familiarity with the program will be helpful and access to Excel and a laptop computer an absolute must, since we will use these at every class meeting. (Offered Spring 2020)

Units: 3

EES 250T. Research Seminar in Geosciences
The aim of this course is to expose graduate students to selected research and career topics in the geosciences. Speakers within the department and outside the department and university will address topics in their specialty. (Offered Spring 2020)

Units: 1

EES 251T. Topics in Engineering Geology
Prerequisites: major or minor in geology; permission of instructor. Advanced studies in areas such as slope stability, ground water monitoring, drilling and core logging, water sampling, hazardous waste site investigations, and geophysical instrumentation.

Units: 1-3

EES 263. Water Resource Management Internship
Course is taken with permission from the internship coordinator and program director. The internship requires at least 150 hours of work at pre-qualified, academically related site. Final report and presentation required. Report and presentation judged and graded by the faculty.

Units: 3

EES 264. Climatology
This course provides an understanding of weather phenomenon as the foundation of climate. Climate data from the National Climate Data Center will be manipulated to integrate spatial and temporal changes along with future forecast changes to understand natural water systems.

Units: 3

EES 265. Hyrdological System
Mechanisms of water and sediment transport in the hydrologic cycle. Advanced tools such as GIS will be used to quantify the storage and movement of water in the atmosphere, land surface, soil and underground aquifers.

Units: 3

EES 266. Natural and Agricultural Uses of Water
This course reviews natural and agricultural water use. The course identifies stakeholders and addresses natural water quality protection. Agricultural issues include soil properties, irrigation, water quality, and water reuse. Students will focus on water supply and quality management issues.

Units: 3

EES 267. Urban and Industrialized Water Use
This course introduces water management systems in urban and industrial settings. The basics of water occurrence, use, transport, treatment, and disposal are included.

Units: 3

EES 268. Water and Politics
This course explores the role of politics and public policy in developing water resources for California and the Central Valley. It provides background for understanding today's battles over the control and use of water and the future of water policy.

Units: 3

EES 269. Environmental Policy for Water Management
This course provides an overview of environmental law and policy including environmental impact assessment. Students prepare decision-making documents under the auspices of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) for water specific projects.

Units: 3

EES 270. Water Economics
This course will analyze water availability in light of water resource economics. Analytical tools will be used for policy and project assessment. Access points will be established for key material, providing for problem comprehension and the initiation of contemporary solutions.

Units: 3

EES 271. Volcanology
Prerequisite: EES 101. A study of volcanic activity, including classification, characteristics, products of eruptions, human interactions with volcanoes and related phenomena. Field trips required. (1 lecture, 6 lab hours) (Course Fee $35)

Units: 3

EES 290. Independent Study
See Academic Placement - [-LINK-]. Approved for RP grading.

Units: 1-3
EES 298. Water Resource Management Project
Students receive data-sets and lists of deliverables and due dates. Student use course skills to analyze, synthesize, and produce professional quality documents and presentations within a time frame. A passing grade must be achieved for PSM in WRM completion.

Units: 3

EES 298C. Project Continuation
Pre-requisite: Project 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

EES 299. Thesis
Prerequisite: See [-LINK-]. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.

Units: 2-6

EES 299C. Thesis Continuation
Pre-requisite: Thesis EES 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

NSCI 15. Environmental Science: An Integrative Course
A study of the interrelationships among the anthropological, biological, and geological aspects of man/woman and the natural environment. Team taught. CR/NC grading only. (HNE program field trip fee, $75)

Units: 3

GERONTOLOGY

GERON 10S. Journey of Adulthood: Planning a Meaningful Life
An introduction to; theories, concepts, perspectives, and in the study of aging; psychological, physiological, sociological, cultural, ethnic issues fundamental to planning a meaningful life during the journey of adulthood. Develop a healthy lifestyle. Cultivate lifelong learning and satisfaction. G.E. Breadth E1. (Formerly GERON 10)

Units: 3
Course Typically Offered: Fall, Spring

GERON 18. Women and Aging
(WS 18 same as GERON 18.) Interdisciplinary course designed to facilitate the understanding of older women and the physiological, psychological, and social aspects of the aging process. G.E. Breadth E1. (Formerly WS 118)

Units: 3
GE Area: E1

GERON 100. Images of Aging in Contemporary Society
Prerequisites: G.E. Foundation and Breadth Area D. Explores aging theories; multicultural portrayals of aging through art, literature, and media; examines generational/ societal perceptions of aging. Develops awareness of competence in recognizing different images, and examines the influence of these images on societal/ emotional status, resources and other elder issues. G.E. Integration ID.

Units: 3
Course Typically Offered: Fall, Spring

GERON 103. Psychology of Aging
(GERON 103 same as PSYCH 103.) Psychological study of maturity and old age; physiological and sociological considerations.

Units: 3

GERON 111. Heritage and Aging
Aging is continual from birth to death. Events throughout a person's life coincide with dates of many different historical, cultural, and humanistic occurrences. Students explore the interrelationship of events to an elder's heritage, creativity, and potential for successful aging. G.E. Breadth E1.

Units: 3
Course Typically Offered: Fall

GERON 115. Health Issues of Aging
(PH 115 same as GERON 115.) Basic principles and concepts of the aging process; includes the physical, social, emotional and mental components of health. Benefits of health promotion and preventive action for the aging are also explored.

Units: 3
Course Typically Offered: Fall

GERON 125. Social Services for the Aging
(SWRK 125 same as GERON 125.) Students will be acquainted with the common bio-psycho social needs of the aging in the United States and the social services available to meet those needs. Within the context of social work values and problem-solving methods, attention will be given to issues of ethnicity, gender, and gaps in services.

Units: 3
Course Typically Offered: Spring

GERON 132. Alzheimer's Disease
Focuses on Alzheimer's Disease (AD) and other related dementias. Course will include a complete assessment, evaluation, and treatment of AD. (Formerly GERON 180T section)
GERON 134. Mental Health and Caregiving
The impact of mental disorders on older adults and their caregivers will be presented. Evidence-based guidelines for care, patient and caregiver issues, and non-pharmacologic management principles to delay institutionalization and promote caregiver peace of mind will be addressed.
Units: 3
Course Typically Offered: Fall

GERON 137. Community Service in Gerontology
Prerequisite: Permission of instructor. Service oriented course designed to provide opportunities to observe, interact, and learn from elders in gerontological settings. Hour requirements are supported through writing and discussion of issues and solutions. Credit/No Credit grading. (Formerly GERON 180T)
Units: 1-3

GERON 139. Death and Dying
Exploration of personal values and beliefs as well as diverse spiritual and cultural beliefs, groups regarding death, and its meaning for living. Practical matters surrounding death are also addressed. (Formerly GERON 180T)
Units: 3
Course Typically Offered: Fall

GERON 140. Aging in America: Politics & Change
An introduction to policies, politics, and programs of an aging society. The course will examine the historical, social, cultural, economic, and demographic issues affecting the elderly and will provide an overview of federal and state legislation and programs for older Americans.
Units: 3

GERON 148. Biophysical Aspects of Aging
(KINES 148 same as GERON 148) Theories of aging, biological mechanisms of the aging process, and the role of physical activity in those physiological functions influenced by age. (Spring only)
Units: 3
Course Typically Offered: Spring

GERON 150. Communication and Aging
(COMM 150 same as GERON 150.) Focusing on the communication aspects of the aging process, organized around the major communication components of intrapersonal, interpersonal, and mass communication with addition of such topics as attitudes, stereotypes, nonverbal, and the communication aspects of health care.
Units: 3

GERON 161. Multiculture/Aging
Prerequisite: G.E. Foundation and Area D. Explores diversity and commonality among older persons. Analysis of ways demographic, ethnic, cultural, location, and situation topics relate to gerontological concepts, research, and theories. Presents problems with health, socioeconomic, and minority issues. Discusses ageism, racism, and sexism. Multicultural/International M/I.
Units: 3

GERON 180T. Topics in Gerontology
Various topics in the field of aging; subjects such as Alzheimer's disease, health, aging, and elder abuse. Content varies from semester to semester.
Units: 1-3

HHS 10. Exploring Health Careers
Explores various career choices available in the fields of health and human services. Used in conjunction with preprofessional preparation advisement program in the area of prehealth careers. (1 lecture, 2 lab hours) CR/NC grading only.
Units: 2

HHS 18. Career Pathways in Health and Human Services
Overview of health and human services professions. Review of interdisciplinary professional education and service, as well as the principles and philosophies of health and human services. Responsibilities, educational requirements, practice parameters, and job locations of various professionals are discussed. HHS 18 satisfies a course in the Pre-Health major and as an elective section of CHHS majors.
Units: 1

HHS 100T. Selected Topics in the Health and Human Services Professions
Interdisciplinary topics of current interest covering subject matter that is appropriate for all health and human services professional disciplines. Topics are rotated each semester. Field assignments may be required.
HHS 114S. Collaborative Leadership in Health and Human Services
Prerequisites: Admission to the CHHS Honors Program. Introduction to collaborative leadership values, knowledge and skills in Health and Human Services interdisciplinary settings as well as assessing current issues in the field of Health and Human Services. Classroom content will be reinforced through service-learning, which is an integral component of the course.
Units: 3
Course Typically Offered: Fall

HHS 115S. Applied Collaborative Leadership in Health and Human Services
Prerequisites: Admission to the CHHS Honors Program and completion of HHS 114S. Apply collaborative values, knowledge and skills necessary to implement a community needs assessment project in an interdisciplinary context. Classroom content will be reinforced through service-learning, which is an integral component of the course.
Units: 3
Course Typically Offered: Spring

HHS 116W. Interprofessional Communication in Health and Human Services
Prerequisites: Satisfactory completion (C or better) of ENGL 5B or ENGL 10 graduation requirement; minimum of 56 units completed; declared major or minor in the College of Health and Human Services. Introduction to interprofessional communication and collaboration with an emphasis on advocacy and population-centered service delivery. Develops skills for written communication in the health and services professions. Meets the upper-division writing skills requirement for graduation.
Units: 3
Course Typically Offered: Fall, Spring

SMITTCAMP HONORS COLLEGE

BIOL 10H. Life Science
Not open to students with credit BIOL 1A. Shows how living things work and why they work that way. Discusses biology from chemical and physical foundations through ecological and evolutionary processes. Examines biology and its relationship to human affairs. (2 lecture, 2 lab hours) G.E. Breadth Area B2.
Units: 3
GE Area: B2

CFS 38H. Honors Lifespan Development
Open to Smittcamp Honors College Students only. Basic theories, research, and principles of physical, cognitive, and psychological development from conception to death presented from the perspective of diverse families. This honors course emphasizes reading original theoretical and empirical works by prominent developmentalists and student conducted research project. G. E. Breadth E 1.
Units: 3
GE Area: E1

CHEM 10H. Chemistry & Society
Prerequisites: G.E. Foundation B4. Not open to students with credit in college chemistry; for non-science majors. Discusses significance of chemical principles in contemporary society; benefits adn hazards relative to areas such as energy, health, diet, environment and agriculture. (3 lecture, 3 lab hours) G.E. Breadth B1.
Units: 4
GE Area: B1

CHEM 160H. Research Techniques
Prerequisites: Admission to the chemistry honors program or permission of instructor. Concepts of experimental design and the development of practical research expertise and communication skills through the planning, completion, and presentation (written and oral) of a short laboratory project (1 lecture, 6 lab hours).
Units: 3
Course Typically Offered: Spring

CHEM 165SH. Peer Instruction in Chemistry
The development of improved oral communication, reinforcement of foundational chemistry knowledge, and development of teaching skills through service as a peer-instructor in chemistry.
Units: 3
Course Typically Offered: Fall

CHEM 180H. Honors Seminar in Chemistry
Prerequisites: Admission to the chemistry honors program or permission of instructor. Development of critical evaluation skills of presentations and current literature and research in various chemistry disciplines.
Units: 1-2
Course Typically Offered: Fall

CHEM 199. Undergraduate Thesis
Prerequisites: CHEM 190 or 160 or 160H. Preparation, completion, and submission of an acceptable thesis based on undergraduate research in chemistry.
Units: 3
Course Typically Offered: Fall, Spring

COMM 6H. Rhetoric for Autonomy and Collaboration in the Marketplace of Ideas
Open for students in the Smittcamp Family Honors College only. Explores invitational rhetoric and its civic function
in contemporary public discourse; experiences designed to enhance fundamental communication skills-- research, organization, reasoning, empathic listening and problem-solving-- through series of oral presentations. G.E. Foundation A1.

Units: 3  
GE Area: A1

**DRAMA 75H. Theatre in Contemporary American Culture**

Open only to Smittcamp Honors College students. Introduction to the practice and scholarship of American theatre today. Application of critical methodology to four areas of theatrical production (1) Theatre architecture, (2) Acting, (3) Directing, (4) Design. Attendance at 2-3 theatre performance required.

Units: 3  
GE Area: C1

**EES 8H. Natural Disasters and Earth Resources**

Prerequisite: G.E. Foundation B4. Processes and materials that produce the different geologic resources and hazards (earthquakes, volcanoes, floods, landslides). Plate tectonic theory (including continental drift) as the unifying model to explain geologic phenomena. Emphasizes the relationship between geology and humans. (3 lecture, 2 lab hours: required field trip(s)). Open to Honor Students Only.

Units: 4  
GE Area: B1

**ENGL 10H. Honors Accelerated Academic Literacy**

Open to students in the honors college only. Reading and writing in academic and public genres, special attention to rhetorical decision-making and critical analysis. Guided instruction in reading and responding to texts. Participation in public and academic conversations via research in primary and secondary sources. Portfolio Assessment. A grade of C or better is required to satisfy the University's English composition requirement. G.E. Foundation A2.

Units: 3  
GE Area: A2

**ENGL 42H. Creative Writing**

Open to students in the Smittcamp Family Honors College only. Beginning workshop in the writing of poetry and fiction; appropriate readings and analysis. G.E. Breadth C1.

Units: 4  
GE Area: C1

**HIST 15H. Trials of Century**

Studies celebrated legal trials from 1896 to 2000 as windows for understanding larger historic context. Cases address issues such as racial discrimination, freedom of speech and religion, reproductive rights, consumer protection, war crimes, treason and capital punishment. G.E. Breadth D1.

Units: 3  
GE Area: D1

**HONOR 1. Honors Colloquium**

Colloquium for students in the Smittcamp Family Honors College. Overview of the university. Presentation and discussion of current topics. Special presentations by faculty, campus guests, and senior honors project students.

Units: 1, Repeatable up to 6 units

**HONOR 10. Beginning Workshop in the Writing of Poetry - Global Culture, History and Values**

Open only to students in the Smittcamp Family Honors College. Beginning workshop in the writing of poetry; appropriate reading and analyses. This course will encourage students to discover creative and innovative ways to ameliorate conditions while deploying cultural diversity and vitality found in our Valley and University. G.E. Breadth C1.

Units: 3  
Course Typically Offered: Fall  
GE Area: C1

**HONOR 11. Introduction to the Humanities - Global Culture, History and Values**

Prerequisite: G.E. Foundation A2. Open only to students in the Smittcamp Family Honors College. Inter-relationships among art, literature, music, and philosophy, from Antiquity through the present. This course will encourage students to discover creative and innovative ways to ameliorate conditions while deploying cultural diversity and vitality found in our Valley and University. G.E. Breadth C2.

Units: 3  
Course Typically Offered: Fall  
GE Area: C2

**HONOR 12. U.S. in the Twentieth Century World - Global Culture, History and Values**

Open only to students in the Smittcamp Family Honors College. This course studies the role of the United States in the world during the long twentieth century. This course will encourage students to discover creative and innovative ways to ameliorate conditions while deploying cultural diversity and vitality found in our Valley and University. G.E. Breadth D1.

Units: 3  
Course Typically Offered: Fall  
GE Area: D1

**HONOR 13. Human Fragility and Cultural Transcendence - Global Culture, History and Values**

Open only to students in the Smittcamp Family Honors College. This course explores human nature through an interdisciplinary lens, drawing primarily upon the social sciences but also garnering insights from the natural sciences and the humanities. This course will encourage students to discover creative and innovative ways to ameliorate conditions while deploying cultural diversity and vitality found in our Valley and University. G.E. Breadth D3.

Units: 3
HONOR 20. Public Communication and Civic Engagement
Open only to students in the Smittcamp Family Honors College. In this course, you will learn how to develop informative and persuasive messages on topics relating to science and how to present messages effectively in face-to-face and mediated contexts. G.E. Foundation A1.

Units: 3
Course Typically Offered: Spring

GE Area: A1

HONOR 21. Science Communication
Open only to students in the Smittcamp Family Honors College. This course showcases life sciences through topics such as nutrition, vaccination, and conservation to help you make informed decisions and communicate your point of view to the public. G.E. Breadth B2. (2 lecture, 3 lab hours)

Units: 3
Course Typically Offered: Spring

GE Area: B2

HONOR 101. Emerging Voices After Colonialism: Revolution in Theory, Revolution in Practice
This course will explore the expanding field of postcolonial studies. Postcolonialism critically analyzes the dialectic between Western imperialism and resistance to colonialism in Africa, Asia and the Caribbean. Readings will include primary sources, essays of criticism and theory, colonial literature, and a diverse selection of novels from formerly colonized nations. This course focuses on G.E. Integration IC and blends with G.E. Integration ID and Multicultural/International.

Units: 4

GE Area: ID

HONOR 102. Revolutions in Natural and Social Sciences
This course examines fundamental changes in natural and social sciences. It focuses first on revolutions in natural sciences, particularly in physics and biology. It then surveys major changes in economic theory with an emphasis on the so-called marginal revolution. G.E. Integration ID. This course focuses on G.E. Integration ID and blends with Multicultural/International.

Units: 4

GE Area: C1

HONOR 103. Ecological and Social Effects of the Industrial Revolution on the Third World
This course will examine the impact of the Industrial Revolution and the accompanying industrialized nations' demand for tropical products on Third World nations. By integrating biological, geographical, ecological, historical, and social effects we will put the Industrial Revolution into a global perspective by integrating biological, geographical, ecological, historical, and social effects. This course focuses on G.E. Integration IB and blends with G.E. Integration ID and Multicultural/International.

Units: 4

HONOR 180. Special Projects in Honors
Individual projects in the Smittcamp Family Honors College. Projects related to Honors College courses; for example internships, research papers, community service projects, new classroom approaches and learning communities.

Units: 1-3

HUM 10H. Intro Humanities of the Western World
Not open to students outside the Honors College. Prerequisites: G. E. Foundation A2 (ENGL 5B or ENGL 10). Accelerated survey of the relationships between the art, literature, and philosophy of classical antiquity, from classical Greece to the dawn of the Renaissance. G.E. Breadth C2

Units: 3

GE Area: C2

LATIN 1AH. Honors Elementary Latin
Honors Latin 1A. Not open to students outside the Smittcamp Family Honors College. An accelerated introduction to the Latin language, its practical relation to Romance Languages and English, with study of Roman culture and its enduring influence. G.E. Breadth C2

Units: 3

GE Area: C2

MUSIC 60H. Music in Social Context
Exploration of various settings in which music has been an important indicator of social class and class values. Emphasis on western classical music and American jazz. Attendance at 2-3 performances of music required. G. E. Breadth C1.

Units: 3

GE Area: C1

NSCI 4H. Science and Nonsense; Critical thinking and the philosophy of science
Shows the use of language, rational inquiry, and logic in science, distinguishing science fact from science fiction. Inductive and deductive methods, judgement, opinion, origins of knowledge, belief of actions. A critical examination of contemporary pseudoscientific issues (creation science, UFO's, astrology, etc.) G. E. Foundation A3

Units: 3

GE Area: A3

NUTR 53H. Nutrition and Health
Open to Smittcamp Honors College students only. Optimal nutrition to reduce the risk of cancer, heart disease, allergies, hyperactivity and other diseases. Social, psychological and cultural dictates which affect food selection and health. Personal strategies to develop nutrition plan for better health.

Units: 3
PHIL 32H. Life, Death, and Afterlife
Diverse reflections (religious and philosophical) on the meaning of life, death, and afterlife. The nature of the soul (e.g. immortal/mortal); connection to the body; implications of an afterlife (if any) for this life; includes Western and non-Western perspectives. G. E. Breadth E1
Units: 3
GE Area: E1

PHIL 35H. Logic for Autonomy and Collaboration in the Marketplace of Ideas
Explores techniques for analysis of reasoning in contexts ranging from interpersonal communication through scholarly and political discourses. Theoretical grounding for these techniques, including both central ideas from philosophy of logic and readings from classic and contemporary sources on freedom of thought, freedom of conscience, and the autonomy of reason. G.E. Foundation A3.
Units: 3
GE Area: A3

PLSI 2H. American Government and Institutions
Meets the United States Constitution requirement and the federal, California state, and local government requirement. Not open to students with credit in PLSI 101. Development and operation of government in the United States; study of how ideas, institutions, laws and people have constructed and maintained a political order in America. G.E. Breadth D2.
Units: 3
GE Area: D2

PLSI 71H. Introduction to Environmental Politics
Introduction to the study of environmental politics and policy making in the United States; a brief history of environmentalism; basic principles in environmental policy making including interest groups, legislatures, and levels of government selection of current topics in environmental issues. G.E. Breadth D3.
Units: 3
GE Area: D3

PSYCH 62H. Introduction to Social and Cultural Psychology
Interaction between social environments and behavior with an emphasis on culture and cultural differences. Includes topics such as social influence and beliefs, conformity, the self, attitude change, group influence, prejudice and racism, aggression, attraction and intimacy, altruism and helping. G.E. Breadth D3.
Units: 3
GE Area: D3

HISTORY

CI 161. Math Mtl S Sci
Units: 3, Repeatable up to 999 units

EHD 154B. Final Student Teaching Seminar - Social Sciences
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss various topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 1

HIST 1. Western Civilization I
The Mediterranean and European world from prehistoric to early modern times. Social, political, intellectual, and artistic movements in the ancient Fertile Crescent, classical Greece and Rome, and in Medieval, Renaissance, and Reformation Europe.
Units: 3
Course Typically Offered: Fall, Spring

HIST 2. Western Civilization II
Survey of modern European culture since the 17th century. Impact of industrialization and urbanization; political revolutions and ideologies; intellectual, artistic, and religious movements; European imperialism; the two world wars and changing patterns in contemporary European life.
Units: 3

HIST 2Z. West Civliztn II
Units: 3

HIST 3. Colonial Americas
Examines the colonial history of North and South America. Analyzes the impact of European colonization of Native American societies, the African slave trade, the evolution of colonial societies, and the independence movements in the 18th/19th centuries.
Units: 3

HIST 4. Introduction to Historical Skills
Students receive careful guidance in basic historical skills; writing book reviews, taking notes, conducting research, quoting and documenting sources, formulating thesis statements, and presenting one's research in both oral and written forms.
Units: 3
Course Typically Offered: Fall, Spring

**HIST 5. European Civilization**
This course explores European Civilization, focusing on specific themes, events, and ideas that have shaped the history of Europe, and covering any aspect from Ancient to Present. Course covers social, intellectual, military, economic, and cultural aspects of European Civilization.

Units: 3

**HIST 6. East Asian Civilization**
Introduction to the history and cultures of the East Asian countries, particularly China, Japan, and Korea. Examination of the East Asian mind as reflected in Confucianism, Taoism, Buddhism, and in resistance to the challenges of the West.

Units: 3

**HIST 7. African Civilization**
Survey of African history from ancient times to the present. Emphasis is on political, economic, and religious movements which have contributed to the rich diversity and the distinctive unity of African civilization.

Units: 3

Course Typically Offered: Spring

**HIST 8. Republics of Latin America**
Rise of the modern Hispanic American states since 1800: political, social, economic development.

Units: 3

Course Typically Offered: Fall, Spring

**HIST 9. Russian and Eurasian Civilization**
Introduction to the history, culture, literature and visual and performing arts of Russia and Eurasia from the late medieval period to the present.

Units: 3

Course Typically Offered: Fall, Spring

**HIST 11. American History to 1877**
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Examines the history of the United States through 1877, looking at the significant events from the founding of the colonies through Reconstruction, including the role of major ethnic and social groups in the formation of the American nation. G.E. Breadth D1.

Units: 3

Course Typically Offered: Fall, Spring

GE Area: D1

**HIST 12. American History from 1877**
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Examines the history of the United States from 1877, looking at the significant events from the end of the Civil War to the present, including the role of major ethnic and social groups in the formation of the American nation. G.E. Breadth D1.

Units: 3

Course Typically Offered: Fall, Spring

**HIST 100W. Historical Research and Writing**
Prerequisites: HIST 4 and GE Foundation Area A2 passed with a C grade, upper-division standing. Individual guidance and criticism in research, writing, argumentation, and documentation. While engaging in historical research and writing, students gain a deeper appreciation of the discipline's theoretical and methodological concerns. Meets the upper-division writing skills requirement for graduation.

Units: 3

Course Typically Offered: Fall, Spring

**HIST 101. Women in History**
(HIST 101 same as WS 101) Prerequisite: G.E. Foundation and Breadth Area D. Historical survey of women's roles in history, with an emphasis on the emergence of the feminist movement. G.E. Integration ID

Units: 3

Course Typically Offered: Fall, Spring

**HIST 102T. Topics in Women's History**
(HIST 102T same as WS 102T.) (See Schedule of Courses for specific topics.)

Units: 3, Repeatable up to 6 units

**HIST 102T. Women and Revolution, Revolutionary Women**
This course is an interdisciplinary exploration into the political theory and historical experience of the political concept of "revolution" through the lens of feminism and experiences of women. Using key historical moments as backdrop, topics include: the view of women in major strains of revolutionary theory; revolutionary theory written by women; women as political actors during revolutions; symbolic and media use of women during revolutions; the impacts of revolutions on
women; the salience and critique of the idea of revolution for feminism(s), both in the past and today. (Offered Spring 2020)

Units: 3

HIST 102T. Jewish Women and U.S. Popular Culture
A study of representations of and texts by Jewish women in U.S. popular culture. (Offered Spring 2020)

Units: 3

HIST 103. History of Early Christianity
Early Christianity from the first century to eve of Reformation.

Units: 3

HIST 104. History of Women and Men in Modern Europe
This course studies the everyday lives of modern European women and men in historical context. It examines how gender identities and relations developed and changed through industrialization, revolution, wars, and social and political movements.

Units: 3

HIST 105. Armenian Genocide in Comparative Context
(ARMS 105 same as HIST 105.) Review of theory and characteristics of genocide. Study of the Armenian Genocide as an example and show comparison with other genocides in the 20th century. Discusses role of international constituencies and prevention and lessons of genocide. (Formerly HIST 109T section)

Units: 3

HIST 106. Armenians in North America
(ARMS 106 same as HIST 106). Study of six waves of Armenian migrations to North America from 1870-1995. Topics discussed include entry, settlement, work, family, community organizations, church, politics, culture, and integration in U.S. society. (Formerly ARMS 120T section)

Units: 3

HIST 107. Modern Middle East
Analysis of Middle Eastern history since Muhammad, with emphasis upon the 19th and 20th centuries. The Middle East under European imperial domination; nationalist movements and revolutions; the Arab-Israeli conflict; the Middle East in contemporary world politics.

Units: 3

HIST 108A. Armenian History I: Ancient and Medieval
(HIST 108A same as ARMS 108A.) History of Armenia and Armenians from prehistoric times to the beginning of the modern era. The historical process will be considered from Armenia's point of view as well as from that of its neighbors: Assyria, Iran, Rome, Byzantium, the Arabs, the Seljuk Turks, the Crusades, the Mongols, and various Turkish dynasties.

Units: 3

HIST 108B. Armenian History II: Modern and Contemporary
(HIST 108B same as ARMS 108B.) Overview of modern and contemporary Armenian history, including Armenia's relations with Persian, Turkish, and Russian empires, the Armenian Renaissance, the "Armenian Question," the Genocide, the Armenian Republic, Soviet Armenia, the Second Armenian Republic, and diasporan communities in America, Europe, and the Middle East.

Units: 3

HIST 109T. Studies in Middle East and Africa
Intensive study of special topics.

Units: 1-3

HIST 110. Ancient Near East
Ancient civilizations of the Middle East. History and culture of the Sumerians, Assyrians, Babylonians, and Persians from the dawn of history to Alexander the Great and the ascendance of Greece.

Units: 3

HIST 111. Ancient Greece and Egypt
The history and culture of ancient Greece from the Minoan-Mycenaean periods through the Golden Age of Athens to the dissolution of the empire of Alexander the Great.

Units: 3

HIST 112. Ancient Rome
The early history of Rome and the evolution of Roman society, politics, and culture through the republican and imperial periods.

Units: 3

HIST 115. Ancient Israel
Ancient Israel from Abraham to the destruction of Jerusalem in 70 A.D. Jewish religious thought is discussed by placing the books of the Old Testament in their historical context.

Units: 3

HIST 116. Greek and Roman Religion
Analysis of the religious ideas, customs, and practices of ancient Greeks and Romans from the time of Homer to the establishment of Christianity.

Units: 3

HIST 117. Alexander the Great & Hellenistic World
Examines the rise of Macedon, the conquests of Alexander the Great, and his successors' establishment of Hellenistic kingdoms in the remnants of the Persian Empire. Explores cultural, social, economic, and political interactions between Greek and Near Eastern societies (Formerly Hist 119T).
HIST 118. Augustus & Rome
Examines the history of the rise to power, rule, and influence of Augustus. Beginning with the late republican era, the course traces Augustus’ consolidation of power, transformation of Roman politics and culture, and his search for a successor (Formerly Hist 119T).
Units: 3

HIST 119T. Studies in Ancient History
Intensive study of special topics.
Units: 1-3

HIST 121. The Middle Ages
Prerequisite: HIST 1 or permission of instructor. Medieval Europe from the fall of the Roman Empire in the West to the Renaissance.
Units: 3

HIST 122. Medieval Culture
Selected aspects of medieval life and culture such as warfare, commerce, art and architecture, learning and the university presented as manifestations of the medieval mind. Extensive use of visual materials.
Units: 3

HIST 124T. Studies in Medieval History
Intensive study of special topics.
Units: 1-3

HIST 125. Renaissance
Social, intellectual, political, and economic factors that shaped Europe in the 14th and 15th centuries; humanism, foundations of the state; secularization and dissent within the church.
Units: 3
Course Typically Offered: Fall, Spring

HIST 126. Reformation
Analysis of the political, social, and intellectual movements associated with the 16th century religious upheaval.
Units: 3
Course Typically Offered: Spring

HIST 127. Women & Power in Early Mod Europe
An exploration of the roles of European women circa 1400-1800, this course studies perceptions and representations of women, and secular/religious constraints upon them. We also investigate women's own views, and the ways in which they confronted and/or manipulated social strictures.
Units: 3

HIST 129T. Studies in Intellectual and Social History
Topics concerned with ideas and movements that have significantly shaped the course of history.
Units: 1-3

HIST 130. Europe in the 17th Century
European culture, society, and politics from 1600 to the death of Louis XIV.
Units: 3

HIST 131. Europe in the 18th Century
Intellectual, social, and political development of Europe from 1715 to the French Revolution and Napoleon Bonaparte.
Units: 3

HIST 132. Revolutionary Europe
History of Europe from the French Revolution to the Russian Revolution. Social and cultural consequences of Industrialization and the rise of Nationalism and Imperialism.
Units: 3

HIST 133. Europe in the 20th Century
Narrative and interpretive account of 20th century Europe. Stress on the impact of World War I, the Communist and Fascist Revolutions, the economic recovery of Europe, and the loss of European significance in the world after World War II.
Units: 3

HIST 134. 20th Century Dictators
This course provides an in-depth analysis of the most prominent authoritarian regimes of the 20th century. An in-depth summary of their rise to power, the fundamental aspects of their regime, their foreign policy, and the significance will be provided.
Units: 3

HIST 135. European Cultural History
Analysis of European thought from the Enlightenment to the present. Major movements in philosophy, religion, literature, art, and architecture; ideologies such as conservatism, liberalism, socialism, communism, nationalism, racism, and fascism. Emphasis on ideas of lasting and worldwide influence.
Units: 3

HIST 138. World War II: A Global Conflict
A detailed examination of the military, diplomatic, political, economic, social, and cultural impact of the Second World War. The causes, conduct, and consequences of the war are analyzed.
Units: 3
HIST 139. European Diplomatic History 1890-1945
The conduct of foreign policy by European States, between 1890 and 1945, including alliances, conflicts, and treaties will be thoroughly examined and an understanding of the impact and limitations of foreign policy initiatives will be explored.
Units: 3

HIST 140. Holocaust
This course discusses the rise of National Socialism in Germany, the origins of the persecution and murder of Jews, ghettos, concentration and death camps in Germany and Eastern Europe, and the aftermath, including the Nuremberg Trials.
Units: 3

HIST 141. Modern Germany
Political and social developments from Bismarck to the present. Rise of Germany as a world power; failure of German democracy; Hitler and the Third Reich; politics of a divided Germany since 1945.
Units: 3
Course Typically Offered: Spring - even

HIST 142. Tsarist Russia
The political, economic, and social history of Tsarist Russia from 862 to 1917.
Units: 3

HIST 143. Russia and Eurasia in the 20th Century
The political, economic, and social history of Russia and Eurasia from the rise of communism to the present. Examines the rise of communism and its political and social structures. Explores Soviet systems, arts, literature, the dissident policies. Looks at the fall of communism, the end of the Soviet Union, and the new states that have emerged in its wake.
Units: 3
Course Typically Offered: Spring

HIST 144. Warfare in the Western World
This course focuses on the transformation of warfare by the advent of new technology, tactics and strategy, and the increasing ability to mobilize the entire resources and population of nations at war. Course covers U.S. Civil War, WWI, and WWII.
Units: 3

HIST 145. Spain and Portugal
Development of the Iberian Peninsula from prehistoric to modern times.
Units: 3

HIST 146. Gendered Perspectives on U.S. Immigration
This course will examine how scholars have understood the concept of gender and/or womanhood in U.S. immigration. It will also explore how gendered ideals inform the family, work life, social networks, and public policy of immigrant women in America.
Units: 3

HIST 149T. Studies in Modern European History
Units: 1-3

HIST 149TZ. England from Chaucer to Shakespeare
Units: 3, Repeatable up to 6 units

HIST 150. England to 1485
Structure of the British government, society, and economic life from Roman times to The War of the Roses.
Units: 3

HIST 151. British Empire
Rise of England and the British nation; spread of the English-speaking peoples and the transfer of British institutions; from 1485 to the modern era.
Units: 3

HIST 152. British History in Film
Discussion and written historical analysis of selected cinematic masterpieces in British history, from Henry II to the modern era.
Units: 3-4

HIST 153. United States During the Cold War
Explores the political, social, cultural, military, and economic history of the U.S. during the Cold War.
Units: 3

HIST 154. Jewish American Popular Culture
(HIST 154 same as JS 154) Prerequisite: GE Breadth Area D. Study of Jewish immigrants and subsequent Jewish American contributions to entertainment and other forms of popular culture from New York to Hollywood, particularly in film, music, and comedy. G.E. Integration ID.
Units: 3
GE Area: ID

HIST 156. U.S. Cultural History, 1877-Present
An examination of American culture from the late nineteenth century to the present, focusing on various cultural products and practices, both high and low. Formerly HIST 179T.
Units: 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>HIST 157</td>
<td>Modern Africa</td>
<td>The history of Africa since 1800. Topics given special attention include the slave trade and its abolition, European exploration, the imposition of European colonial rule, African nationalism, the struggle for independence and Africa's rise to prominence in world affairs.</td>
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<tr>
<td>HIST 158</td>
<td>The American Civil War</td>
<td>The causes of the Civil War (1861-1865) and its revolutionary consequences for American individuals and institutions. Attention devoted to military as well as political, economic, social, and cultural aspects of the war.</td>
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<tr>
<td>HIST 159</td>
<td>The Reconstruction of America, 1865-1900</td>
<td>Exploration of a critical period in which the United States sought to rebuild itself politically, socially, economically, and culturally in the thirty years after the Civil War. Topics will include emancipation, radical Reconstruction, urbanization, and the rise of the West.</td>
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<tr>
<td>HIST 160</td>
<td>The Great American Civilizations: Maya, Aztec, Inca</td>
<td>Historical examination of the rise and fall of the Maya, Aztec, and Inca empires. Social organization, religion, technology, art, and scientific achievements of the pre-Columbian great American civilizations.</td>
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<tr>
<td>HIST 161</td>
<td>Multicultural Brazil</td>
<td>(CLAS 171 same as HIST 161). This course analyzes Brazil's social, economic, and political relations from a historical perspective. It emphasizes topics such as the contradictory legacy of slavery and its consequences, including inequality and multiculturalism. It also examines Brazil's international relations, its roles as a regional power, and its potential as a global power.</td>
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<tr>
<td>HIST 162</td>
<td>South America</td>
<td>The history of South American republics, with an emphasis on such themes as in stability, economic development, political parties, and revolution.</td>
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<td>HIST 164</td>
<td>19th Century Mexico</td>
<td>This course examines the political, social, and economic development of Mexico from its independence from Spain in 1821 through the Mexican Revolution of 1910.</td>
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<td>HIST 165</td>
<td>Modern Mexico</td>
<td>Nineteenth century origins of Mexican nationality. Development of modern Mexican culture from the Mexican Revolution to the present as compared to that of the Mexican American. Literature and art as an expression of the new Mexican culture.</td>
<td>3</td>
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<tr>
<td>HIST 166</td>
<td>United States -- Latin American Diplomacy</td>
<td>History of the relations between the United States and Latin America, ranging from the Monroe Doctrine through the Good Neighbor Policy, Alliance for Progress, and the Caribbean Basin Initiative.</td>
<td>3</td>
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<td>HIST 167</td>
<td>Social Revolution in Latin America</td>
<td>Highlights Mexico, Cuba, and Central America in exploring the origins, social constituencies, and consequences of the major 20th century Latin American revolutions. Examines the impact of counterrevolutionary movements, foreign intervention, and the successes and failures of each revolution.</td>
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<tr>
<td>HIST 168</td>
<td>Latin American History in Film</td>
<td>Analyzes the manner in which major and controversial themes (race, class, gender, revolution, the military and underdevelopment) in Latin American history are portrayed in feature length films. Emphasis is given to the historical content and accuracy of the films.</td>
<td>3</td>
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<tr>
<td>HIST 169T</td>
<td>Studies in Latin American History</td>
<td>Intensive study of special topics.</td>
<td>1-3</td>
</tr>
<tr>
<td>HIST 170</td>
<td>The American Colonies, 1607-1763</td>
<td>Social, cultural, and political developments in the British North American colonies from the first contact between indigenous and European cultures to the eve of the American Revolution.</td>
<td>3</td>
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<tr>
<td>HIST 171</td>
<td>The American Revolution, 1763-1815</td>
<td>The course examines the causes, nature, and results of the American Revolution, which secured the independence of the United States and created the first republican government in the western hemisphere.</td>
<td>3</td>
</tr>
</tbody>
</table>
HIST 172. Jacksonian America, 1815-1848
Explores the social, political, economic, and cultural developments that transformed the United States in the early nineteenth century. Topics will include the rise of mass democracy, the Second Party System, the Market Revolution, and the geographic expansion of the republic.
Units: 3
Course Typically Offered: Fall

HIST 174. United States History, 1914-1945
The United States in world affairs; political, economic, social, and cultural developments and problems from 1914 to 1945.
Units: 3

HIST 175. United States History, 1945-Present
The United States in world affairs; political, economic, social, and cultural developments, and problems from 1945 to present.
Units: 3

HIST 176. The Atlantic World, 1500 - 1800
Economic, social, political, and religious histories - Europe, Africa, North and South America between the 15th and 19th centuries.
Units: 3

HIST 177. American History in Film
Analysis of significant films and documentaries on controversial aspects of American history. Emphasis given to placing film content in an historiographical framework. Offered especially, but not exclusively, for prospective teachers.
Units: 3

HIST 178. History of African Americans
(HIST 178 same as AFRS 178.)
Units: 3
Course Typically Offered: Spring

HIST 179T. Studies in United States History
Intensive study of special topics.
Units: 1-3

HIST 179T. Introduction to Oral History Method and Practice
This course provides an introduction to oral history methodology. We will learn about the development of oral history within the historical profession, read and discuss theoretical issues related to the practice of oral history, learn to record and preserve oral histories, and use oral history to provide new knowledge about part of new public history Fresno initiative. (Offered Spring 2020)
Units: 3

HIST 179T. The Rise and Fall of American Slavery
This course will explore the origins and evolution of the institution of slavery in North America. Constitutional debates over slavery, the era of the antislavery movement, the secession crisis, emancipation, and the legacy and memory of slavery in the United States. (Offered Spring 2020)
Units: 3

HIST 180. History and Autobiography
An examination of the uses of first-person narratives in understanding American history. Attention to a diverse collection of writers as well as the social context and narrative conventions that shaped their autobiographies. Formerly HIST 179T
Units: 3

HIST 181. Anti-Semitism from the Medieval to Modern World
(HIST 181 same as JS 181.) Examination and critical analysis of anti-Semitic thought and ideology from the medieval world to the present day. Studies the origins and effects of anti-Semitic views and writings in a wider context.
Units: 3

HIST 182. Westward Movement Since 1848
Patterns of exploitation; role of the federal government in the West: land policy, Indian policy; problems of communication; economic growth.
Units: 3

HIST 183. The Hispanic Southwest
Exploration, conquest, and settlement of the Spanish Borderlands from 1513 to the Mexican War; contributions of Hispanic culture to the Southwest.
Units: 3

HIST 186. American Immigration and Ethnic History
Units: 3

HIST 187. California History
Explores California history from before the Spanish conquest to the present. Themes include the cultural, social, political, and economic practices of the various immigrant and indigenous groups that have occupied the state. (Formerly Hist 188 and 189)
Units: 3
HIST 188. Regional and Local History
Regional and local history an oral history component. Students will conduct interviews focusing on the daily lives and contributions of individuals within diverse communities.
Units: 3

HIST 190. Independent Study
See Academic Placement --Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

HIST 191. When Asia was the World and the World Changed Asia
History of the ideas, inventions, religions, people, material goods, and diseases that connected Asia and the world from the Mongolian world empire to the discovery of the Americas to the dawn of Western led imperialism and industrialization.
Units: 3

HIST 192. Modern Far East, 1949-Present
Not open to students with credit in HIST 191B. History of the Far East from the success of the Chinese Communist Revolution in 1949 to the present. Particular emphasis on China, Japan, Korea, and Vietnam.
Units: 3

HIST 193I. Internship in History
Supervised work experience in a history related field, the internship relates the student's classroom studies to occupational and professional experiences.
Units: 1-3
Course Typically Offered: Fall, Spring

HIST 194. The United States and Vietnam
Explores political, social, cultural, military, and economic history of U.S. involvement in Southeast Asia, with particular emphasis on Vietnam.
Units: 3

HIST 195. Guns, Pirates, and Opium: Empire in Asia
Due to current economic empowerment of Asian economies, interest in connections between Asia and the world has surged. The driving question of this course is: Why did the paths of the West and the Rest diverge between 1400 and 1800?
Units: 3
Course Typically Offered: Fall, Spring

HIST 199T. Studies in Far Eastern History
Intensive study in special topics.
Units: 1-3

HIST 200A. Introduction to Graduate Writing and Historiography
Introduction to the methods and skills of graduate writing. Introduction to the varieties of history writings from the ancient world to early-modern times, focusing especially on major themes, approaches, and categories of history writing and authors. (Formerly HIST 200)
Units: 3

HIST 200B. Introduction to Graduate Research and Historiography
Introduction to the methods and skills of graduate research. Introduction to the varieties of modern history writing, focusing especially on major theses, approaches, and categories of history writing, and major figures in modern historical debates. (Formerly HIST 200)
Units: 3

HIST 200C. Introduction to Graduate Research
Provides students with a working knowledge of modern historiography and various approaches to history within the discipline. Students will begin to master the skills of professional historical research.
Units: 3

HIST 210T. Topics in United States History
Intensive reading, analysis, and discussion of significant historical problems in United States history.
Units: 3

HIST 210T. White Nationalism in American History
This course will focus on the formation of racial categories in America and how that process informed the meaning of citizenship. We will address important benchmarks from the early national period, the American West, and within immigration history. (Offered Spring 2020)
Units: 3

HIST 210T. Oral History Practice and Methodology
This course provides an introduction to oral history methodology. Students will examine the development of oral history within the historical profession, discuss the theoretical issues related to the practice of oral history, learn to record and preserve oral histories, and use oral histories to produce new historical knowledge about Fresno and/or the Central Valley.
Units: 3

HIST 210T. Topics in European History
Intensive examination of methodological and theoretical issues pertaining to the advanced study of diverse topics in European history.
Units: 3
HIST 220T. Slavery and the British Empire
This course will examine how historians have thought about Britain’s role in the origins and growth of slavery in the Atlantic between the 1600s and 1800s. (Offered Spring 2020)
Units: 3

HIST 230T. Topics in World History
Intensive reading, analysis and discussion of selected problems in World history
Units: 3

HIST 230T. Creating the Global South
This course provides an introduction to the history and historiography of the Global South (with a focus on the Middle East and South Asia) from the 19th Century to the present. Students will engage with foundational texts in colonial and post-colonial studies, with foundational texts in colonial and post-colonial studies, and discuss recent literature on colonialism, nationalism, globalization and development. (Offered Spring 2020)
Units: 3

HIST 230T. From Cold War to Cold War
Intensive reading in U.S. foreign policy and the origins of the conflict known as the cold war as it played out around the world. (Offered Spring 2020)
Units: 3

HIST 290. Independent Study
See Academic Placement --Independent Study. Approved for RP grading.
Units: 1-3

HIST 292. Directed Readings
Prerequisite: permission of instructor. Readings on selected themes and topics in consultation with a faculty adviser.
Units: 1-3

HIST 296. Topics in History for Teachers
Course integrates historical theory and "best practices" with practical historical knowledge and curricular development. Introduces teachers to historical resources and discusses history pedagogy to integrate current historical scholarship into intermediate and secondary history curricula.
Units: 1-3

HIST 297. History Practicum
Supervised work experience in a history-related field. Provides occupational and professional work experience in one of the following ways: conduct and present original research; engage in archival or museum-related work; or prepare and present original lectures in a classroom setting.
Units: 1-3

HIST 298. Project
Preparation, completion and submission of an acceptable project for the MA teaching option.
Units: 3

HIST 298C. Project Continuation
Pre-requisite: Project HIST 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

HIST 299A. Thesis
Prerequisite: See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. (A) Thesis design. (B) Thesis writing. A and B may be taken concurrently. Approved for RP grading.
Units: 3

HIST 299B. Thesis
Prerequisite: See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. (A) Thesis design. (B) Thesis writing. A and B may be taken concurrently. Approved for RP grading.
Units: 3

HIST 299C. Thesis Continuation
Pre-requisite: Thesis HIST 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

JS 10. Jewish Civilization
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. An overview of Jewish civilization from ancient to modern times that focuses on specific themes, events, and ideas that have shaped global developments in Jewish history, culture, and society within both Jewish community and minority status contexts. G.E. Breadth: D3
Units: 3

JS 100W. Writing and the Jewish Experience
Prerequisite: English Composition (ENGL 5A/B or 10) with a "C" grade or higher. Survey of the Jewish experience. Emphasis on research methods, evaluation of evidence, and writing mechanics and exposition. Meets the upper-division writing skills requirement for graduation.
Units: 3
Course Typically Offered: Fall, Spring

JS 118T. Topics in Jewish History and Culture
Studies in Jewish History and Culture. Intensive study of special topics.
Units: 1-3
Course Typically Offered: Fall

JS 154. Jewish American Popular Culture
(HIST 154 same as JS 154) Prerequisite: GE Breadth Area D. Study of Jewish immigrants and subsequent Jewish American contributions to entertainment and other forms of popular culture from New York to Hollywood, particularly in film, music, and comedy. G.E. Integration ID.
Units: 3
GE Area: ID

JS 181. Anti-Semitism from the Medieval to Modern World
(HIST 181 same as JS 181.) Examination and critical analysis of anti-Semitic thought and ideology from the medieval world to the present day. Studies the origins and effects of anti-Semitic views and writings in a wider context.
Units: 3

CHILD AND FAMILY SCIENCE

CFS 31. Introduction to Family Science
Overview of the scientific study of family relationships. Topics include historical analysis, family theory and research methods, demographic trends, mate selection, sexuality, marriage, divorce, parenting, family violence, developmental aspects of family, and the impact of culture, class, and gender. GE Breadth D3.
Units: 3
Course Typically Offered: Spring
GE Area: D3

CFS 32. Intimate Relationships
The course provides a comprehensive exploration of intimate interpersonal relationships. Topics include theories of interpersonal relationships, relationship types, contextual influences on relationships, how relationships form and dissolve, relationship maintenance, and threats to intimate relationships.
Units: 3
Course Typically Offered: Fall

CFS 37. Introductory Child Development Practicum
Prerequisite or Co-requisite: CFS 140 and UDWR. Open only to Child and Family Science majors with senior standing. Prepares students to use observation tools for studying the development of toddlers and preschool children, as well as developmentally appropriate and culturally responsive methods of assessment. Supervised field experience required for a Child Development Permit. (3 lecture, 3 lab hours)
Units: 4
Course Typically Offered: Fall

CFS 38. Life Span Development
A balanced study of basic theories, research, applications, and principles of physical, cognitive, and psychosocial development from conception to death, presented in an integrated manner in the context of the family in a diverse society. Includes behavior, sexuality, nutrition, health, stress environmental relationships, and implications of death and dying. G. E. Breadth E1.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: E1

CFS 39. Introductory Child Development
Study of the physical, social, emotional, and cognitive development from conception through adolescence. Examines development in contexts of family, culture, and socio-historical perspective. Introduces child study methodologies. GE Breadth E1.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: E1

CFS 90T. Topics in Child Dev and/or Family Science
Topics related to child development and/or family relations
Units: 1-3

CFS 100. Child and Family Science
Prerequisites: CFS 31, CFS 39 and CFS 153. Open only to the following majors: Pre-Child; Child Development; and Family and Consumer Sciences-Family Sciences emphasis. Introduction to the CFS discipline, options within the major, and professional career paths. Topics include: major requirements, career paths in child development and family science, writing conventions, and making the most of an undergraduate education.
Units: 3
Course Typically Offered: Fall, Spring

CFS 130W. Professional Writing
Open only to Child and Family Science majors. Professional writing in Child and Family Science, including correspondence, memos, and literature reviews. Emphasis on APA style. Meets the upper-division writing skills requirement for graduation.
Units: 3
Course Typically Offered: Fall, Spring

CFS 131. Family Theories
Prerequisite: Open only to majors and minors in Child and Family Science. An introduction to family theories and their impact on issues such as gender, roles in family functioning,
communication, power dynamics. Theories include Structural Functionalism, Family Systems Theory, Stress and Crisis Theory, Feminist Family Theory, and Family Development Theory.

Units: 3
Course Typically Offered: Fall, Spring

CFS 132T. Topics in Child Development and Family Relationships
Prerequisites: CFS 39 and/or CFS 131. Topics relating to child development and family relationships. Some topics may have labs.

Units: 1-4

CFS 132T. Research Lab
Advanced experience in scholarship for selected majors that includes involvement in research being conducted by faculty. (Offered Spring 2020)

Units: 1-4

CFS 134. Culture and Diversity
Prerequisites: CFS 31 and (CFS 39 or PSYCH 101) and (CFS 153 or PSYCH 153). Open only to: Pre-CFS, majors and minors in Child and Family Science, and Liberal Studies majors. Survey of the history and circumstances of children and families in various groups based on race, ethnicity, culture, gender, sexual orientation, and religion; research on how children develop identity and attitudes about diversity; and cultural competence.

Units: 3
Course Typically Offered: Fall, Spring

CFS 135. Parent Education
Prerequisite: Open only to majors and minors in Child and Family Science, and Liberal Studies. Study of the status of parenting and parenthood in contemporary society, the content of parent education programs (attachment, communication, consequences, applied behavior analysis), and strategies for adult education.

Units: 3
Course Typically Offered: Fall, Spring

CFS 136. Adolescence
Prerequisite: CFS 39 or PSYCH 101. Open only to majors and minors in Child and Family Science, and Liberal Studies. Study of the physical, social, emotional, and cognitive development of adolescents and emerging adults. Examines development of self in the contexts of family, peer group, educational environments, work, community, and culture.

Units: 3

Course Typically Offered: Fall

CFS 137. Infancy
Prerequisite: CFS 39 or PSYCH 101. Open only to majors and minors in Child and Family Science, and Liberal Studies. Study of the physical, social, emotional, and cognitive development of infants. Includes in-depth study of brain development, attachment formation, and language, as well as early child care settings and policy issues related to infancy.

Units: 3
Course Typically Offered: Fall, Spring

CFS 138. Early Childhood
Prerequisite: CFS 39 or PSYCH 101. Open only to majors and minors in Child and Family Science, and Liberal Studies. Study of physical, social, emotional, and cognitive development during early childhood. Topics include motor skills, health, family and peer relationships, as well as child care and policy issues.

Units: 3
Course Typically Offered: Fall, Spring

CFS 139. Advanced Child Development Practicum
Prerequisites: CFS 37, CFS 140, and UDWR. Open only to Child and Family Science majors. Capstone class for graduating seniors. Study of curriculum and best practices in early child care settings. Students conduct observations; assess, implement, and evaluate developmentally appropriate learning experiences; apply theory to practice; and demonstrate a professional work ethic. (3 lecture, 3 lab hours)

Units: 4
Course Typically Offered: Spring

CFS 140. Child Development Theories
Prerequisite: Open only to Child and Family Science majors. In-depth study of major child development theories. Theories include: psychoanalytic, sociocultural, attachment, cognitive, social learning, and information processing.

Units: 3
Course Typically Offered: Fall, Spring

CFS 143S. Risk and Resilience
Prerequisites: CFS 31, (CFS 39 or PSYCH 101), (CFS 153 or PSYCH 153). Open only to Child and Family Science majors and minors, Pre-CFS majors, and Liberal Studies majors. Societal, family, and developmental factors that contribute to risk and resilience in children and families. At-risk categories, characteristics of high- and low-risk children, and causes of risk in early and middle childhood, adolescence, and emerging adulthood.

Units: 3
Course Typically Offered: Fall, Spring

CFS 145A. Observing the Development of Children
Prerequisite or Co-requisite: CFS 140, UDWR. Open only to majors in Child and Family Science, with senior standing. Techniques in observing and recording the development and behaviors of school age children. Interpretation and reporting of observational data. Emphasis on children in school settings from developmental, ecological, and systems perspectives. (3 lecture, 3 lab hours)

Units: 4

Course Typically Offered: Fall

CFS 145B. Advanced Observation of Children
Prerequisite: CFS 145A. Open only to majors in Child and Family Science. Capstone class for graduating seniors. Advanced application of techniques in observing and recording child development and behavior. Observation of children in affective, social, physical, and cognitive domains, and analysis of elementary and middle school contexts of development. Interpretation and reporting of observational data. (3 hours lecture, 3 hours lab)

Units: 4

Course Typically Offered: Spring

CFS 146. Middle Childhood
Prerequisites: CFS 39 or PSYCH 101. Open only to majors and minors in Child and Family Science, and Liberal Studies. Study of the physical, social, emotional, and cognitive development of school age children. Examines development in the context of the family, peer group, educational environments, community, and culture.

Units: 3

Course Typically Offered: Fall, Spring

CFS 150. Family Law and Policy
Prerequisite: CFS 31. Open only to majors and minors in Child and Family Science, and Liberal Studies. Review of laws and policies related to marriage, divorce, child custody, parental rights, surrogacy, child support, adoption, family violence, foster care, public assistance, social security, health care, LGBT rights, immigration, child care licensing, and family medical leave.

Units: 3

Course Typically Offered: Fall, Spring

CFS 153. Research Methods
Prerequisites: CFS 31 or CFS 39 or PSYCH 101. Scientific approach to the study of children and families. Topics include sampling, measurement, study design, and statistics. Emphasizes understanding the process of scientific discovery, clearly distinguishing it from non-science and pseudoscience, and learning to accurately interpret and evaluate research.

Units: 3

Course Typically Offered: Fall, Spring

CFS 179. Family Life Education
Prerequisite: CFS 31. Open only to majors and minors in Child and Family Science, and Liberal Studies, senior standing. Preparation for students to enter careers in family life education. Topics include: content areas of family life education, teaching methods, program evaluation, professional ethics, professional communication, and building relationships as a family life educator.

Units: 3

Course Typically Offered: Fall

CFS 190. Independent Study
See Academic Placement --Independent Study. Approved for RP grading.

Units: 1-3

Course Typically Offered: Fall, Spring

CFS 193I. Internship
Prerequisites: Completion of at least 60 units; good academic standing; permission of the department. Combines study with paid or unpaid work experience in a supervised career-related placement.

Units: 3

Course Typically Offered: Spring

CI 161. Mth Mtl H Ec
Units: 3, Repeatable up to 999 units

CSH 116. Consumer Aspects of Home Ownership
Emphasis on benefits and obligations of home ownership. Analysis of the consumer processes of selecting, buying, and maintaining a home.

Units: 3

EHD 154B. Final Student Teaching Seminar - H Ec
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.

Units: 1

EHD 155B. Studt Tchg H Ec
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
FCS 192. Readings and Conference
Prerequisite: permission of instructor. Individually directed readings; reports and evaluation. (Hours arranged) Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

FCS 203. Trends and Issues in Family and Consumer Sciences
A study of the history and current status of family and consumer sciences. An examination of trends and issues pertaining to child and family sciences, clothing and textiles/fashion merchandising, consumer science and housing, food and nutrition, and interior design. (Formerly HEC 241)
Units: 3

FCS 205. Survey of Family and Consumer Sciences Research
Prerequisite: FCS 203. Examination of current research in each area of family and consumer sciences. Abstract writing, formulation of annotated bibliographies and research presentations. (Fulfills university's graduate writing proficiency requirements) (Formerly HEC 201)
Units: 3

FCS 210T. Seminar in Consumer Science and Family Management
Prerequisite: permission of instructor. Analytical study of problems pertaining to identifiable segments of the populace; intercultural, socioeconomic, age level and ethnic and community groups. Topics may include aspects of aging, cultural aspects of management, home and community relationships and ergonomics -- aspects of work simplification.
Units: 3, Repeatable up to 12 units

FCS 220T. Seminar in Clothing, Text
Prerequisite: permission of instructor. Research and analysis of historical material and contemporary developments in clothing textiles, and fashion merchandising. Topics may include aspects of historical costume and textiles, technological developments in textiles, and trends in purveying fashion. Some topics may have labs.
Units: 3, Repeatable up to 6 units

FCS 230T. Seminar in Child Development, Family Relations
Prerequisite: permission of instructor. Research, methodology, and issues in family relationships and child development. Topics may include parenting, families in transition, relationship patterns, infancy, early childhood, and family diversity.
Units: 3, Repeatable up to 12 units

FCS 240T. Seminar in Family and Consumer Sciences Education
Prerequisite: permission of instructor. Applied research; current and future trends of the multilevel areas of family and consumer sciences education. Topics may include curriculum development, administration, evaluation, and supervision and incorporation of business and industry.
Units: 3, Repeatable up to 6 units

FCS 242. Community College Teaching in Family and Consumer Sciences
Strategies for implementing family and consumer sciences curriculum in community colleges. Study of instruction techniques, procedures, resources, problems and responsibilities in the community college setting.
Units: 3

FCS 290. Independent Study
See Academic Placement --Independent Study. Approved for RP grading.
Units: 1-3

FCS 292. Readings in Family and Consumer Sciences
Prerequisite: permission of instructor. Individually directed readings in a field of special concern to students in the graduate program; appropriate reports and evaluations required; individual conferences, no formal class meetings. Approved for RP grad
Units: 2-3

FCS 298. Project
Prerequisite: prior advancement to candidacy. See Criteria for Thesis and Project. The project is a significant undertaking of an approved pursuit appropriate to the applied arts, e.g., extensive curriculum design, development of new consumer products, or similar professional endeavors with written documentation. Abstract required. Approved for RP grading
Units: 2-6

FCS 298C. Project Continuation
Pre-requisite: Project 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

FCS 299. Thesis
Prerequisite: prior advancement to candidacy; see Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.
Units: 2-6
FCS 299C. Thesis Continuation
Pre-requisite: Thesis 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

HUMANITIES

HUM 1T. and HUM 10. Topics in Humanities
Selected topics in the humanities not normally covered by regular course offerings.
Units: 1-4
Course Typically Offered: Fall, Spring

HUM 10. Humanities from Antiquity to the Renaissance
Units: 3
GE Area: C2

HUM 11. Humanities from the Baroque to the Modern
Prerequisite: G.E. Foundation A2. Interrelationships among art, literature, music, and philosophy, from the 17th century Age of Reason to the present. G.E. Breadth C2.
Units: 3
Course Typically Offered: Fall, Spring

HUM 15. Classical Myth and World Humanities
Units: 3
Course Typically Offered: Fall, SpringGE Area: C2

HUM 20. Introduction to Hispanic Literature
Prerequisite: G.E. Foundation A2. Reading of Hispanic fiction, poetry, and drama with the goal of understanding the close relationship between Hispanic literature and culture. Instruction in techniques of literary criticism. Taught in English using English translations of important works of Hispanic literature. G. E. Breadth C2.
Units: 3

HUM 21. Introduction to the Literature of Portuguese-speaking Peoples
Readings of fiction and poetry from Portuguese-speaking (Lusophone) countries with the goal of understanding the close relationship between Lusophone literature and culture. Instruction in techniques of literary criticism. Taught in English using translations of representative works of Lusophone literature.
Units: 3

HUM 101T. Topics in Humanities
Units: 1-4
Course Typically Offered: Fall, Spring

HUM 104. Humanities in the Middle Ages and Renaissance
Prerequisites: G.E. Foundation and Breadth Area C. An examination of art, literature, philosophy, and music and their interrelationships in European culture during the Middle Ages and Renaissance. G.E. Integration IC. (Formerly INTD 104)
Units: 3
Course Typically Offered: Fall, SpringGE Area: C2

HUM 104Z. Hum Mdl Age Ren
Units: 3

HUM 105. Cultures of the Portuguese-Speaking World
Prerequisites: GE Foundation and Breadth Area D. Interdisciplinary approach to global examination of cultural productions of the Portuguese-speaking world through readings, lectures, films, and other media. Taught in English using representative literary works in translation. Multicultural/International M/I.
Units: 3

HUM 108. Humanities in Classical Athens
Prerequisites: G.E. Foundation and Breadth Area C. An examination of the unique cultural environment of the ancient city, its art, architecture, literature, social and political structures, and their interrelationships as manifested in fifth century Athens. G.E. Integration IC. (Formerly INTD 108)
Units: 3
Course Typically Offered: Fall, SpringGE Area: C2

HUM 110. Humanities in Republican and Imperial Rome
Prerequisites: G.E. Foundation and Breadth Area C. An examination of the unique cultural environment of the ancient city, its art, architecture, literature, social and political structures, and their interrelationships as manifested during Republican and Imperial Rome. G.E. Integration IC. (Formerly INTD 110)
Units: 3
HUM 118. Folklore in Contemporary Life
Prerequisites: G.E. Foundation and Breadth Area C. Interdisciplinary study of the role of folklore in modern life, its power to communicate critical issues through expressive culture, e.g., jokes, legends, folksongs, graphic arts, and festival; focus on the intellectual currents influencing the study of folklore. (Formerly INTD 118).
Units: 3
Course Typically Offered: Fall, Spring

HUM 129. Mexican Culture
Prerequisites: G.E. Foundation and Breadth Area C. The student will be introduced to a variety of elements of Mexican culture in relation to notions of identity. This class will help the students develop basic analytical skills in their comprehension of Mexican culture and civilization. G.E. Integration IC.
Units: 3
Course Typically Offered: Fall, Spring

HUM 130. Latin American Cultures and Traditions
A study of Hispanic cultural and aesthetic trends and practices as seen in the popular and formal arts and other styles of Hispanic thought, feeling, and expression. (Formerly INTD 130)
Units: 3

HUM 140. Tradition and Change in China and Japan
(ANTH 125 same as HUM 140.) Examines the current aspirations and problems of the Chinese and Japanese in terms of their traditional cultures, and explains how their histories, values, world views, and intellectual traditions affect their lifestyles and their international relations today. Multicultural/International M/I.
Units: 3

HUM 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

MES 100T. Special Topics in Middle East Studies
Selected topics exploring social, cultural, artistic, historical, political, or other areas of study related to the Middle East.
Units: 3

INDUSTRIAL TECHNOLOGY

CI 161. Mth Mtl I T
Units: 3, Repeatable up to 999 units

EHD 154B. Final Student Teaching Seminar - Industrial Technology
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 1

EHD 155B. Studt Tchg I T
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

IT 12. Basic Vehicle Systems
Design, construction, and mechanical functions of vehicle engines, fuel systems, electrical systems, power transmission, brakes, and wheel suspension; proper use and safety of tools and equipment. (2 lecture, 2 lab hours)
Units: 3

IT 30. Exploring Industrial Technology Systems
Introductory survey of the Industrial Technology discipline including: technology sub-systems (power/energy, communication/electronics, product development, process control) and the relationship with other disciplines, including business management, engineering, education and health/safety. Includes field trips to business, educational and industrial facilities. (1 lecture; filed trips)
Units: 1
IT 41. Industrial Design Graphics
Application of the fundamentals of industrial design graphics. Sketching, lettering, orthographic projection, working drawings, auxiliary views, dimensioning, developments, pictorial drawings, duplication; interrelationship to the design process. Introduction to CAD. (6 lab hours)
Units: 3
Course Typically Offered: Fall

IT 45. Industrial Technology Exhibits and Competitions
Provides a structure for students to be involved in various industrial technology exhibits and competitions, industrial technology research and development, project management, and team work. CR/NC grading only. (6 lab hours) (Formerly IT 145)
Units: 3
Course Typically Offered: Fall

IT 52. Electricity and Electronics
(IT 52 same as MEAG 53.) Introduction to electricity including fundamentals of electrostatics, alternating and direct current electrical circuits, electrical calculations, magnetics, circuit applications, electrical measuring, and test equipment. Schematics and wiring diagrams, standards, and codes. (2 lecture, 2 lab hours) (Course fee, $5)
Units: 3
Course Typically Offered: Fall, Spring

IT 58. Applied Computer Networking I
Internet, intranet, local area network concepts, protocols, architectures, and implementation issues. Data communication in office technology and manufacturing automation. (2 lecture, 4 lab hours) (Field trips) (Formerly IT 158)
Units: 4
Course Typically Offered: Spring

IT 63. Applied Computer Networking II
Prerequisite: IT 58. Understanding complex networks, such as IP, IPX, Frame Relay and ISDN. An analysis of the technology used to increase bandwidth and quicken network response times. Network security, global intranet, custom queuing, and routed priority services. (2 lecture, 4 lab hours; field trips) (Formerly IT 163)
Units: 4
Course Typically Offered: Fall

IT 71. Metallurgical Processes
(MEAG 50 same as IT 71.) Fundamentals of metallurgy; properties and characteristics of metals; survey of metal welding processes, equipment, and procedures; theory-discussion and laboratory experience in oxygen-fuel welding, cutting, brazing, and shielded metallic arc welding. (2 lecture, 3 lab hours) (Course fee, $50)
Units: 3
Course Typically Offered: Fall, Spring

IT 74. Manufacturing Processes
Study of how consumer and industrial products are manufactured, focusing on how raw materials (primarily metal and plastic) are changed into finished products. Topics include production processes of material addition, forming, casting, removal, separation, assembly, and finishing. (2 lecture, 2 lab hours) (Course fee, $20)
Units: 3
Course Typically Offered: Fall, Spring

IT 80. Wood Technology
Wood properties, materials, finishing; hand, portable electric, and machine tool processing; design, production planning; safety, adhesives, and cutting principles; machine design and use. (2 lecture, 2 lab hours) (Course fee, $10)
Units: 3

IT 92. Safety Management
Principles of safety management in an industrial and agricultural environment; safety legislation and programs; management/supervisory and employee responsibilities and attitudes; physical hazards associated with chemicals, equipment, fire, compressed gases; other topics include eye, stress, drugs, lifting office, and noise safety.
Units: 3
Course Typically Offered: Fall, Spring

IT 102. Industrial Computer Concepts and Applications
Introduction to computer systems hardware and software, operating system basics and installation, computer maintenance and troubleshooting (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Spring

IT 103. Network Operating Systems
Prerequisite: IT 102. Introduction to multiuser, multitasking network operating systems. Characteristics of the Linux, Windows 2000, NT, and XP network operating systems. Installation procedures, security issues, back up procedures and remote access. (2 lecture, 2 lab hours)
Units: 3

IT 104. Product Design
Prerequisite: IT 114 and IT 115. Elements, principles, and methods of design. Emphasis will be placed on the development of models and prototypes with attention to standard components, productivity, and packaging. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Spring

IT 105. Fundamentals of Citrus Processing Lines
Study of fundamentals and operation of modern citrus processing line. Topics include but are not limited to fruit unloading, transfer system, washing, grading and sorting. Equipment selection, programmable logic controllers and other technologies employed in a state of the art citrus processing line will also be studied. (2 lecture, 2 lab hours) (Formerly IT 191T)

Units: 3
Course Typically Offered: Fall, Spring

IT 106. Energy Conversion and Utilization
Fundamental sources of energy, including the following energy conversion systems: direct mechanical, external combustion, internal combustion, solar power, wind power, electrical and atomic systems. Experiments and demonstrations. (2 lecture, 2 lab hours; field trips)

Units: 3
Course Typically Offered: Fall, Spring

IT 107. Facilities Planning and Materials Handling
Facility planning techniques as applied to facility location, zoning, building codes, line balancing, shipping-receiving, offices, material handling, storage, project scheduling, and computerized layout.

Units: 3
Course Typically Offered: Fall, Spring

IT 109. Irrigation Water Delivery Systems
Exploration of irrigation and water delivery systems including sprinkler, drip tape (tubing), pumps, variable frequency drives (VFD), filters, control valves, automatic controllers, pipes and fittings, irrigation system efficiency, uniformity and system maintenance. (2 lecture, 2 lab hours) (Formerly IT 191T)

Units: 3
Course Typically Offered: Fall, Spring

IT 110. Fluid Power
Selective study of fluid power principles and applications; hydraulics, pneumatics, and vacuum; includes pumps, controls, transmission systems, actuators, and fluidics. In-depth study of air conditioning-heating theory and applications. (6 lab hours; field trips) (Course fee, $5)

Units: 3

IT 112. Industrial Process Control Systems I
Prerequisite: IT 52. Process control principles; components and principles; transducers, actuators, sensors, and instrumentation; computer interface software, terminologies, standards, and trends in control technologies. Programmable logic controller principles, hardware, and software. (2 lecture, 2 lab hours)

Units: 3

IT 114. Industrial Materials
Prerequisites: CHEM 3A or instructor permission. Chemical and physical properties of metals, polymers, ceramics, composites. Atomic structure and phases of matter emphasizing crystalline and amorphous solids. Mechanical properties, strength and testing of materials including impact, hardness, and tensile. Metallographic, microscopic inspection of electronic, and metallic specimen. (2 lecture, 2 lab hours) (Course fee: $10)

Units: 3

IT 115. Design and Documentation Systems
IT 41 recommended prior to enrollment. Design and documentation systems used in business and industry CAD principles and applications product development process, design process management, design review, concurrent engineering value analysis. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

IT 116. Applied Visual Programming
Contemporary computer language used for programming automated systems and controls applied to manufacturing and precision agriculture; basic concepts on structural programming, object-oriented language, programming mechanics, user interface development, and web-based applications. (2 lecture, 2 lab hours)

Units: 3

IT 117. Quality Assurance
Prerequisites: DS 73 or Math 11. Quality assurance principles and practices in industry: quality assurance systems, acceptance sampling, testing, source surveillance; probability and statistical concepts, process control techniques and measurement procedures as applied to quality.

Units: 3

IT 118. Production Operations
A survey of production manufacturing operations: quality assurance, work sampling, testing, time and motion study; routing, scheduling, and inventory control; flow processes, material handling, and automation. (Field trips)

Units: 3

IT 120. Vehicle Engine Systems
Prerequisites: IT 12, IT 52 or concurrently. Advanced study of vehicle engines and support systems. Includes engine
theory, fuel and electrical systems, turbochargers, LPG, diesel, computerized emission and engine controls, and dynamometer testing analysis. (6 lab hours; field trips)

Units: 3
Course Typically Offered: Spring

IT 121. Automotive Engine Machining
Prerequisites: IT 12, IT 74. Advanced study of automotive engine machining including precision measurements, principles of engine operation, machining of engine components, crack detection, assembly procedures, lubricating and cooling systems. (6 lab hours; field trips) (Course fee, $6)

Units: 3

IT 124. Hybrid and Alternative Fuel Vehicles
Design, construction, and mechanical functions of hybrid and alternative fuel vehicles including hybrid engine systems and alternative fuels. It focuses on electric motors, regenerative braking systems, hybrid vehicle transmissions, electric and plug-in vehicles, and fuel cells. (Formerly IT 191T)

Units: 3
Course Typically Offered: Spring

IT 127. Vehicle Design and Development
Design and mechanical development of vehicles for intercollegiate competition events. Students will select one or more vehicle research projects: innovative future fuels, supermileage, mini baja, formula, aero design, walking robot. (6 lab hours)

Units: 3-6
Course Typically Offered: Fall

IT 129. Vehicle Diagnostic Procedures
Prerequisites: IT 12, IT 52 or concurrently. Laboratory study and analysis of mechanical, electrical, and computer control problems. Technical reports. (6 lab hours) (Course fee, $5)

Units: 3
Course Typically Offered: Spring

IT 131. Automated Systems I
Prerequisite: IT 52. Number systems, Boolean logic, and fundamentals of digital devices; basic applications of logic devices in computers and control systems. (2 lecture, 2 lab hours; field trips) (Course fee, $5)

Units: 3
Course Typically Offered: Fall

IT 133. Industrial Process Control Systems II
Prerequisites: IT 52. Programmable logic controller principles and equipment; programming languages, procedures, and documentation; equipment and software selection and application. (2 lecture, 2 lab hours)

Units: 3

Course Typically Offered: Spring

IT 134. Computer-Aided Manufacturing Systems I
Prerequisite: IT 74. Study, analysis, and evaluation of robotics systems. APT programming language for numerical control and application languages for robots. Use of robot vision and the geometry of computer vision applications. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Spring

IT 137. International Quality Standards
Prerequisites: IT 74 and IT 117. ISO 9000 and related quality systems, including how such systems are implemented and managed in organizations. Includes basic technology and organizational management concepts.

Units: 3
Course Typically Offered: Spring

IT 146. Multimedia Development
Integration of a variety of media types: graphics, animation, digital video, and sound. Emphasis placed on development and creation of multimedia as applied to various CAD/CAM projects, the process of bringing live interactivity to the Internet, Web page development, and desktop publishing. (Formerly IT 191T)

Units: 3
Course Typically Offered: Fall, Spring

IT 147. Advanced CAD Applications
48. Project Planning and Control (3) Prerequisites: IT 115. CAD as a tool to facilitate design activities. An overview of design processes and methods. Solid modeling techniques are introduced. A team approach in system design is emphasized. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Spring

IT 148. Project Management and Control
Project management process and tools, planning, scheduling, organizing, and controlling projects. Project planning and control using qualitative and quantitative methods. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

IT 156. Automated Systems II
Prerequisite: IT 52. Study and analysis of the characteristics and industrial applications of electric/hydraulic/pneumatic motor control. Special emphasis on programmable, solid state, and electromechanical motor controllers for applications in manufacturing and agriculture. (1 lecture, 4 lab hours; field trips) (Course fee, $4)

Units: 3
IT 164. Router and Internetworking I
Prerequisite: IT 63. Implementation of appropriate technologies to build a scalable routed network. Build campus networks using multilayer switching technologies, improve traffic flow, reliability, redundancy, and performance for campus LANs, routed and switched WANs, and remote access networks. (2 lecture, 4 lab hours)
Units: 4

IT 165. Router and Internetworking II
Prerequisite: IT 164. Create and deploy a global internet. Troubleshoot an environment that uses routers and switches for multiprotocol client hosts and services. Addresses those tasks that network managers and administrators need to perform in managing access and controlling overhead traffic over LANs, and WANs. Connecting corporate networks to an Internet Service Provider (ISP) (2 lecture, 4 lab hours)
Units: 4

IT 184. Advanced Manufacturing Technology
Prerequisite: IT 74, IT 117. Analysis of production operations including product design, work cells, tooling capacity planning, material handling, scheduling and flow chart using lean principles. Exploration of manufacturing paradigms. (2 lecture, 2 lab hours; field trips) (Course fee, $10)
Units: 3
Course Typically Offered: Spring

IT 186. Applied Spatial Technology
Survey of geo-spatial technologies, e.g. geographical-information-system and global positioning system. Applications of GIS/GPS, remote sensing, imaging technology and geo-database in fields of logistics, agriculture and business. Spatial information management for precision agriculture, agriculture business, food system and public policy.
Units: 3

IT 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

IT 191T. Technical Topics in Industrial Technology
Prerequisite: permission of instructor. Investigation and analysis of selected subjects in industrial technology. (2-6 lab hours)
Units: 1-3

IT 191T. Intelligent Big Data Technology
Studies big data technologies in an intelligent way to help enterprise decision making. Students will learn iPython programming including NumPy, data processing, data visualization, and machine learning. Emphasize will be on the application of artificial intelligence to derive valuable business insights from big data, especially those related to agriculture. (Offered Spring 2020)
Units: 3

IT 191T. Industrial Casting Processes
Students will explore how casting is done in industrial settings, making plastic and aluminum (green sand) one and two part castings. Topics will include advantages and disadvantages of casting (part fabrication selection) research industries that use casting, pattern design (draft and shrinkage) mold design (sprue and runner arrangement) post mold processing (grinding and polishing). (Offered Spring 2020)
Units: 2

IT 191T. Fundamentals of Nut Processing Line
Study of fundamentals and operation of modern nut processing lines. Topics include but are not limited to nut processing systems, harvest of nuts, principles of nut processing lines, drying, separating and sizing of nuts. Equipment section, programmable logic controllers and other technologies in a state of the art nut processing line will also be introduced to students. (2 lecture/2 lab hours) (Offered Spring 2020)
Units: 3

IT 194I. Cooperative Education in Industrial Technology
Prerequisites: courses appropriate to the work experience; permission of department cooperative education coordinator; junior standing. Integration of work experience with academic program, individually planned through program adviser. CR/NC grading only.
Units: 1-4
Course Typically Offered: Spring

IT 196. Senior Seminar
Exploration of technology systems management trends and preparation for employment or further study in technical fields. Technology forecasting, orientation to professional certifications, employment correspondence, interview techniques and leadership skills.
Units: 1
Course Typically Offered: Fall, Spring

IT 198W. Technical Writing
Prerequisites: satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement; to be taken no sooner than the term in which 60 units are completed. Preparation of technical reports, research proposals, specifications, resumes, and correspondence using effective writing techniques, formats, and styles. Meets upper-division writing skills requirement for graduation.
Units: 3
Course Typically Offered: Fall, Spring

IT 199. Senior Problem in Industrial Technology
Prerequisite: successful completion of Upper-Division Writing Exam or IT 198W. Approved problem or research project, with seminar, in the area of the student's option and emphasis. Approved for RP grading.

Units: 3
Course Typically Offered: Fall, Spring

IT 216. Production Data Analytics
Data analysis techniques for predictive and forecasting analytics in production operations. Data visualization and reporting for business intelligence and management decision support systems. Supply chain optimization and process analysis through data analysis. Big data characteristics. (2 lecture, 2 lab hours)

Units: 3

IT 217. Quality Management Techniques
Total quality management principles, techniques, and skills including auditing, design of experiments, quality costs, sampling, and reliability. Quality control charts such as Pareto charts and Run charts. (Formerly IT 284T)

Units: 3

IT 218. Scheduling in Manufacturing and Services
Scheduling applications in manufacturing such as job shop scheduling, flexible assembly systems economic lot scheduling and supply chain scheduling. Service scheduling applications such as workforce, transportation, reservations and timetabling. (Formerly IT 284T)

Units: 3

IT 219. Applied Sensor Technology
This course covers sensor technology and their applications in business, environmental, and agricultural industry. Students will primarily learn about sensors and controls, functions, and concepts such as sensor data models, control and data acquisition systems for Internet of Things (IoT) technology and smart automation.

Units: 3

IT 223. Management of New Technology
Study of the developmental history of technology and its impact on people and their institutions. Topics focus on the consequences of rapid technological changes as they relate to adoption, implementation, management strategies, and social issues.

Units: 3

IT 280. Research Methodology
Prerequisites: MATH 11 or DS 73. Seminar in research procedures in industrial education and technology; basic bibliography, research form and methods.

Units: 3

IT 282. Advanced Communication Concepts and Visual Presentations
Preparation and use of agendas, memoranda, business letters, electronic mail, fax communications. Video development and slide and transparency preparation and the incorporation of these media into presentations. Interview technique, resume evaluations, dictation skills, professional relations with personnel, business etiquette.

Units: 3

IT 283. Advanced Materials and Processes
Prerequisite: IT 114. Chemical and physical properties of metals, polymers, ceramics and composites. The atomic structure and phases of matter emphasizing crystalline and amorphous solids. Materials technology of metallic, polymeric, ceramic, and advanced composites are stressed.

Units: 3

IT 284T. Topics in Industrial Technology
Advanced study in technical areas; current industrial practices, developments and trends related to design, materials, and processes.

Units: 2-3

IT 284T. Intelligent Big Data Technology
Studies big data technologies in an intelligent way to help enterprise decision making. Students will learn iPython programming including NumPy, data processing, data visualization, and machine learning. Emphasize will be on the application of artificial intelligence to derive valuable business insights from big data, especially those related to agriculture. (Offered Spring 2020)

Units: 3

IT 285. Advanced Manufacturing Systems
Prerequisites: IT 115. A comprehensive study of modern manufacturing systems. Topics include plant layout, material control and transfer, operations measurement, transfer lines, CNC and DNC, machine tool network, computer-integrated manufacturing, flexible manufacturing systems, group technology, robotics, and manual assembly systems.

Units: 3

IT 286. Applied Spatial Technology
Survey of geo-spatial technologies, e.g. geographical-information-system and global positioning system. Applications of GIS/GPS, remote sensing, imaging technology
and geo-database in fields of logistics, agriculture and business. Spatial information management for precision agriculture, agriculture business, food system and public policy.

Units: 3

IT 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3

IT 298. Project
Prerequisites: IT 280; prior advancement to candidacy. Completion of an approved project appropriate to the candidate's area of specialization involving the development of a physical prototype or other similar professional problem-solving activity with extensive written documentation. Abstract required. Approved for RP grading

Units: 2-4

IT 298C. Project Continuation
Pre-requisite: IT 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

IT 299. Thesis
Prerequisites: IT 280; advancement to candidacy. Preparation, completion, and submission of an acceptable thesis for the master's degree. Must take 3 units in each of two semesters. Approved for RP grading.

Units: 3, Repeatable up to 6 units

IT 299C. Thesis Cont
Pre-requisite: IT 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

INFO SYS & DECISION SCIENCES

DS 70. Quantitative Analysis Support
Prerequisite: Mathematics placement category III or IV. This is a one-unit, credit/no-credit course, employing a stretch model, specifically focused on preparing CSU Math-Ready Category III and IV students for DS 71. (DS 71 being a GE course in Quantitative Reasoning that meets the campus Area B4 graduation requirement.) (Formerly DS 189T)

Units: 1

DS 71. Quantitative Analysis
Prerequisite: Mathematics placement category I or II. Students in Mathematics placement category III and IV must pass DS 70 with a CR or Math 3 with a C or better. Quantitative formulation and solution of problems in various disciplines, including mathematics of finance, linear programming, probability, and differential calculus. G.E. Foundation B4.

Units: 3

Course Typically Offered: Fall, Spring

DS 71L, Quantitative Analysis Lab
Prerequisite: concurrent enrollment in DS 71. DS 71L is not required for DS 71. Extends instruction in DS 71, providing three hours of additional support per week. One-on-one tutoring. Small group and technology-enhanced instruction relating to DS 71 curriculum. CR/NC grading only. (Does not apply to major.)

Units: 1

Course Typically Offered: Fall, Spring

GE Area: B4

DS 73. Statistical Analysis I
Prerequisites: DS 71 or equivalent; ECON 40, ECON 50 recommended. Introduction to descriptive statistical tools as applied to management decision making. Central tendency and dispersion measures; index numbers (CPI deflators); time series analysis (trends, seasonal variations); probability theory; probability and sampling distributions (normal, exponential, binomial, Poisson); central limit theorem.

Units: 3

Course Typically Offered: Fall, Spring

DS 73L. Statistical Analysis I Lab
Prerequisite: Concurrent enrollment in DS 73. DS 73L is not required for DS 73. Extends instruction in DS 73, providing three hours of additional support per week. One-on-one tutoring. Small group and technology-enhanced instruction relating to DS 73 curriculum. (Does not apply to major.) CR/NC grading only.

Units: 1

Course Typically Offered: Fall, Spring

DS 123. Statistical Analysis II
Prerequisites: DS 71, DS 73, IS 52, IS 52L. Statistical inference as applied to managerial problems and decision making. Emphasizes the inferential process; interval estimation, hypothesis testing, one- and two-way analysis of variance, regression, and correlation a

Units: 3

DS 123L. Statistical Analysis II Lab
Prerequisite: Concurrent enrollment in DS 123. DS 123L is not required for DS 123. Extends instruction in DS 123, providing
three hours of additional instructional support per week. One-on-one tutoring, small group and technology enhanced instruction relating to DS 123 curriculum. CR/NC grading only. (Does not apply to major).

Units: 1
Course Typically Offered: Fall, Spring

DS 133. Business Intelligence with Advanced Spreadsheet
Prerequisite: DS 71, DS 73, IS 52, IS 52L and DS123 (DS 123 can be co-requisite) with the grade of "C" or better. Advanced features of spreadsheets (i.e. Excel) for data analysis. It introduces tools and applications of visualization while building pragmatic solutions to business problems. It follows a problem-solution format to explore data analysis and cover best-practices for delivering solutions. The course introduces machine learning concepts and applications with Artificial Intelligence. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Spring

DS 135. Data Analytics
Prerequisite: DS 123 or consent of the instructor. Analysis of large datasets to discover relationships and improve prediction and decision making. Techniques include data visualization, online analytical processing, multiple regression, logistic regression, recursive portioning, neural networks, and cluster analysis. Management applications and software tools. (2hr lec, 2hr lab) (Formerly DS 189T)

Units: 3

DS 189T. Topics in Decision Sciences
Prerequisites: 12 units in decision sciences. Theory or application of statistics or operations research applied to current developments.

Units: 1-3

DS 189T. Business Analytics with Python
This course introduces the essential programming concepts and techniques to data analytics as applied to business processes and data-driven decision making. We introduce Python as a language and tool for collecting, preprocessing, modeling, analyzing, and visualizing data for business analytics. (Offered Spring 2020)

Units: 3

DS 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

DS 195I. Internship
Prerequisite: permission of internship coordinator. Requires 150 hours of work at a prequalified, academically-related work station (business, government, or nonprofit agency.) Reflective journal, final report, and work station evaluation. CR/NC grading only. As a course substitution, prior department approval required. Only one internship may count towards option requirements.

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

IS 51. Programming Fundamentals
Prerequisite: IS 52 and IS 52L or equivalent. Structured program design using Microsoft Visual Studio. Concepts of object-oriented and event-driving programming, user interface design, algorithm development, testing and debugging, and documentation using business examples. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

IS 52. Computer Concepts
Introduction to computer hardware and software systems, impact of computers on society, ethical issues, application of computer technology in many career fields. No credit if taken after IS 50 (Formerly IS 50)

Units: 2
Course Typically Offered: Fall, Spring

IS 52L. Computer Concepts Lab
Hands-on study of office productivity software to include elements of word processing, electronic spreadsheets, database, and presentation software. Modules may differ by major. Some sections utilize self-paced computer-based training. No credit if taken after IS 50. (2 lab hours) CR/NC grading only. (Formerly IS 50)

Units: 1
Course Typically Offered: Fall, Spring

IS 106. Intermediate Website Design
Prerequisites: IS 52 and IS 52L. Theory and practice of Website design and authoring (HTML). Web page usability, graphic design optimization concepts, and the basics of CGI, Java, and Javascript; introduction to Internet architecture concepts and protocols. (2 lecture, 2 lab hours)(Formerly IS 156T)

Units: 3

IS 130. Management Information Systems
Prerequisites: IS 52 and IS 52L or demonstration of computer literacy; ACCT 4A, ACCT 4B; BA 105W or ENGL 160W (may be taken concurrently). Management concepts in the role/administration of information/information system functions in organizations; enhancement of management with computers; management of systems development; planning and budgeting, analysis, design, implementation and operation of computer-based systems; measurement of operating performance.

Units: 3
**Course Typically Offered: Fall, Spring**

**IS 140. Geographic Information Systems (GIS) for Business**  
Prerequisites: solid computer skills. Application of geographic information systems to solution of business problems. Study of GIS concepts, software, management, ethical issues, and cases using local data and problems. (2 lecture, 2 lab hours)  
(Formerly IS 156T)  
Units: 3

**Course Typically Offered: Fall**

**IS 141. Cyber-Security**  
Prerequisites: IS 130 or consent of instructor. Comprehensive overview of the essential concepts students must know as they pursue careers in information systems security. Students will learn critical principles that enable them to plan, develop, and perform security tasks. Topics include hardware, software, processes, communications, applications, and policies and procedures with respect to organized IT security and Risk Management. (Formerly IS 189T.)  
Units: 3

**Course Typically Offered: Summer**

**IS 150. End-User Computing**  
Prerequisites: IS 51, IS 52, IS 52L. Use of data resources in business problem solving. Integration of microcomputer packages with systems development concepts to implement information systems. Topics include information centers, 4GLs, and decision support tools. (2 lecture, 2 lab hours)  
Units: 3

**Course Typically Offered: Fall, Spring**

**IS 153. Enterprise Resource Planning Systems**  
Introduction to the concept of Enterprise Resource Planning (ERP) as integrating process data across several functions of an organization. Fundamental techniques for the operation and configuration of ERP systems. Successful selection and implementation on ERP Systems. Hands-on practice using a leading ERP system. (2 lecture, 2 lab hours)  
(Formerly IS 156T)  
Units: 3

**Course Typically Offered: Fall, Spring**

**IS 156T. Topics in Emerging Information Technologies**  
Prerequisites: IS 52, 52L. Overview of the most recent tools and techniques in information technology, and their utilization in the business environment with specific content of the course updated and refocused every year. (2 lecture, 2 lab hours)  
Units: 3, Repeatable up to 6 units

**Course Typically Offered: Fall**

**IS 158. Database Systems**  
Prerequisites: IS 51; IS 150 recommended. Data structures; file design; database design concepts emphasizing the relational model; data administration; application of database management system software. (2 lecture, 2 lab hours)  
(Formerly IS 165)  
Units: 3

**Course Typically Offered: Fall, Spring**

**IS 162. Data Communications**  
Resource sharing; computer traffic characterizations; multiplexing; network structure; packet switching and other switching techniques; computer network examples; routing and flow control; satellite and ground radio packet switching; transmission media and methods; line control procedures; line capacity assignment; communication processors. (Formerly IS 109)  
Units: 3

**Course Typically Offered: Fall, Spring**

**IS 166. Information Systems, Analysis and Design**  
Prerequisites: IS 158 with a C or higher grade, ACCT 4A, ACCT 4B, and upper-division standing. Systems approach to problem solving; systems development life cycle; systems analysis; use of system modeling tools; logical systems design, including user interfaces, database, structure, and controls; implementation and testing. (2 lecture, 2 lab hours)  
Units: 3

**IS 181. Computer Networks Management**  
Prerequisites: IS 52, IS 52L. Theory and practice of computer network design, installation, and management focusing on the role of the information communications system in a distributed business computing environment. Concepts include network operating systems, protocols, topologies, security, supporting services, applications, and disaster recovery. (2 lecture, 2 lab hours)  
Units: 3

**Course Typically Offered: Fall, Spring**

**IS 182. Advanced Network Design and Management**  
Prerequisites: IS 181. Design and management of advanced business telecommunications network components and services. Conceptual foundation and direct hands-on experience in designing, installing, and managing the relevant equipment, software, and services. (2 lecture, 2 lab hours)  
(Formerly IS 156T)  
Units: 3

**Course Typically Offered: Fall**

**IS 183. Advanced Web Site Design and Management**  
Prerequisite: IS 51, IS 158 (IS 158 may be taken concurrently). Theory and practice of Web site design and authoring. Dynamic HTML and cascading style sheets; Web-based e-commerce application design (client-side scripting and server-side scripting with a back-end database), Web development, project management, user interface design, interactivity design and information design. (2 lecture, 2 lab hours)  
Units: 3
Course Typically Offered: Spring

IS 184. Advanced Database
Prerequisites: IS 158, IS 166. (Not open to pre-business or undeclared majors.) Advanced study of database systems. Possible topics include advanced database theory, database administration, physical design and implementation, query processing and optimization, transaction management, recovery, security, and other advanced topics. (2 lecture, 2 lab hours). Not open to pre-business or undeclared majors. (Formerly IS156T)
Units: 3

IS 186. Project Management
(Same as MGT 158.) Fundamental concepts and techniques addressing all phases, process groups, and knowledge areas in the Project Management Body of Knowledge; software tools for planning, scheduling, and control of projects; satisfies education requirements for Project Management Institute PMP and CAPM certifications. (2 lecture, 2 lab hours)
Units: 3

IS 187. IS Practicum
Prerequisites: IS 158, IS 166, IS 186; senior standing. Integration and application of IS skills and knowledge across business functional areas. Students learn to deliver practical and strategic solutions in an integrative organizational environment. Students work in groups as consultants to solve real business problems. Course incorporates ethical considerations into decision-making. Students undergo competitive review and evaluation. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

IS 189T. Topics in Information Systems
Prerequisite: permission of instructor. Theory or application of information systems or information management as applied to current developments in the field.
Units: 1-3

IS 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

IS 195I. Internship
Prerequisite: permission of internship coordinator. Requires 150 hours of work at a pre-qualified, academically related work station (business, government, or nonprofit agency). Reflective journal, final report, and work station evaluation. As a course substitution, prior department approval required. Only one internship may count towards option requirements. CR/NC grading only.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

ARTS & HUMANITIES INTERDISCIP

AH 1T. ACADEC 2020
Combination of relevant study of cultural and critical topics with strong reasoning skills designed for High School students who are participants of the Academic Decathlon teams in Fresno and surrounding counties. Three sections to be offered one for each 2, 3, and 4 units. Enrollment in each section will depend on the number of hours the student is expected to complete: 40, 60, or 80+ hours. (Offered Spring 2020)
Units: 2-4

AH 100H. Arts & Humanities Honors Seminar
Investigation of Arts and Humanities issues such as: communication of ideas, language, theatrical and musical expression, myth, memory, identity (gender, race, nationality), reason, and emotion, love and sex, violence and war, nature and the environment, and happiness. (Formerly HUM 101T)
Units: 3

AH 101H. Arts & Humanities Honors Colloquium
Refinement, completion, and presentation of Honors Thesis/Project. (Formerly HUM 101T)
Units: 3
Course Typically Offered: Spring

AH 105. Arts and Humanities Study Abroad Experience
Prerequisites: G.E. Foundation and Breadth Area C. An Examination of the cultural environment of the foreign city or country visited, its art, architecture, language, literature, music, philosophy/religion, and their interrelationships. G.E. Integration IC.
(Formerly: HUM 101TZ)
Units: 3
GE Area: IC

AH 116. Humanities of the Modern Era
An examination of art, literature, philosophy, and music and their interrelationships in the Western world during the 19th and 20th centuries up to the present day. (Formerly INTD 116)
Units: 3
INTERNATIONAL STUDIES ABROAD

ISA 92. Projects in Study Abroad:
(Units variable; max total 18) Open only to students in The California State University International Programs. Study undertaken in a university abroad under the auspices of The California State University.
Units: 1-6

ISA 192. Projects in Study Abroad:
(Units variable; max total 18) Open only to students in The California State University International Programs. Study undertaken in a university abroad under the auspices of The California State University.
Units: 1-6

ISA 292. Projects in Study Abroad
One- to three-unit registrations. Prerequisite: admission to master's degree program; written plan approved by the instructor, department chair, and dean of the Division of Graduate Studies. May require one or more papers and oral or written examination on the student's return before the recording of the final grade.
Units: 1-6

ISC 93. Contemporary American Society
Introduction to contemporary American society to familiarize the student with political and social issues and ideological conflicts. (2 seminar hours)
Units: 1

SPEC 100. National Student Exchange
Units: 12, Repeatable up to 99 units

SPEC 105. National Student Exchange
For National Student Exchange (NSE) program Plan A. Students pay their fees at the visiting campus.
Units: 12, Repeatable up to 99 units

SPEC 110. Intrasystem Visitor
Units: 12, Repeatable up to 99 units

SPEC 120. Intrasystem Concurrent
Units: 1-12

SPEC 125. CSU CourseMatch
CSU CourseMatch
Units: 1-12

SPEC 130. CSU International Programs
Units: 6-12

SPEC 140. Sister International Exchange
Units: 12

SPEC 150. USAC
Units: 12, Repeatable up to 24 units

SPEC 170. Special Study Abroad Programs
Special Study Abroad Programs
Units: 3-12

SPECIAL PROGRAMS

COMS 1. Com Serv-Learn
Provides a community service-learning experience where students apply their academic knowledge and skills to community-based issues and needs. Experiential learning will be enhanced through class discussions and presentations on topics related to community service-learning. CR/NC grading only.
Units: 1-3

COMS 101I. Community Service Internship
Provides a community service-learning experience to help students develop personal, professional, and academic knowledge and skills. CR/NC grading only.
Units: 1-3

GS 296. Interdisciplinary Colloquium
Prerequisite: Consent of Coordinator. Seminar in Interdisciplinary Special Major issues, allowing discussion with a broad-based, cross-disciplinary emphasis.
Units: 1-3

GS 298. Interdisciplinary Project
Prerequisite: see university Criteria for Thesis and Project. Preparation, completion, submission, and/or demonstration of an original project appropriate to the student's area of specialization. Creativity shall be a prime factor. Written documentation and an abstract is required. Approved for RP grading.
Units: 2-6

GS 299. Interdisciplinary Thesis
Prerequisite: see university Criteria for Thesis and Project; consent of thesis chair. Preparation, completion, and submission of an acceptable thesis for the interdisciplinary master's degree. Approved for RP grading.
Units: 2-6
GS 299C. Graduate Program Continuation
For continuous enrollment while completing the culminating experience.
Units: 0

INOV 191T. Topics in Innovation
Studies in innovation.
Units: 3, Repeatable up to 9 units

INTD 50. Critical Thinking on Global Issues
Identify and critically examine the seven areas of change expected to be most "revolutionary" in the coming decades including: Population, Resources, Technological, Information, Economic Integration, Security and Conflict, and Governance. A focus will be on how these areas inter-relate and how students can enable a more preferable future. G.E. Foundation A3.
Units: 3
GE Area: A3

INTD 177. Global Challenges
This course helps students become more globally competent by looking at different countries, cultures and ethnicities through the lens of seven large global Challenges: Population, Resources, Technological, Information, Economic Integration, Security and Conflict, and Governance. Multicultural/International M/I.
Units: 3

UNIV 8. Reading Skills Application
Teaches skills to improve college success. Improves reading comprehension, study, and test-taking skills. Literal comprehension (topic sentences, paragraph patterns, signal words), critical comprehension (intent, tone, figurative language, propaganda, attitude), and vocabulary development.
Units: 1-3

UNIV 20T. Acad Learn Strat
Units: 3

UNIV 20T. Writing Skills
Units: 1, Repeatable up to 6 units

UNIV 20T. Connect to Careers
The course is intended to integrate students' academic knowledge with career-related experiences. The course will help students assess their own skills, expose them to careers, and understand a variety of organizational structures and operational procedures of a work environment. Students will be required to find an approved placement experience to help them further develop or enhance their professional skills.
Units: 1, Repeatable up to 6 units

UNIV 100. Succeeding at the University
Assists transfer and upper division students acquire skills needed to be effective learners: study habits, goal setting, time management, academic planning, campus/community involvement, and information competence. Exposure to campus resources.
Units: 1

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BUSINESS INTERDISCIPLINARY

CSB 50. Introduction to the Craig School of Business
Introduction to business careers, career development, educational options, and opportunities provided by the Craig School of Business. Emphasis on CSB requirements, resources, and expectations. Presentation of topics by faculty, staff, alumni, and business executives. CR/NC grading only.
Units: 1

CSB 150. Strategies for Success
Prerequisites: Upper-Division Writing Skills Requirement (may be taken concurrently). Preparation for job placement including resumes, on-campus recruitment, business etiquette and job offers. Presentations by faculty, recruiters and alumni. May be used as a substitute for CSB 50 with prior written approval of the instructor. CR/NC grading only.
Units: 1

CSB 184. Junior Honors Seminar
Units: 3
Course Typically Offered: Spring

CSB 185. Senior Honors Seminar I
Prerequisite: acceptance into the Craig Honors Program. Analysis of business research and its application to business problems. Current issues and methods for solving business problems. Business research methodology, ethical considerations in designing research. Literature review and written proposal required for honors thesis. Data collection and analysis, graduate school, and job searches. Fall of senior year. (Formerly MGT 186A)
Units: 3
CSB 186. Senior Honors Seminar II
Prerequisite: CSB 185. Analysis of business research and the application to business problems. Writing, editing and revising manuscripts, preparing professional presentations, preparing papers for publication, and designing conference posters. Spring of senior year. (Formerly MGT 186B)
Units: 3

KINESIOLOGY

CI 161. Mth Mtl P E
Units: 3, Repeatable up to 999 units

EHD 154B. Final Student Teaching Seminar - Kinesiology
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 1

EHD 155B. Studt Tchg Kines
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

KAC 4. Swimming for Beginners
An introduction to aquatic safety, swim lore, self rescue, and the following strokes: freestyle, back crawl, breast stroke, butterfly, and side stroke. (Course fee, $4) (Formerly PE AC 4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 6. Water Aerobics
Water exercises which will be the vehicle to develop improved physical fitness or a therapeutic role with pool activities ranging from walking and jogging to resistance activities and hydrotherapy. (Course fee, $4) (Formerly PE AC 6)
Units: 1, Repeatable up to 99 units

KAC 10. Hip Hop Dance
Observation, practice, and refinement of basic skills in the art of Hip Hop dance. Understanding and appreciation of dance in diverse cultures and as a fitness activity. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 11. Partners Club Dancing
Teaches dancing with a variety of partners in club settings. Covers analysis of rhythms associated with modern music and application of these rhythms to partner dance. (Course fee, $4) (Formerly KAC 80T)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 12. Elementary Social Dance
An introduction to a variety of dances. Includes the basic step and variations for the cha-cha, waltz, fox trot, swing, tango, and rumba. (Course fee, $4) (Formerly PE AC 12)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 13. Swing Dance
Exploration of the many facets of swing dance for couples, including step patterns, rhythms and configurations. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 15. Basic Massage
Fundamental massage techniques; types of massage and their usage; physiological and psychological effects of massage, classical Swedish massage strokes and their sequence. (Course fee, $4) (Formerly PE AC 15)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 17. Elementary Archery
Instruction in archery skills, including care and construction of tackle. Emphasis on fundamental skills and shooting form. (Course fee, $4) (Formerly PE AC 17)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 19. Elementary Badminton
Instruction in basic skills and techniques of badminton for singles, doubles, and mixed doubles play. Emphasis on basic skill development, rules, and strategy. (Course fee, $4) (Formerly PE AC 19)
Units: 1, Repeatable up to 99 units
KAC 21. Elementary Strength Training
Basic knowledge and concepts of use of resistive exercises to increase muscular strength and endurance. The course stresses the physiological considerations of weight training, selecting exercises for basic programs, charting workouts, nutritional considerations of weight training, selecting exercises for basic programs, charting workouts, nutritional considerations, and the safety of weight training. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 22. Elementary Bowling
An introductory course which stresses fundamentals of the stance, approach and delivery, scoring, bowling terminology, etiquette, and league play. (Course fee, $25)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 24. Elementary Conditioning Exercises and Aerobics
A variety of floor and step activities to develop and improve strength, flexibility, and cardiovascular endurance. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 26. Shiatsu Massage
Fundamental principles and techniques of shiatsu (Japanese Acupressure Therapy); the physiological and psychological effects of shiatsu; different techniques of pressure application, basic shiatsu points; and basic shiatsu routine. (Course fee, $4)
Units: 1, Repeatable up to 99 units

KAC 27. Elementary Fencing
Instruction in the on-guard position, footwork, basic defensive and offensive skills, and judging a foil fencing bout. Emphasis on foil fencing. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 28. Beginning Billiards
Basic concepts, techniques, skills, and strategies associated with billiards, pool, and similar games. (Course fee, $4) (Formerly KAC 80T)
Units: 1, Repeatable up to 99 units

KAC 30. Elementary Golf
Beginning instruction on the techniques for putting, chipping, pitching, iron, and wood shots. Also includes rules and etiquette for golf. (Course fee, $4)
Units: 1, Repeatable up to 99 units

KAC 31. Elementary Gymnastics
Basic skills for balancing, stunts, tumbling, trampolining and apparatus work. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 33. Fitness Walking
Designed to improve physical and emotional health through walking for pre-set duration and intensity. Includes benefits, walking technique, weight loss plan, and pre- and post-fitness levels. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 39. Jogging
Instruction in the basic principles of fitness as they apply to a jogging program. Emphasis on learning how to train/workout, cardiorespiratory endurance, and proper walking/jogging techniques and flexibility. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 40. Elementary Karate
Japanese style of Shotokan Karate. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 41. Judo
Basic instruction in techniques for throwing, grappling skills, and limited self-defense. Students should achieve technical level of yellow belt. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 42. Physical Training
Unique overall fitness program emphasizing strength and endurance training. Designed to tone muscles, promote weight loss and increase stamina. Course is tailored to individual student needs. Program includes running, weight lifting, aerobics, organized sports, and calisthenics. (Course fee, $4)
Units: 2, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 43. Taekwondo
Korean marital art and Olympic event; emphasizes self-control, balance and coordination, flexibility, speed, self-defense, and Olympic-style sparring. (Course fee, $4) (Formerly KAC 80T)
Units: 1, Repeatable up to 99 units
KAC 44. Kendo
The art of Japanese fencing; emphasizes self-discipline, physical training, competition, and swordsmanship. (Course fee, $4) (Formerly KAC 80T)
Units: 1, Repeatable up to 99 units

KAC 45. Basic Aikido
Basic Aikido techniques, terminology and Dojo etiquette. Facilitate the understanding and application of basic Aikido self-defense techniques, and prepare the student with basic skills necessary to comfortably train in any Aikido Dojo. (Formerly KAC 80T)
Units: 1, Repeatable up to 99 units

KAC 46. Elementary Racquetball
Introduction to rules, etiquette, basic strategy, and a variety of shots, including the forehand and backhand drive, lob, pinch, kill, and back-wall. Also includes a variety of serves. (Course fee, $4)
Units: 1, Repeatable up to 99 units

KAC 47. Tai Chi
Fundamentals of history, philosophy, and practice of Tai Chi. (Course fee, $4) (Formerly KAC 80T).
Units: 1, Repeatable up to 99 units

KAC 48. Cardiovascular Boot Camp
Course will enhance and improve the cardiovascular conditioning of individual students by applying the current training methodology of the U.S. Army. This class will be a hard driving, motivational and fun change of pace for students who want to experience the physical conditioning atmosphere and regimens that only the U.S. military can provide. (Course fee, $4)
Units: 1, Repeatable up to 99 units

KAC 49. Kickboxing
Basic kickboxing techniques and physical conditions. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 50. Assault Avoidance Techniques
Physical training and practice to facilitate the understanding and application of basic self-defense techniques and to raise awareness for personal safety and empowerment. Explores many creative self-defense strategies. (Course fee, $4) (Formerly KAC 80T)
Units: 1, Repeatable up to 99 units

KAC 51. Self-defense
Instruction in the basics of personal defense and safety. Emphasis will be on awareness and prevention as well as techniques for dealing with an assailant. (Course fee, $4) (Formerly PE AC 51)
Units: 1, Repeatable up to 99 units

KAC 52. Beginning Table Tennis
Instruction in basic skills and techniques of table tennis for singles and doubles play; emphasis upon footwork, strokes, different spins, and strategies. (Course fee, $4) (Formerly KAC 80T)
Units: 1, Repeatable up to 99 units

KAC 53. Elementary Tennis
Designed for players with little or no experience who want to review the basics. Topics include: terminology, stroke fundamentals, game rules, basic positioning for singles and doubles play, footwork, and etiquette. Non-marking tennis-specific shoes required. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 54. Elementary Tennis
Designed for players with little or no experience who want to review the basics. Topics include: terminology, stroke fundamentals, game rules, basic positioning for singles and doubles play, footwork, and etiquette. Non-marking tennis-specific shoes required. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 55. Yoga
Instruction and practice in the basics of Hatha Yoga. Includes beginning breathing patterns, relaxation techniques, physical postures, and concentration exercises. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 56. Fitness Development through Pilates Mat
Basic principles and techniques of Pilates mat exercises. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 57. Basketball
Participation-based course emphasizing basketball fundamentals such as passing, dribbling, and shooting, as well as basic fast break and offensive and defensive principles. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 58. Soccer
Instruction and practice in the basic fundamentals of soccer. Includes game rules, terminology, participation and competition drills, fundamental soccer skills, conditioning, principles of play, and appropriate sportsmanship. (Course fee, $4)
Units: 1, Repeatable up to 99 units
KAC 71. Elementary Volleyball
Instruction and practice in basic fundamentals of volleyball. Includes setting, serving, passing, blocking, rules and strategies, and practical applications of knowledge in game situations. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 73. Softball
Instruction and practice in playing skills, strategies, and rules of softball. Includes individual skill, offensive and defensive skills and concepts, modified game activities, and competitive opportunities. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 80T. Intermediate Fencing
Intermediate footwork offensive and defensive techniques for foil and saber.
Units: 1

KAC 101. Advanced Lifesaving
Prerequisite: 300 yard continuous swim (front crawl and breaststroke), and a 20-yard swim, surface dive of 7-10 feet, retrieving a 10-pound object, 20-yard swim with the object, exiting the water using the ladder/steps within 100 seconds. (Course fee, $4)
Units: 2, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 103. Swim for Fitness
Prerequisite: intermediate swim ability. Development of aerobic, cardiovascular fitness through swimming. Exposure to various swim programs and practice of a variety of swimming strokes. (Course fee, $4)
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

KAC 154. Intermediate Tennis
Prerequisite: KAC 54 or equivalent. Review of beginning level skills and introduction of intermediate level tennis strokes and strategy. Non-marking tennis-specific shoes required. (Course fee, $4)
Units: 1, Repeatable up to 99 units

KAC 171. Intermediate Volleyball
Prerequisite: KAC 71 or equivalent. Review of basic skills and introduction of intermediate level skills and strategies. (Course fee, $4) (Formerly PE AC 171A)
Units: 1, Repeatable up to 99 units

KINES 1. Introductory Principles and Techniques for Physical Fitness Development
Prerequisites: Kinesiology or athletic training major, or by permission of the department chair. The study of introductory concepts, principles, and techniques for the development of physical fitness. Students are strongly encouraged to complete this course during the 1st or 2nd semester on campus.
Units: 3
Course Typically Offered: Fall, Spring

KINES 20. Fitness Development
Prerequisite: Kinesiology or Athletic Training major or by permission of the department chair. Fundamental and basic principles of development of physical fitness; integration of theory and practice. Physical performance and written requirements included. Prerequisite for many other kinesiology courses. (2 lab hours)
Units: 1
Course Typically Offered: Fall, Spring

KINES 25. Conditioning and Resistance Training Techniques
Prerequisite: Kinesiology or Athletic Training major or by permission of the department chair. The foundational application, performance, supervision, and instruction of accepted strength training and conditioning techniques.
Units: 1
Course Typically Offered: Fall, Spring

KINES 31. Historical and Professional Foundations of Physical Education
Prerequisite: Course open to Kinesiology - Physical Education option majors only or with permission from the department. Introduction to the physical education profession. Includes history, philosophy, psychology, sociology, concepts, programs, state and national standards, qualifications, career issues, and future of the discipline.
Units: 3
Course Typically Offered: Fall, Spring

KINES 32. Lifetime Fitness and Wellness
Units: 2
Course Typically Offered: Fall, Spring

KINES 33. Foundation of Sport Exercise Psychology
The study and application of psychological principles and foundations to sport and exercise across the lifespan and across activity contexts. (Formerly KINES 80T)
Units: 3
Course Typically Offered: Fall, Spring

KINES 35. Human Structure and Function: Applications to Kinesiology
An introductory study of principles, concepts, and interactions of human anatomy and physiology specifically related to physical activity and directed toward kinesiologists and/or coaches. Emphasis on metabolism (bioenergetics) and respiratory, cardiovascular, neuromuscular, and skeletal systems.
Units: 3
Course Typically Offered: Fall, Spring

KINES 38. Introduction to Athletic Training
Designed for prospective coaches, athletic trainers, and health and physical educators. Aids in the recognition, evaluation, and care of athletic injuries. Techniques in taping, prevention, and rehabilitation of injuries. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

KINES 43. Preliminary Athletic Training Laboratory
Prerequisite/Corequisite: PH 48, PH 49, or KINES 38. Designed for prospective athletic training students. A minimum of 100 hours of direct observation under the supervision of a certified athletic trainer is a course requirement. CR/NC grading only.
Units: 1, Repeatable up to 2 units
Course Typically Offered: Fall, Spring

KINES 45. Introduction to Sport Administration
Examination of the sport industry, including the professional, college, youth, high school, and Olympic sport sectors. Overviews the internal and external aspects of sport organizations as well as common sport careers, duties, and responsibilities within the sport industry. (Formerly KINES 180T)
Units: 3
Course Typically Offered: Fall

KINES 75T. Topics in Kinesiology
Introductory topics in kinesiology not available through current curricula offerings.
Units: 1-3

KINES 109. Motor Learning
Principles of motor learning. The study of various theories. Application of theories and findings in presentations and planning of movement activities. (2 lecture, 2 lab hours)
Units: 3

Course Typically Offered: Fall

KINES 110. Motor Development
Prerequisites (for Physical Education Option only): KINES 1, KINES 31, KINES 32, and KINES 35. Comprehensive study of physical, psychological and social stages of human development through the lifespan related to motor development. Students will be prepared to recognize, assess and provide feedback related to developmental and learning sequences, and basic movement patterns.
Units: 3
Course Typically Offered: Fall, Spring

KINES 111. The Olympic Games
Prerequisites: G.E. Foundation and Breadth Area D. History, development, and significance of the Olympic Games; Olympism as a microcosm of cross-cultural, political, economic, and gender relationships. Will not meet the Upper Division GE requirement for Kinesiology or Athletic Training Majors. G.E. Integration ID.
Units: 3
Course Typically Offered: Fall, Spring

KINES 116. Fundamentals of Biomechanics
Prerequisites: Kinesiology - Physical Education option only: KINES 1; for other options and majors: KINES 35 or BIOL 33 or BIOL 67A. Study of structural and mechanical properties of musculoskeletal system, associated movement function of human body, and applied physics. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

KINES 118. Fundamentals of Exercise Physiology
Prerequisites: KINES 35 or BIOL 33 or BIOL 67B. The study and application of physiological bases of movement, work, response, and adaptation to exercise. Environmental conditions, gender, and age considered.
Units: 3
Course Typically Offered: Fall, Spring

KINES 119. ECG and Clinical Exercise Physiology
Prerequisites: KINES 118 (can be taken concurrently). Foundational principles and concepts of electrocardiography, and clinical applications of principles and concepts of exercise physiology. (CSU liability insurance fee, $8)
Units: 3
Course Typically Offered: Fall, Spring

KINES 120. Planning Strategies for Physical Education
Pre-requisite for KINES 120: KINES 1 or (KINES 20 + 25), KINES 31, KINES 35, KINES 110 passed with a C grade. KINES 31 concurrent for Phys Ed Cred Transfer. Organization, presentation, and evaluation of in-class demonstrations. Philosophy of teacher preparation covered and developed
through practice, observation, planning and presentations. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

KINES 121. Body Composition: Theory, Principles and Management
Prerequisite: KINES 32. Concepts and models of body composition. Theoretical principles underlying measurement of body composition; practical applications of principles to measurement. Behavioral strategies for optimization of body composition.

Units: 3
Course Typically Offered: Fall, Spring

KINES 122. Nontraditional Games and Outdoor Education
Prerequisites: KINES 1, KINES 31, KINES 32, KINES 33, KINES 35 (or BIOL 33), KINES 110, KINES 120 passed with C grade; and KAC Area A, B, and C. Course open to Kinesiology - Physical Education option majors only. Study of a variety of recreational, multicultural, and non-traditional games, as well as outdoor education for lifelong participation. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

KINES 123. Analysis and Application: Rhythmic Movement in Physical Education
Prerequisites: KINES 1, KINES 31, KINES 32, KINES 33, KINES 35, KINES 110, KINES 116, KINES 118, KINES 120; KAC Area A, B, and C. Study of a variety of recreational, multicultural, and non-traditional games, as well as outdoor education for lifelong participation. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall

KINES 125A. Coaching Football
Principles underlying participation in competitive football. (Spring only)

Units: 3
Course Typically Offered: Spring

KINES 125B. Coaching Basketball
Principles underlying participation in competitive basketball. (Fall only)

Units: 3
Course Typically Offered: Fall

KINES 125C. Coaching Track and Field
Principles underlying participation in competitive track and field.

Units: 3

KINES 125D. Coaching Baseball
Principles underlying participation in competitive baseball. (Fall only)

Units: 3
Course Typically Offered: Fall

KINES 126. Analysis and Application: Aquatics
Prerequisites: KINES 1, KINES 31, KINES 32, KINES 35 (or BIOL 33), KINES 110, KINES 120 passed with a C grade; and KAC Aquatics requirement (KAC 4, 6, or 103) which may not be taken concurrently. Course open to Kinesiology - Physical Education option majors only. Overview of aquatics: elementary through advanced skills (infant through adult). Emphasis on sequencing skills and water safety certification. Required to teach PE in CA public schools. (2 lectures, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

KINES 131. Analysis and Application: Individual, Team and Fitness Activity
Prerequisites: KINES 1, KINES 31, KINES 32, KINES 33, KINES 35, KINES 110, KINES 116, KINES 118, KINES 120; KAC Area A, B, and C. Analysis and application of strategies for teaching individual, team, and fitness activities. Principles, theory and practice of fitness and teaching in adapted or mainstream settings. (1 lecture, 4 lab hours)

Units: 3
Course Typically Offered: Fall

KINES 137. Structural Biomechanics
Prerequisites: KINES 35 or BIOL 33 or BIOL 67A. Human movement: biological and mechanical bases, application of musculoskeletal considerations, and principles of mechanics to human movements.

Units: 3

Course Typically Offered: Fall

KINES 140A. Rehabilitation Techniques in Athletic Training II
Prerequisites: KINES 137, KINES 138A, KINES 138B, KINES 139. Clinical applications, parameters, and principles governing rehabilitation techniques prevalent in modern athletic training. (2 lecture, 2 lab hours).

Units: 3
Course Typically Offered: Fall

KINES 140B. Rehabilitation Techniques in Athletic Training II
Prerequisites: KINES 140A. Kinesiological factors for integrative application of rehabilitation techniques to spine and extremities. Post operative and rehabilitation considerations
for returning active patients to a variety of settings and athletic venues will be explored. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Spring

KINES 142. Seminar in Athletic Training
Taken concurrently with KINES 143. A seminar course designed to focus on and review athletic training competencies.

Units: 1, Repeatable up to 4 units
Course Typically Offered: Fall, Spring

KINES 143C. Athletic Training Practicum III
Prerequisite: KINES 138B and KINES 143B. Open to Athletic Training majors only. Taken concurrently with KINES 142. Students are instructed and evaluated performing athletic training proficiencies on patients under the direct supervision of a clinical preceptor. Involves approximately 300 to 525 hours. CR/NC grading only.

Units: 2, Repeatable up to 8 units
Course Typically Offered: Fall

KINES 143D. Athletic Training Practicum IV
Prerequisite: KINES 140A and KINES 143C. Open to Athletic Training majors only. Taken concurrently with KINES 142. Students are instructed and evaluated performing athletic training proficiencies on patients under the direct supervision of a clinical preceptor. Involves approximately 300 to 525 hours. CR/NC grading only.

Units: 2, Repeatable up to 8 units
Course Typically Offered: Spring

KINES 144I. Field Experience in Teaching
Prerequisites: KINES 1, KINES 31, KINES 32, KINES 33, KINES 35, KINES 110, KINES 116, KINES 118, KINES 120, KINES 122, KINES 123, KINES 131; KAC Area A, B, and C. Open only to kinesiology majors with options in physical education. Supervised placement in physical education instructional settings at the elementary, middle, and high school levels. Includes a variety of practical learning experiences and seminar discussions. CR/NC grading only. 
(3 hours undergraduate seminar education workshop) (CSU liability insurance fee, $8)

Units: 3
Course Typically Offered: Spring

KINES 146. Risk Management of Sport & Exercise
Prerequisites: Kinesiology Exercise Science Option major, or B or better in KINES 45; KINES 111. Examination of common risk management issues and principles in the sport and exercise industries, including contracts, torts, constitutional law, intellectual property, employment law, agency law, sport legislation. (Formerly KINES 180T)

Units: 3

Course Typically Offered: Spring

KINES 147. New Venture Sport
Examination of new ventures are created in the sport industries. Covers planning, self-assessment, idea generation, development and operating strategies required to start a new venture in exercise sport. (Formerly KINES 180T course).

Units: 3
Course Typically Offered: Spring

KINES 148. Biophysical Aspects of Aging
(KINES 148 same as GERON 148) Theories of aging, biological mechanisms of the aging process, and the role of physical activity in those physiological functions influenced by age. (Spring only)

Units: 3
Course Typically Offered: Spring

KINES 150I. Internship in Sport Administration
Prerequisites: Senior standing, completion of all required courses in the Kinesiology - Sport Administration option, and approval from Kinesiology - Sport Administration Option Coordinator. Supervised work experience in a sport administration setting, directed and evaluated by a qualified faculty member with supervision by an on-site sport administration professional.

Units: 12
Course Typically Offered: Fall, Spring

KINES 152. Physical Education for Children
Prerequisite: minimum of junior standing. Theory, analysis, and study of movement experiences, skills and materials, appropriate for elementary level school children. (2 lecture, 2 lab hours) (CSU liability insurance fee, $8)

Units: 3
Course Typically Offered: Fall, Spring

KINES 157. Adapted and Inclusive Physical Education
Prerequisites: KINES 1, 31, 32, 110, 120 and proof of current First Aid and CPR/AED certification for adult and child. The design, implementation, and evaluation of individualized adapted PE programs for students with disabling conditions in school & special settings. (2 lecture, 2 lab hours) (CSU liability insurance fee, $8)

Units: 3

Course Typically Offered: Spring

KINES 159. Measurement and Evaluation
Prerequisites: KINES 1, KINES 31, KINES 110, and KINES 120. Course open to Kinesiology - Physical Education option majors only. Selection, adaptation and development of appropriate measurement instruments and strategies based on physical, motor, and fitness attributes and needs of individuals and classes. Application and interpretation of basic statistical methodology.(2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Spring

KINES 162. Coaching Concepts
Current problems of coaches in the school setting; techniques of motivation, organization, and public relations. (Fall only)
Units: 3
Course Typically Offered: Fall

KINES 163. Fitness and Wellness
Prerequisite: KINES 32, KINES 118 (may be taken concurrently). Study, analysis, development, and practice of health related fitness and weight control programs for various populations. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

KINES 165. Performance Related Fitness
Prerequisites: KINES 118 and KINES 116 or KINES 137 (all may be taken concurrently). Physiological and biomechanical principles related to implementation of conditioning programs for athletic performance. Practical applications. Discussion of skill and performance-related components of physical fitness. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

KINES 167. Integrative Exercise Science
Prerequisites: KINES 116 and KINES 118 (both may be taken concurrently). Integration of humanistic, physiological, and biomechanical aspects of exercise science through lectures, readings, discussions, and writing assignments. Note: Potentially restricted admission during first week of enrollment to students with senior status.
Units: 3

KINES 172SI. Seminar in Coaching and Sport Leadership
The purpose of this course is to provide students with a supervised opportunity to observe and participate in coaching and sport leadership. Discussion of coaching science and sport leadership issues in relation to service-learning observations, which is an integral component of the course. Students are encouraged to complete KINES 33 and/or KINES 162 prior to enrollment in this course. (Formerly KINES 180T)
Units: 3
Course Typically Offered: Fall, Spring

KINES 180T. Topics in Kinesiology
Topics relating to analysis, performance, theory, current trends, and research in kinesiology not available through current curricula offerings.
Units: 1-3

KINES 180T. Personal Development
This course examines high-performing people throughout history to discover why some live remarkably successful lives while others fail to reach their full potential. Students will learn how to self-manage their time and priorities to reach their own life and career objectives. Emphasis is placed on implementing high-performing choices, systems, and behaviors that, over time, lead to high-achieving results and better well-being. (Offered Spring 2020)
Units: 3

KINES 190. Independent Study
See Academic Placement - Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

KINES 199I. Supervised Work Experience
Prerequisites: upper-division status, GPA 2.5 last 30 units, permission of department chair and instructor. CR/NC grading only. (CSU liability insurance fee, $8)
Units: 1-2
Course Typically Offered: Fall, Spring

KINES 222. Biomechanics
Prerequisites: KINES 116 or KINES 137 or equivalent. Study of physical and mechanical bases of human movement. Mechanical properties of tissues, relation to function. Application of principles of physics and mechanics to human movement and sport. Kinematic analysis of sport performances.
Units: 3

KINES 230. Statistical Inference in Kinesiology
Theory and nature of statistical inference; study of statistical methodology relating to the selection of the most appropriate statistical technique, and the interpretation of findings. Required of all M.A. candidates.
Units: 3

KINES 231. Research Methods in Kinesiology
Seminar in research methods appropriate for physical education, exercise science, and related professions: use of information retrieval technology; critiquing, conducting and reporting research. Required of all M.A. candidates. (Formerly P E 231)
Units: 3

KINES 232. Environmental Exercise Physiology
The physiological responses/adaptations/illnesses to heat, altitude, cold, hyperbaric, polluted, and microgravity environments with attention to human performance will be
studied. Course will emphasize acute and chronic effects of heat and hydration on exercise performance.

Units: 3

KINES 233. Metabolic and Neuromuscular Exercise Physiology
Prerequisites: KINES 118 or equivalent. Advanced study of biochemistry of energy metabolism; structure, function, performance and training adaptation of the neuromuscular system; effects of exercise, training and aging on musculoskeletal and neuromuscular health, fitness and performance. (2 lecture, 3 lab hours)

Units: 3

KINES 234. Cardiovascular and Respiratory Exercise Physiology
Prerequisites: KINES 118. Advanced study of the cardiovascular and respiratory systems related to exercise, training, health, disease, and aging. Theoretical concepts are supported by extensive practical experience in the Human Performance Lab. (2 lecture, 3 lab hours)

Units: 3

KINES 237. Design and Implementation of Resistance Training Programs
Study of research findings and established scientific principles of resistance training for development of muscular strength, power, and endurance. Practical applications to technique, program development, and competition. (Formerly P E 237)

Units: 3

KINES 238. Exercise Testing, ECG, and Prescription
Prerequisite: KINES 118 or equivalent. Study of American College of Sports Medicine Guidelines for Exercise Testing and Prescription. Concepts of Screening, exercise testing, and prescribing exercise for apparently healthy and special needs populations, supported by extensive practical laboratory testing experiences. (CSU liability insurance fee, $8)

Units: 3

KINES 241. Sport Leadership
This course explores the importance of leadership in sport, how to lead and solve problems, and how to build organizations from the bottom up. The culmination of the class is a personal leadership development plan formulated by each student.

Units: 3

KINES 242. Program Development in Physical Education
Study of the current education scene to provide students with an understanding of the role that school physical education plays in today's education. Identification of sound procedure and practice in organizing and conducting relevant programs of physical education.

Units: 3

KINES 244. Sport Law
The study and application of the law to sport organizations and its implications for sport leaders. (Formerly PE 244)

Units: 3

KINES 245. Sport Career Development
Study of sport career development. Students undergo a career analysis to determine their current market value, build a personal brand, and develop a strategic sport career plan to differentiate themselves from others in the sport industry.

Units: 3

KINES 246. Sport Revenue Streams
Examination of sport revenue streams, with emphasis on how to increase revenue via sport fundraising, sales, sponsorship, promotion, and licensing.

Units: 3

KINES 247. Title IX Compliance
Examination of the issues and principles related to Title IX compliance as they apply to interscholastic and intercollegiate athletics. (Formerly KINES 250T).

Units: 3

KINES 250T. Topics in Kinesiology
Advanced studies in theoretical research in selected topics. (Formerly P E 250T)

Units: 1-3

KINES 261. Professional Ethics
Examination of ethical issues, practices, and values in sport. Emphasis on developing professional values in relation to one's chosen profession.

Units: 3

KINES 262. Social Implications of Sport
Cultural and social factors related to play, games, and athletic contests; social parameters in the conduct and management of school athletic programs; emphasis on research studies. (Formerly P E 262)

Units: 3

KINES 263. Psychology of Sport: Mental Training
An examination of the concepts in sports psychology, motivational variables, emotional states and personality variables; mental states, behavioral techniques and strategies; and issues in sports psychology. (Formerly P E 263)

Units: 3

KINES 264. Psychology of Coaching: Talent Development
Examination of psychological components of the coaching and talent development. Explores coaching development, coaching...
models, as well as strategies for dealing with athletes and different coaching contexts. Discussion of talent development theories including influence of genetic and environmental factors. (Formerly KINES 250T)

Units: 3

KINES 265. Psychobiology of Sport and Exercise
Investigation of the relationship between sport, exercises, physical activity and anxiety, arousal, burnout, causal attributions, cognitive functioning, exercise adherence, group cohesion, mood states, motivation, negative behavior, personality, public health, quality of life, self-confidence, and youth development.

Units: 3

KINES 266. Psychology of Injury in Sport and Physical Activity
An examination of psychological theories and applied considerations related to injuries and the subsequent rehabilitation of the physically active.

Units: 3

KINES 285. Internship in Kinesiology
Work experience within the physical education, health-fitness industry, or sport administration setting, directed and evaluated by a qualified faculty member with appropriate supervision by an on-site professional. CR/NC grading only.

Units: 3-6

KINES 290. Independent Study
See Academic Placement Independent Study. Approved for RP grading.

Units: 3, Repeatable up to 6 units

KINES 298. Project
Preparation, completion, submission, and/or demonstration of an original project. Creativity shall be a prime factor. Approved for RP grading.

Units: 3-6

KINES 298C. Project Continuation
Pre-requisite: Project KINES 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

KINES 299. Thesis
Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.

Units: 6

KINES 299C. Thesis Continuation
Pre-requisite: Thesis KINES 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

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LINGUISTICS

ARAB 1A. Elementary Arabic A
Beginning course in modern Arabic focusing on elementary conversational and written Arabic and cultural traditions of Arabic speaking people. (Formerly LING 40T). G.E. Breadth C2.

Units: 4
Course Typically Offered: Fall GE Area: C2

ARAB 1B. Elementary Arabic B
Prerequisite: ARAB 1A or consent of professor. Second semester course in modern Arabic focusing on further developing conversational and written skills, vocabulary, and grammar. Cultural heritage of Arabic speaking people is also studied with emphasis on poetry as an important cultural expression. G.E. Breadth C2.

Units: 4
Course Typically Offered: Spring GE Area: C2

ARAB 2A. Intermediate Modern Arabic 2A
Prerequisite: Arabic 1B or consent of instructor. First semester intermediate course on modern standard Arabic focusing on grammar and developing writing, reading, and speaking skills. Cultural heritage of Arabic speaking people is also studied with emphasis on Arabic contemporary poetry and prose.

Units: 3
Course Typically Offered: Fall

ARAB 2B. Intermediate Modern Arabic 2B
Prerequisite: Good working knowledge of Arabic or consent of instructor. Second course in Intermediate Arabic focusing on developing proficiency in conversational, written, and reading skills. The cultural heritage of the Arabic speaking world is also studied with emphasis on Arabic classical and contemporary poetry and prose.

Units: 3
Course Typically Offered: Spring

CGSCI 100. Foundations of Cognitive Science
An interdisciplinary area of study focusing on cognition: how we perceive the world, and how we can model the ways we think or perceive. Brings together the key fields of linguistics, psychology, philosophy and computer science.

Units: 4
Introduces students to the discipline of Cognitive Science through a series of lectures given by local and visiting Cognitive Scientists. The structure and content will vary from term-to-term. May be taken 3 times for credit.
Units: 3, Repeatable up to 9 units

CHIN 1A. Elementary Chinese 1A
Prerequisite: G. E. Foundation A2. Beginning (1st semester) course in modern Mandarin Chinese, developing students basic skills in listening, speaking, reading, and writing, including understanding and appreciation of Chinese language, culture, and history. Not open to students with previous training in Chinese.
Units: 4
Course Typically Offered: Fall, Spring
GE Area: C2

CHIN 1B. Elementary Chinese
Prerequisite: G. E. Foundation A2. and Chinese 1A or equivalent. Beginning (2nd semester) course in modern Mandarin Chinese, continuing to develop students basic communication skills in listening, reading, speaking, and writing, including understanding and appreciation of Chinese language, culture, and history. G. E. Breadth C2
Units: 4
Course Typically Offered: Fall, Spring
GE Area: C2

CHIN 2A. Intermediate Chinese
Prerequisite: CHIN 1B. Intermediate grammar, speaking, reading, and writing.
Units: 3
Course Typically Offered: Fall

CHIN 2B. Intermediate Chinese
Prerequisite: CHIN 1B. Intermediate grammar, speaking, reading, writing.
Units: 3
Course Typically Offered: Spring

CHIN 100. Advanced Chinese
Advanced Mandarin Chinese course focusing on the skills of listening, speaking, reading, writing, and traditions and culture of the Chinese people.
Units: 3
Course Typically Offered: Fall

EHD 154B. Final Student Teaching Seminar - ESL
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 1

EHD 155B. Studt Tchg ESL
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

HEBR 1A. Basic Hebrew
Basic structure and pronunciation of Hebrew; practice in reading, writing, speaking, and grammar; suitable introduction to both Biblical and modern Hebrew. G.E. Breadth C2.
Units: 4
GE Area: C2

HEBR 1B. Basic Hebrew
Basic structure and pronunciation of Hebrew; practice in reading, writing, speaking, and grammar; suitable introduction to both Biblical and modern Hebrew.
Units: 3

HMONG 1A. Basic Hmong
First semester course on the Hmong language, with emphasis on basic reading, writing, speaking, and listening and on Hmong society, history, culture, traditions, and arts. G.E. Breadth C2.
Units: 4
Course Typically Offered: Fall
GE Area: C2

HMONG 1B. Basic Hmong
Prerequisite: Hmong 1A. Second semester course in conversational and written Hmong and cultural traditions of Hmong speaking people. G.E. Breadth C2.
Units: 4
Course Typically Offered: Spring
GE Area: C2

HMONG 4. Beginning Literacy for Hmong Speakers
For the native speaker of Hmong. Emphasis on basic reading and composition skills. Includes practice in reading and writing simple texts. Covers the traditions and lifestyles of the speakers of the language.
Units: 3
HMONG 100. Intermediate Reading and Composition
Prerequisite: HMONG 4 or equivalent. Further development of reading and composition skills. Includes practice in reading expository texts and review of grammatical structures.
Units: 3
Course Typically Offered: Fall

HMONG 101. Advanced Reading and Composition
Prerequisite: HMONG 100 or equivalent. Emphasis on strategies for complex texts. Enhancement of composition fluency and grammatical accuracy.
Units: 3
Course Typically Offered: Spring

JAPN 1A. Elementary Japanese
Prerequisite: G.E. Foundation A2. Not open to native speakers of Japanese. First course in modern Japanese, including basic communication skills, cultural traditions of the Japanese people, and appreciation/practice of calligraphy.
Units: 4
Course Typically Offered: Fall, Spring GE Area: C2

JAPN 1B. Elementary Japanese
Prerequisite: G.E. Foundation A2. JAPN 1A is prerequisite to JAPN 1B. Not open to native speakers of Japanese. Second course in modern Japanese, including basic communication skills, cultural traditions of the Japanese people, and appreciation/practice of calligraphy.
Units: 4
Course Typically Offered: Fall, Spring GE Area: C2

JAPN 2A. Intermediate Japanese
Prerequisite: JAPN 1B. Further development of communicative skills in conversational Japanese. Also covers reading and writing in Kana and 200 Kanji characters.
Units: 3
Course Typically Offered: Fall

JAPN 2B. Intermediate Japanese
Prerequisite: JAPN 1B. Further development of communicative skills in conversational Japanese. Also covers reading and writing in Kana and 200 Kanji characters.
Units: 3
Course Typically Offered: Spring

JAPN 100. Advanced Japanese
Prerequisite: JAPN 2B or its equivalent. Enhancement of oral communicative fluency as well as grammatical accuracy. Includes practice in reading some expository writing. Covers 150 Kanji characters.
Units: 3
Course Typically Offered: Spring

JAPN 101. Advanced Japanese
Prerequisite: JAPN 100 or equivalent. Enhancement of fluency, accuracy, and comprehension both in conversation and in reading and writing different genres and scripts.
Units: 3
Course Typically Offered: Spring

LING 5. College Reading and Academic Language
College reading and academic language competencies necessary for success in academic subject course work, including active reading and vocabulary development strategies, summarizing, and elements of academic culture.
Units: 3
Course Typically Offered: Fall, Spring

LING 6. Advanced English Strategies
Meets the university remediation requirement. Introduces strategies that ease transition to college reading and writing. Assists multilingual students with paraphrasing, summarizing, and essay writing; helps them build academic reading strategies. Credit cannot be used toward the linguistics major or minor.
Units: 3
Course Typically Offered: Fall, Spring

LING 10. Introduction to Language
Prerequisite: G.E. Foundation A2. The study of language - including its nature, structure, use, history, and acquisition - with the goal of imparting (1) an understanding of the importance of language in human affairs, including social and cultural functions and (2) an appreciation of its complexity and diversity. G. E. Breadth C2.
Units: 3
Course Typically Offered: Fall, Spring GE Area: C2

LING 11. Linguistics for Teachers
Open to liberal studies majors only. Prerequisite: G.E. Foundation A2. Basic linguistic analysis methods, introducing the subjects of phonetics, phonology, morphology, syntax and semantics exemplified by English and other languages. This class meets the linguistic educational needs of K-6 teachers as mandated by state policy.
Units: 3
Course Typically Offered: Fall, Spring

LING 30. Language through the Lifespan
Units: 3
LING 40T. Topics in Linguistics
Topics to be offered at the discretion of the department.
Units: 1-4

LING 100. General Linguistics
Linguistics methodology: phonology, morphology, syntax, and semantic analysis. Language history: variation and change.
Units: 3
Course Typically Offered: Fall, Spring

LING 110W. Advanced Composition for Foreign Students
Prerequisite: C or better in ENGL 10 or ENGL 5B. Review of English usage. Conventions of writing essays and formal research reports. Practice in paraphrasing and summarizing. Writing complex sentences in concise form. Meets the upper-division writing skills requirement.
Units: 3
Course Typically Offered: Fall, Spring

LING 111W. Academic Writing Workshop
Designed to increase language awareness, and focus on punctuation, usage, and the conventions of writing academic prose using style manuals. Credits may not be used toward the linguistics major or minor. Meets the upper-division writing skills requirement for graduation.
Units: 3
Course Typically Offered: Fall, Spring

LING 115. Language, Culture, and Society
Prerequisites: GE Foundation and Breadth Area C. Studies the relationship between language, culture, and thought; cultural traditions and language arts; cultural norms and interactional styles; language and the development of ethnic and national identity; meanings of social variation in language; discourse styles, and social variation in language; discourse styles and social roles/relations. G. E. Integration IC.
Units: 3
Course Typically Offered: Fall, Spring

LING 120. Japanese Language and Culture
Understanding of the Japanese language in relation to the culture and society. Historical and sociocultural background, origin of Japanese, development of writing system, language variation, vocabulary, idioms and proverbs, discourse functions, levels of politeness, male-female speech, and cross-cultural communication. (Formerly LING 14T section)
Units: 3
Course Typically Offered: Fall, Spring

LING 121. Hmong Language, Culture, and Identity
Prerequisites: GE Foundation and Breadth Area D. Studies Hmong language and culture in their various multicultural environments in Asia (China, Southeast Asia) and in the Diaspora (Americas, Europe, Australia). The course takes a comparative approach, examining the various Hmong communities worldwide with the purpose of better understanding the formation of the modern Hmong identity.
Units: 3
Course Typically Offered: Fall, Spring

LING 130. Language and Gender
Prerequisites: G.E. Foundation and Breadth Area C. A critical examination of the relationship between language and gender; sexism in linguistic structure and oral and written discourse; gender-based variation in linguistic norms and practices in different cultures and social groups; and social, educational, and political implications. G.E. Integration IC.
Units: 3
Course Typically Offered: Fall, Spring

LING 132. Linguistics and Reading
Current theory, research, and methods of teaching first and second language reading in English with focus on the linguistic knowledge, language arts and ESL teachers needs. Prerequisites: LING 10 or LING 11 or LING 100 for Senior Liberal Studies students and Child Development Pre-Credential students. No course requisites for Senior Linguistics majors.
Units: 3
Course Typically Offered: Fall, Spring

LING 138. History of the English Language
The changes in English pronunciation, vocabulary, and grammar from its prehistoric roots to its modern-day global diversity through an examination of literary and historical texts and other cultural artifacts. This course satisfies G.E. Integration IC.
Units: 3
GE Area: IC

LING 139. General Phonetics
Prerequisite: LING 100 Introduction to the phonetic properties of human languages; descriptive analysis of the speech sounds in a wide variety of languages; articulatory and acoustic aspects of speech; practice in production, perception, and transcription of speech sounds. Introduction to experimental techniques. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

LING 140T. Topics in Linguistics
Topics to be offered at the discretion of the department.
Units: 1-4
LING 140T. Semantics
Introduction to the logical foundations of natural semantics; logical and semantic relations, logical representations and their interpretations; the nature of reference, inference, and presupposition in natural languages. This topic may not be repeated for credit. (Offered Spring 2020)
Units: 3

LING 140T. Hmong Linguistics and Teaching
Introduces students to the Hmong Linguistics and it applications for teaching. The course focuses on phonetics, phonology, morphology, syntax, semantics, typology & Semiology. Concretely, the study of these sub-fields will be then applied to learning situations such as the phonetics that can enhance the ability to do the phonetic correction for pronunciation improvement. This course will refine students' accurate knowledge of the language & their various teaching applications. (Offered Spring 2020)
Units: 3

LING 141. Teaching English to Speakers of Other Languages
Theories and methods of teaching English to speakers of other languages.
Units: 3
Course Typically Offered: Fall, Spring

LING 142. Phonology
Prerequisite: LING 139 passed with C grade. The sound patterns of human language. Phonemic theory and analytical techniques. Distinctive feature theory and analysis. Major phonological processes and their description.
Units: 3
Course Typically Offered: Fall, Spring

LING 143. Syntax
Prerequisite: LING 100. Theory and practice in the description of grammatical systems. Comparison of approaches. Practical experience with data.
Units: 3
Course Typically Offered: Fall, Spring

LING 144. Discourse Analysis
Prerequisite: LING 100. Basic concepts in the study of discourse, including conversational structure; structure of narrative and expository texts; information flow; differences between spoken and written language and implications for the study of grammar and for language teaching.
Units: 3

LING 145. Historical Linguistics
Prerequisite: LING 100. Explanation of similarities among languages; methods of reconstructing past languages and investigating relationship and grouping among languages. Comparison of approaches to language change.
Units: 3
Course Typically Offered: Spring

LING 146. Practical English Grammar for Language Teachers
English grammar from the perspective of the teacher. Format designed to be compatible with classroom needs of language arts and ESL teachers. By analyzing English structures, students gain confidence in their ability to teach English grammar to ethnically diverse students.
Units: 3
Course Typically Offered: Fall, Spring

LING 147. Bilingualism
Prerequisites: G.E. Foundation and Breadth Area D. Examines bilingualism as an individual and societal phenomenon. Looks at language and identity; bilingual language acquisition and bilingual education. Survey of bilingual and multilingual situations and current issues associated with language diversity in the United States and elsewhere in the world. Multicultural/International M/I.
Units: 3
Course Typically Offered: Fall, Spring

LING 148. Sociolinguistics
Prerequisite: LING 100. Methods of investigation and major findings in the study of the relationship among languages of the world and social class, race, age, sex, and other social subcategories. Political and educational implications. Interaction between linguistic and social factors in linguistic variations.
Units: 3
Course Typically Offered: Fall, Spring

LING 149. Corpus Linguistics
Prerequisite: LING 100. This course will cover the development and use of large language corpora as they are used in theoretical and empirical research in Linguistics. Corpus linguistics is useful for students with interest in ESL, syntax, semantics, computational linguistics, forensic linguistics, language variation, spelling, and reading.
Units: 3

LING 151. Languages of the World
Prerequisite: LING 100. A survey of the linguistic features of the languages and language families of the world with an introduction to sound patterns, word structures, and sentence constructions.
Units: 3
LING 153. Psycholinguistics
Prerequisite: LING 100 or equivalent or permission of instructor. An overview of basic theories and findings in the study of the psychological processes of language use, with a focus on the comprehension, production, acquisition, and representation of language.
Units: 3

LING 154. Field Linguistics
Prerequisite: LING 100. First-hand practice in methods of linguistic data collection, analysis, and presentation.
Units: 3

LING 155. Computer Assisted Language Learning
Prerequisite: LING 100. Current theory, research, and practice in computer-assisted language learning. Some minimal experience in using computers is assumed. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall

LING 165. Language Acquisition
Prerequisite: LING 100. An examination of first and second language acquisition. Overview of current research in the field and implications for areas of applied linguistics, psychology, education, and sociology.
Units: 3
Course Typically Offered: Fall, Spring

LING 171I. Practicum in TESOL
Prerequisite: LING 141 or concurrently. Provides practice in teaching English as a Second Language listening, speaking, reading and writing; includes class visitations, demonstrations and lesson planning. Introduces students to cross-cultural communications issues.
Units: 3
Course Typically Offered: Fall, Spring

LING 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

LING 231T. Seminar in Linguistics
Prerequisite: LING 100 and permission of instructor. Topics to be offered at the discretion of the department.
Units: 3, Repeatable up to 12 units

LING 231T. Seminar in Semantics
Prerequisites: LING 140T (Semantics) and LING 143. An introduction to compositional semantic analysis, using the formal tools of logic. Application of formal methods (such as type theory and lambda abstraction) to the core empirical phenomena of linguistic semantics. Topics include: sets and functions, the semantic types of basic syntactic categories, compositional interpretation, negation, definite and indefinite determiners, quantifiers, scope, relative clauses. (Offered Spring 2020)
Units: 3

LING 232T. Seminar in English Linguistics
Prerequisite: LING 100 and permission of instructor. Topics to be offered at the discretion of the department.
Units: 3, Repeatable up to 12 units

LING 233. Teaching Listening, Speaking & Pronunciation to Speakers of Other Languages
An overview of theory, research and practice in the teaching of listening, speaking and pronunciation in a second language. Topics also include introduction to basic instrumental analysis of speech data in teaching LS pronunciation.
Units: 3

LING 234. Teaching Reading and Writing to Speakers of Other Languages
An overview theory, research, and practice in the teaching and learning of vocabulary, reading, and writing in a second language.
Units: 3

LING 238. Hist Linguistics
Historical survey of scientific ideas, terms, techniques, and theoretical positions in the study of language from ancient time to the present day, including traditional grammar, comparative philology, and modern linguistics. Overview of general scholarly concern and intellectual climate during each period.
Units: 3

LING 239. Phonetics
Prerequisite: LING 100 or consent of instructor. A graduate class on phonetics which provides advanced instruction and entry to the primary literature on two topics: the phonetics of English and acoustic phonetic analysis. No previous phonetics course is assumed of students.
Units: 3

LING 241. Seminar in Teaching English as a Second/Foreign Language
Prerequisite: LING 141. Overview of research, theory, and pedagogy in the field; includes culture, second language acquisition, and professional issues.
Units: 3
LING 242. Seminar in Phonology  
Prerequisite: LING 142. Covers current theories of how to structure sounds and syllables; the relation of sound structure to other parts of the grammar (words, sentences) and to first and second language acquisition. Data from a wide variety of languages.

Units: 3

LING 243. Seminar in Syntax  
Prerequisite: LING 143. Current theories of how sentences are structured; the relation of sentence structure to other part of the grammar (words, meaning) and to first and second language acquisition. Data from a wide variety of languages.

Units: 3

LING 244. Curriculum Design and Classroom Evaluation  
Covers techniques for designing language courses including assessment of needs, formulation of objectives, and evaluation of student learning; includes theory and methods of designing effective instruments for L2 classroom assessment.

Units: 3

LING 245. Seminar in Historical Linguistics  
Prerequisite: LING 145. Contributions of recent work in general linguistics, sociolinguistics, and language acquisition studies to our understanding of diachronic grammar and its reconstruction. Other topics include the insights provided by language variation, language universals and typology, and discourse analysis.

Units: 3

LING 248. Seminar in Sociolinguistics  
Prerequisite: LING 148 or consent of instructor. A critical survey of current research in sociolinguistics; research methodologies; theoretical issues concerning the relationship between linguistics variation and social variables, such as social class, ethnicity, gender, and social relations; bilingualism, multilingualism, world Englishes, and language planning; implications for language teaching. (Formerly LING 231T)

Units: 3

LING 249. Field Methods  
Prerequisite: LING 142 or LING 143 or consent of instructor. First-hand experience in collecting and analyzing linguistic data. Exact nature of data varies by semester and include less well-known languages, children's language, interlanguage, classroom interaction, etc.

Units: 3, Repeatable up to 6 units

LING 251. Seminar in Discourse Analysis  
Prerequisite: LING 144 or permission of instructor. Exploration and analysis of the functional and other linguistic bases for the organization of units larger than the sentence.

Units: 3

LING 252. Seminar in Language Acquisition  
Prerequisite: LING 165. A critical survey of current research in both first and second language acquisition; research methodologies; major theoretical issues in first and second language acquisition; first-hand experience in collecting and analyzing L1 and L2 acquisition data; implications for language teaching.

Units: 3

LING 255. Seminar in Sociolinguistics  
Prerequisite: LING 148 or consent of instructor. A critical survey of current research in sociolinguistics; research methodologies; theoretical issues concerning the relationship between linguistics variation and social variables, such as social class, ethnicity, gender, and social relations; bilingualism, multilingualism, world Englishes, and language planning; implications for language teaching. (Formerly LING 231T)

Units: 3
Cultural heritage of Persian speaking people is also studied with emphasis on poetry as an important cultural expression. G.E. Breadth C2.

Units: 3  
Course Typically Offered: Spring

GE Area: C2

PERS 2A. Intermediate Modern Persian 2A  
Pre-requisite: Persian 1B or consent of professor. First semester intermediate course on modern Persian/focusing on grammar and developing writing, reading, and speaking skills. Cultural heritage of Persian speaking people is also studied with emphasis on Persian contemporary poetry and prose.

Units: 3  
Course Typically Offered: Fall

PERS 2B. Intermediate Modern Persian 2B  
Prerequisite: Good working knowledge of Persian or consent of professor. Second course in Intermediate Persian focusing on developing proficiency in conversational, written, and reading skills. Cultural heritage of Persian speaking world is also studied with emphasis on Persian classical and contemporary poetry and prose.

Units: 3  
Course Typically Offered: Spring

RES 4A. Spelling and Word Formation  
Developing awareness of the systematic nature of English spelling in relation to the sound system and rules for word formation in the language. Mastery of the system rather than word memorization is emphasized.

Units: 1

RES 4B. Vocabulary Development  
Acquiring greater sensitivity to the literal and implied meanings of words, developing an awareness of the processes of word formation in English, and expanding the active vocabulary.

Units: 1

RES 4C. Sentence Structure  
Developing skill in writing clear, mature sentences. Focus is on structure that is, on the alternative ways of phrasing the same idea and the consequences of choosing one alternative and not another. Sentence and phrase expansion, reduction, combination, and rearrangement are emphasized, not traditional grammar.

Units: 1

SKT 10A. Sanskrit  
Introduction to the Sanskrit language and the Devanagari script. Core grammatical structure and vocabulary. Reading of Sanskrit texts. Literary tradition and lifestyle of the speakers of the language, and relationship with Greek, Latin, and Germanic languages.

Units: 3

LIBERAL STUDIES

LS 110WS. Writing in the K-8 Classroom  
Prerequisites: Completion of at least 56 units; Completion of the lower-division writing requirement (G.E. A2). Enrollment limited to Liberal Studies majors. This course explores teaching writing in the K-8 classroom. This course is a writing intensive (W) course. In addition, service-learning (S-L) is an integral component of this course involving at least 20+ hours of work with children and reflections over the course of the semester. Meets the upper-division writing skills requirement for graduation.

Units: 3  
Course Typically Offered: Fall, Spring

UNIV 1. An Introduction to Learning and the University  
Assists students to acquire attitudes and skills needed to be effective lifelong learners. Individual and group activities focus on adaptation to change, study skills, goal setting, time management, career planning, information competence, community engagement, health and wellness. Exposure to campus resources. GE Area E1.

Units: 3  
GE Area: E1

MANAGEMENT

ENTR 81. Introduction to Entrepreneurship  
Develops an understanding of the complex tasks faced by individuals engaged in entrepreneurial activities. Identifies the methods for developing a business idea, the process of starting a business, how to acquire resources, and the key parts of a business plan. (Formerly MGT 81)

Units: 3  
Course Typically Offered: Fall, Spring

ENTR 151. Opportunity Assessment  
Presents tools and techniques for evaluation and assessment of opportunities for new businesses are presented. Idea assessment, market and competitive analysis, trends, distribution systems and customer needs are evaluated to determine if launching a business is feasible. Assessments will be made across industries including retail, manufacturing, distribution, services, and technology. The course provides the foundation for writing a business plan.

Units: 3
ENTR 153. Business Plan Model
Prerequisite: ENTR 81, with a B or better; ENTR 151; MGT 110. Provides the student with both (1) an understanding of what is required to launch a new firm and (2) the skills needed to craft a business model that will meet the standards for attracting funding by an investor or financial institution. (Formerly MGT 153)
Units: 3
Course Typically Offered: Fall, Spring

ENTR 155. Managing the New Venture
Prerequisite: ENTR 81 and ENTR 153. Special problems of small businesses: initiation, financing, operations. Class projects: studying local business operations; preparing business plans and financial requests. (Formerly MGT 155)
Units: 3

ENTR 157. New Venture Laboratory
Prerequisites: ENTR 151, ENTR 153. Students develop a business idea that results in a business plan. In a laboratory setting, students interact with entrepreneurs, suppliers, customers, and experts in order to create a new venture that may become viable. (Formerly MGT 157)
Units: 3
Course Typically Offered: Spring

ENTR 161. Urban Entrepreneurship
Prerequisites: ENTR 81. Urban environments have their own special planning, psychology, economics, design and politics. Opportunities abound, but require a different skill set for the entrepreneur. Students will participate in urban space, identify opportunities, and develop projects that may lead to successful launches of new enterprises. Presentation of a business concept for urban space will conclude the course.
Units: 3

ENTR 163. Social Entrepreneurship
Explores current thoughts, and trends, and challenges in the emerging field of social entrepreneurship. Guest lectures and site visits. (Formerly INOV 191T)
Units: 3
Course Typically Offered: Fall

ENTR 165. Corporate Entrepreneurship
Prerequisite: ENTR 81. This course is about entrepreneurship in established companies, or entrepreneurship. The course will address the emerging theories and practices of entrepreneurship and apply them to a corporate setting. Issues of how to establish corporate entrepreneurial vision, strategy, and direction are presented. Methods for relating entrepreneurship to other functions such as human resource management, new product development, research and development, and corporate venturing are discussed.
Units: 3

ENTR 167. Franchising
Prerequisite: ENTR 81. Students examine franchising from both the franchisor and franchisee perspectives. Topics include the evaluation of franchising opportunities, legal concerns of franchising, the development of appropriate franchising strategies, and the successful planning, implementation, and launching of franchise networks and franchised outlets. (Formerly ENTR 189T)
Units: 3

ENTR 169. Family Business Management
Prerequisite: ENTR 81. The course addresses aspects of managing an established family business, on a day-to-day basis and planning for succession to the next generation.
Units: 3

ENTR 189T. Topics in Entrepreneurship
Studies in entrepreneurship, business plan writing, and problems in small business management.
Units: 1-3

ENTR 189T. Entrepreneurship Mentor Program II
Helps students build on the skills introduced in the first semester through the use of seminars, matching with a community leader, workshops, field trips, and events. The class culminates in presentation given by student regarding the entrepreneurship skills developed over both semesters. (Offered Spring 2020)
Units: 2

ENTR 189T. Entrepreneurship Mentor Program
Provides students with significant building of entrepreneurial skills through seminars, matching with a community leader, workshops, field trips, and events. (Offered Fall 2019 and Spring 2020)
Units: 2

ENTR 190. Independent Study
See Academic Placement -- Independent Study. Approved for SP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

ENTR 193. Supv Work Exper
Units: 1

ENTR 195I. Internship
Prerequisites: permission of internship coordinator. Requires 150 hours of work at a pre-qualified, academically related
work station (business, government, or nonprofit agency). Reflective journal, final report, and work station evaluation. Prior department approval is required for course substitutions. Only one internship may count toward option requirements. CR/NC grading only.

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

HRM 150. Administration of Personnel
Prerequisites: MGT 110, and BA 105W or ENGL 160W (may be taken concurrently). Composition of labor force; acquisition and utilization of human resources; recruitment; selection; performance appraisal; motivation; compensation; communications; social issues and government influence. Individual and group projects; written and oral reports.

Units: 3
Course Typically Offered: Fall, Spring

HRM 152. Labor Relations and Collective Bargaining
Prerequisite: HRM 150, MGT 110 and BA 105W or ENGL 160W. Relations between employers and organized employee groups; organization, election, and certification procedures; techniques of collective bargaining; labor agreements; grievance handlings; settlement of industrial disputes. Class discussion, student presentations.

Units: 3
Course Typically Offered: Fall, Spring

HRM 153. The Staffing of Organizations
Prerequisite: HRM 150, MGT 110 and BA 105W or ENGL 160W. In-depth study of major staffing issues such as recruitment and selection of employees. Emphasis on practical application of issues for future managers and HRM professionals. Group projects, class discussion, guest lecturers, and experimental exercises.

Units: 3
Course Typically Offered: Fall

HRM 154. Compensation Systems and Performance Management
Prerequisite: HRM 150, MGT 110 and BA 105W or ENGL 160W (non-business majors only). This course provides a theoretical basis for understanding compensation and other reward systems, with particular emphasis on the psychological, economic, and strategic aspects of total reward systems and performance management. Reward practices and principles are learned through a series of hands-on exercises.

Units: 3
Course Typically Offered: Fall, Spring

HRM 157. Legal Aspects of Human Resource Management
Prerequisite: HRM 150, MGT 110 and BA 105W or ENGL 160W. Survey of law related to employment, including discrimination, wrongful discharge, safety and health requirements, and other government regulations. Attention given to prevention and resolution of legal complaints and to emerging public issues. Oral presentations, discussions.

Units: 3
Course Typically Offered: Fall, Spring

HRM 159. Seminar in Human Resource Management
Prerequisites: last-semester senior status; HRM150, BA 105W or ENGL 160W, and completion of at least three of the following classes: HRM 152, HRM 153, HRM 154, HRM 157. Integration of human resource management knowledge. Case analysis and discussion. Students will be required to take the PHR certification exam and to independently pay a mandatory test fee.

Units: 3

HRM 176. Introduction to Industrial-Organizational Psychology
Prerequisites: Students enrolled in HRM 176 must be declared business majors and have completed DS 123 or be concurrently enrolled. Introduction to the scientific study of human behavior in the workplace. Application of psychological principles and methodology to improve individual and organizational well-being including assessment, selection, fairness, work motivation, job attitudes, stress, and work-life balance. Emphasis placed on scientist-practitioner model.

Units: 3
Course Typically Offered: Fall, Spring

HRM 189T. Topics in Human Resource Management
Prerequisite: senior standing. Studies in personnel and labor relations, recruitment, selection, retention, compensation, employment law, and business ethics.

Units: 1-3

HRM 189T. Training and Development
This course is designed to examine theories, concepts, and processes of human resource training and development in modern organizations to strategically meet current and future needs. Emphasis is placed on gaining knowledge and skills needed to design, implement, and evaluate training and development efforts using a variety of methods. (Offered Fall 2019 and Spring 2020)

Units: 3

HRM 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

HRM 195I. Internship
Prerequisite: permission of internship coordinator. Requires 150 hours of work at a pre-qualified, academically-related work station (business, government or nonprofit agency).
Reflective journal, final report, and work station evaluation. As a course substitution, prior department approval is required. Only one internship may count toward option requirements. CR/NC grading only.

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

**MGT 104. Administrative Principles of Management**
Prerequisite: BA 105W or ENGL 160W (may be taken concurrently). Not open to students with credit in MGT 110. Business majors need department consent to take this course. Focus on planning techniques, organization theory, and ethical control processes in domestic and international business. Case analysis, management simulations, and written projects.

Units: 3
Course Typically Offered: Fall, Spring

**MGT 106. Behavioral Principles of Management**
Prerequisite: BA 105W or ENGL 160W (may be taken concurrently). Not open to students with credit in MGT 110. Business majors need department consent to take this course. Focus upon the human dimensions and interpersonal skills of management, including motivation, job design, leadership, conflict, communication networks, and organizational change. Case analysis, written projects, small group exercises, and development of communication and interpersonal skills.

Units: 3

**MGT 110. Administration and Organizational Behavior**
Prerequisite: BA 105W or ENGL 160W (or concurrently). Not open to students with credit in MGT 104 or MGT 106. Development of management skills with emphasis on organization, communication networks, leadership, reward systems, conflict management, change, ethics, and stress. Case analysis, written projects, small group exercises. (3 unit lecture; 3 unit lab)

Units: 6
Course Typically Offered: Fall, Spring

**MGT 124. Production/Operations Management**
Prerequisites: DS 123 (may be taken concurrently); BA 105W or ENGL 160W; MGT 110. Production/operations systems and problems in manufacturing and service organizations, including product development and process selection; facility location and design; operations planning and control; materials handling; inventory and quality control; project management. Lecture discussion; computer simulation.

Units: 4
Course Typically Offered: Fall, Spring

**MGT 127. Contemporary Leadership**
Prerequisites: MGT 110 and BA 105W or ENGL 160W (may be taken concurrently). Individual and team leadership development. Leadership potential assessment, contemporary leadership theories, and oral and written communications skill development. Guest speakers, experiential exercises, and case studies.

Units: 3

**MGT 131. International Management**
Prerequisites: MGT 110. A review of the unique issues, problems, and challenges of managing enterprises in an international environment. Comparative analysis of management styles and cultures, managerial processes and strategy formulation. Focuses on American, European, and Japanese enterprises. Seminar discussion and cases.

Units: 3
Course Typically Offered: Fall, Spring

**MGT 133S. Managing Nonprofit and Socially Responsible, Sustainable Organizations**
Prerequisites: MGT 104 and MGT 106, or MGT 110 and BA 105W or ENGL 160W (may be taken concurrently). Examination and analysis of the critical features of nonprofit and socially responsible, sustainable organizations in the private sector. Topics include ethics issues in management, governance, managing and motivating volunteers and employees in nonprofit context, sustainability approaches and practices. Lecture, case studies, field experience, and research.

Units: 3
Course Typically Offered: Fall, Spring

**MGT 158. Project Management**
(Same as IS 186.) Fundamental concepts and techniques addressing all phases, process groups, and knowledge areas in the Project Management Body of Knowledge; software tools for planning, scheduling, and control of projects; satisfies education requirements for Project Management Institute PMP and CAPM certifications. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

**MGT 180. Seminar in Management Theory and Organization Design**
Prerequisites: MGT 110 and BA 105W or ENGL 160W (may be taken concurrently). Organizations as open systems functioning in the external environment; organization development as a planned intervention emphasizing effective implementation of system changes, integrating mechanisms in response to perceived contingencies; and strategic issues of organizational life cycles.

Units: 3
Course Typically Offered: Fall, Spring

**MGT 182. Seminar in Applied Conflict Management Techniques**
Prerequisites: MGT 110 and BA 105W or ENGL 160W (may be taken concurrently). Sources of conflicts and how to resolve them in
organizations; theory and practice of negotiation, alternative conflict resolution techniques, mediation, employee voice, and employee deviance. Experiential exercises and case analyses will be used to enhance the application of the course material.

Units: 3

MGT 187. Seminar in Strategic Management
Prerequisites: last-semester senior, completion of CSB core requirements (only MGT 124 may be taken concurrently); and BA 105W or ENGL 160W. Focuses on strategic management, industry analysis, global competitive environment, formulation and implementation of strategy, ethical issues, mergers and acquisitions, and management of strategic alliances. Case analysis/computer simulations included.

Units: 3
Course Typically Offered: Fall, Spring

MGT 189T. Topics in Management
Prerequisite: senior standing. Studies in management, organizational theory, organizational behavior, production, transportation, business administration, special management and organizational problems.

Units: 1-3

MGT 189T. Productions Operations Mgt Lab
Prerequisite: Concurrent enrollment in MGT 124. MGT 189T is not required for MGT 124. Extends instruction in MGT 124, providing two hours of additional instructional support per week. One-on-one tutoring and small group instruction relating to MGT 124 curriculum. CR/NC grading only. (Does not apply to major) (Offered Fall 2019 and Spring 2020)

Units: 1

MGT 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

MGT 195I. Internship
Prerequisite: permission of internship coordinator. Requires 150 hours of work at a pre-qualified, academically-related work station (business, government or nonprofit agency). Reflective journal, final report, and work station evaluation. Prior department approval is required for course substitutions. Only one internship may count toward option requirements. CR/NC grading only.

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

MARKETING & LOGISTICS

FM 20. Textile Science

Units: 3

FM 21. Fashion Merchandising Fundamentals
Introduction to Fashion Merchandising with an overview of fashion products and the merchandising system.

Units: 3

FM 120. Social and Psychological Aspects of Clothing
The psychological, social, and economic aspects of clothing related to the individual, family, and society.

Units: 3

FM 122T. Topics in Clothing and Textiles
Topics relating to clothing, textiles, and fashion merchandising. Some topics may have labs.

Units: 1-4

FM 123. Fashion Analysis
Prerequisite: At least Junior status. Analysis of the characteristics and nature of fashion: color, line, texture, production and principles of design applied to fashion apparel. Investigation of methods in which these factors affect product pricing and consumer decision making. Quality evaluation of apparel is included.

Units: 3

FM 124. Textile Finishing
Prerequisite: FM 20. Finishing, dyeing and printing techniques, material and equipment. Evaluation through standard laboratory tests. (2 lecture, 2 lab hours)

Units: 3

FM 126. History of Costume
Important periods of costume; their relationship to political, social, and economic conditions of the times and their importance in evolution and inspiration of modern dress.

Units: 3

FM 127. Fashion Merchandising
Prerequisite: FM 21 or permission of instructor; ACCT 3 or ACCT 4A (recommended). Principles of fashion merchandising as applied in manufacturing and retailing business organizations; study of planning, developing, and presenting product lines. (2 lecture, 2 lab hours)
FM 128. Visual Merchandising
Prerequisite: FM 21 (may be taken concurrently). Aspects of visual merchandising and display, from classic techniques to most recent developments. Design fundamentals applied to the aesthetic arrangement of promotional and institutional displays in the retail store. (2 lecture, 2 lab hours)
Units: 3

FM 130. Fashion Study Tours
An in-depth study of industrial, retail, and wholesale sites in California. Field experiences are included to ensure optimum learning opportunities. (1 lecture, 4 lab hours) (Course fee, $250)
Units: 3

FM 133. Textile/Apparel Economics
Prerequisites: FM 20 (may be taken concurrently); ECON 40 or AGBS 1. Organization and development of the textile and apparel industries. Aspects of production, consumption, and international trade. Analysis of current problems facing the industry and industry's response.
Units: 3

FM 134. Fashion Retail Buying
Prerequisite: G.E. Math; FM 127 or permission of instructor. Basic principles and applications of retail mathematics as related to fashion retailing. Focuses on quantitative concepts used in merchandising fashion goods with an emphasis on profitability.
Units: 3

FM 140. Fashion Entrepreneurship
Prerequisites: FM 20, FM 21, and FM 127; Senior standing for Fashion Merchandising majors or permission of instructor. Applying entrepreneurship principles to fashion apparel and accessories, from identifying new enterprise opportunities to analyzing the feasibility of business ideas by in-depth analysis of fashion consumers, markets, and merchandising strategies.
Units: 3

FM 190. Fashion Merchandising Independent Study
Prerequisites: MKTG 100S, FM 127 and BA 105W or ENGL 160W and Junior status. Independent study is offered to give students experience in planning and outlining a course of study on their own initiative under departmental faculty supervision. Course of study will deal with a special interest not covered in a regular course or with the exploration in greater depth of a subject presented in a regular course.
Units: 1

FM 195I. Fashion Merchandising Internship
Prerequisite: Approval from Internship Director. An academic internship experience provides the student with the ability to blend previous classroom experience with business career opportunities. The internship course will require a minimum of 150 documented hours at a pre-qualified worksite and completion of all academic assignments. Successful students will gain an awareness of skill levels needed in the current workforce and uncover areas of future development areas.
Units: 3

MKTG 100. Marketing Concepts
Recommended for first semester juniors. Prerequisite or corequisite: BA 105W or ENGL 160W. Learn how marketing activities such as pricing, promotion, packaging, and distributing goods and services in international, national, profit, not-for-profit, service, consumer, and industrial markets are used to facilitate satisfaction of consumer needs. S sections include a service-learning requirement (see Students for Community Service.)
Units: 4

MKTG 100S. Marketing Concepts
Recommended for first semester juniors. Prerequisite or corequisite: BA 105W or ENGL 160W. Learn how marketing activities such as pricing, promotion, packaging, and distributing goods and services in international, national, profit, not-for-profit, service, consumer, and industrial markets are used to facilitate satisfaction of consumer needs. S sections include a service-learning requirement. Multicultural/International M/I.
Units: 4

Course Typically Offered: Fall, Spring

MKTG 101. Marketing Research
Recommended early in the Marketing Option. Prerequisite: grade of C or better in MKTG 100S. Examination of the role of marketing research in management decision making, using the Internet as a source of information and as a marketing tool. Also covers the marketing research process, including questionnaire development, surveys, and how to understand and use statistical data analysis.
Units: 4

Course Typically Offered: Fall, Spring

MKTG 110. Consumer Behavior
Prerequisite: A grade of C or better in MKTG 100S. Understanding of consumer (individual and industrial) behavior in the marketplace. Theories from sociology, anthropology, economics, and psychology are applied to behavior in the market place. This understanding is then translated into more effective marketing strategy and tactics.
Units: 4
MKTG 114. Principles of Logistics and Supply Chain
Prerequisite: A grade of C or better in MKTG 100S. Analyzes how firms utilize collaborative distribution intermediaries to gain a competitive advantage in local and global markets through integration of Logistics and SCM. Examines the management of the physical flow of products and information throughout the entire supply chain. Other topics: plant and warehouse location analysis, transportation, fleet, warehousing and storage management.
Units: 4
Course Typically Offered: Fall, Spring

MKTG 115. Global Logistics and Supply Chain Strategies
Prerequisite: A grade of C or better in MKTG 100S. Operating, controlling, and evaluating an integrated logistics and supply chain management-oriented channel structures for globally competitive environment. Customer Service and CRM, security and privacy. Inbound and outbound traffic management. Export/import logistics and procedures, introduction and demonstration of ERP (e.g., SAP, Oracle/PeopleSoft, JD Edwards, and Microsoft Dynamics supply-chain Management softwares).
Units: 4

MKTG 126. Purchasing and Materials Management
Prerequisite: A grade of C or better in MKTG 100S. Purchasing and supply chain management planning, policies, and procedures; purchasing organization; sources of supply, pricing; contract negotiation; value analysis; traffic management; quality assurance; inventory management; public purchasing; and legal and ethical aspects of purchasing.
Units: 4

MKTG 130. Retail Managing and Merchandising
Prerequisite: A grade of C or better in MKTG 100S. Location, price, and promotion topics are enhanced with the buying and merchandising process, including buying planned stocks, style merchandising, and accounting and controlling systems.
Units: 4
Course Typically Offered: Fall

MKTG 132. Promotion Mix: Principles and Practices
Prerequisite: A grade of C or better in MKTG 100S. The focus is on promotion as a communications process and the intergration of promotional elements into the total strategy of the firm. Students examine what makes promotions work, when and where to promote, and how promotions utilize data from the Marketing Information System.
Units: 4

MKTG 134. Entrepreneurial Marketing
Prerequisite: A grade of C or better in MKTG 100S. A practical look at building a marketing plan for the person or firm interested in the development of a new product or service. A key element of the course is a project; students build a detailed plan to solve marketing-related problems a business faces, whether old or new.
Units: 4

MKTG 140. Global Marketing
Prerequisite: A grade of C or better in MKTG 100S. (BA 174 required for International Business Option only.) Examination and evaluation of business policies and practices of firms engaged in world trade; the marketing area; organization, product, channels of distribution, marketing research, demand creation and other management problems.
Units: 4
Course Typically Offered: Spring

MKTG 144. Services Marketing
Prerequisites: A grade of C or better in MKTG 100S. Service strategies in industries representing 75 percent overwhelming majority of the national job market, including telecommunications, healthcare, financial services, fine arts, professional services, distribution, entertainment, and not-for-profit organizations. Emphasis is on the distinctive approach necessary for successful long-term marketing of services.
Units: 4

MKTG 150. Sports Marketing
Prerequisite: A grade of C or better in MKTG 100S. Development and application of marketing strategies in sports and sports-related industries. Focuses on research, segmentation, product development, pricing, sponsorships, consumer behavior, licensing, branding, and promotions in sports venues. A key element of the course is a comprehensive group project.
Units: 3
Course Typically Offered: Fall, Spring

MKTG 153. E-Marketing Technologies and Social Media
Prerequisites: A grade of C or better in MKTG 100S or MKTG 90. Marketing products and services using current internet technologies. Developing e-product, e-price, e-promotion, e-place strategies, e-marketing plan, and organization websites.
Units: 4

MKTG 160. Professional Selling & Sales Force Management
Prerequisite: A grade of C or better in MKTG 100S. Persuasion tools to cultivate ideas and sell products/services; modern behavioral techniques to build a productive sales force.
Personal marketing: presentation skills, resume creation, and job interview strategies. (Formerly MKTG 103).

Units: 4

MKTG 161. Sports Licensing, Sponsorship, and Promotion
Promotional practices used in the field of Sports Marketing: licensing, sports sponsorships, sports selling, and the use of social media as a sports promotional tool.

Units: 4

MKTG 162. Healthcare Marketing
Introduction to the principles and practices associated with marketing's role in the healthcare industry. Evaluation and implementation of marketing strategies within healthcare and managed-care environments.

Units: 2

MKTG 163. Political Marketing
Marketing strategies used in the U.S. political arena: campaign strategy, spending regulations, fundraising, press relations, various communication delivery systems, promotions, media usage, and candidates' image development and positioning.

Units: 2

MKTG 164. Profitability and Pricing
The role of marketing in price determination and the critical impact that pricing has on profitability and product success. New product pricing, competitor price analysis, global pricing strategies, and legal considerations.

Units: 2

MKTG 165. Marketing to the Base of the Pyramid
Market characteristics, challenges, and business model for low income markets. Developing the market and improving quality of life by leveraging technologies, co-creating products, and using microfinance.

Units: 2

MKTG 166. Principles and Practices of Branding
Branding in business and business to consumer environments; value and benefits of brands; key elements/methodologies required to create and maintain strong brands and to protect brand assets.

Units: 2

MKTG 167. Environmental Sustainability & Marketing
Subtle interrelations of regulations, technological innovations, policies, organizational and consumer behaviors in the pursuit of environmental sustainability; perspectives, meaning, goals, and assessment of sustainability; role of marketing in environmental sustainability.

Units: 2

MKTG 188. Strategic Planning in Marketing
Prerequisites: MKTG 101 and MGT 124 (both can be taken concurrently); senior standing. Integration of marketing with other functional areas of business. Focus is on strategic planning process and procedures leading to development of marketing plans, including financial analysis and budgeting. Must be taken at Fresno State.

Units: 4
Course Typically Offered: Fall, Spring

MKTG 189T. Topics in Marketing
Prerequisite: senior standing or permission of instructor. Topics in advertising, consumer behavior, distribution, industrial procurement, marketing research, retailing, wholesaling.

Units: 1-3

MKTG 190. Independent Study
See Academic Placement --Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

MKTG 195I. Internship
Prerequisite: MKTG 100S. Requires 150 hours of work at a pre-qualified, academically-related work station. When completing more than one internship for credit, students are required to do so in different sectors (business, government or nonprofit.) Reflective journal, final report, and work station evaluation. CR/NC grading only.

Units: 3
Course Typically Offered: Fall, Spring

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MEDIA, COMM AND JOURNALISM

MCJ 1. Mass Communication and Society
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Examines the political, economic, cultural, and behavioral impacts of mass media in national and international contexts. Analyzes the historical factors that have shaped the structures, practices, and products of mass media industries, and assesses contemporary trends in media-society relations. G.E. Breadth D3.

Units: 3
Course Typically Offered: Fall, Spring

GE Area: D3

MCJ 2. Media Writing
Study and practice in the basics of good writing. Emphases will be placed upon grammar, factual accuracy, clarity, conciseness, media styles, fairness, human interest, and writing to length and deadline. (Formerly MCJ 10) (2 lecture, 2 lab hours)
MCJ 3. Introduction to Multimedia Production
Fundamentals of multimedia production. Exploration of cross media storytelling using text, graphics, audio, video, and the Web. (Formerly MCJ 30) (2 lecture, 2 lab hours).
Units: 3
Course Typically Offered: Fall, Spring

MCJ 5. Grammar for Media and Communication Professionals
Application of basic language skills to media writing and Editing. Recommended for all majors.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 9. Film Appreciation
Units: 3
Course Typically Offered: Fall, Spring

GE Area: C1

MCJ 13. Introduction to Studio Video Production
Pre-requisites: MCJ 3 or permission of instructor. Introductory television studio production principles and techniques. Design and execution of multi-camera video productions. (2 lecture, 3 lab hours).
Units: 3
Course Typically Offered: Fall, Spring

MCJ 15. Introduction to Field Video Production
Prerequisite: MCJ 3 or permission of instructor. Introduction to field video production and post-production principles and techniques in visual storytelling. Execution of field video projects. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

MCJ 17. Photojournalism
Introduction to the theory and practice of photojournalism. Study of the characteristics and role of the journalistic photograph in news communications. Lectures and laboratory Practical experiences in the use of digital still cameras and basic digital production techniques. (2 lecture, 2 lab hours)
Units: 3

MCJ 40. Introduction to Advertising and Public Relations
This course provides a broad overview of the advertising and public relations industries. Topics covered include a brief history of both fields, their relationship to businesses, institutions, organizations, and the economy in general, as well as role of the social sciences in both. Ethical considerations in both fields are emphasized.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 60. Introduction to Film Studies
An introductory course to the critical study of film. The class will examine the formal elements of cinema, the ways in which filmmaking has developed as an art form, and how film has been produced and received as a cultural artifact.
Units: 3

MCJ 70. Media Theory
This class examines the history, development, elements of prominent mass communication, journalism and media theories and their application in the field.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 102W. Reporting
Prerequisites: MCJ 2. Analysis of news sources; techniques of interviewing applied to specific reporting situations; coverage of campus and community functions in the preparation of articles for the media. Meets the upper-division writing skills requirement for graduation. (2 lecture, 2 lab hours).
Units: 3
Course Typically Offered: Fall, Spring

MCJ 104. Editing for Digital Journalism
Prerequisites: MCJ 2. Preparation of copy, headlines, and photos for newspapers and other publications; advanced concepts of grammar and style; legal and ethical issues of publications; basic publications layout and graphic design. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

MCJ 105. News Practicum
Prerequisites: MCJ 10, MCJ 30, or permission of instructor. Practice in editorial leadership, writing and editing development of multimedia content, and Campus newspaper production techniques. Department newspaper used for laboratory purposes. (1 lecture, 4 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

MCJ 106. Publication Design
Survey, design, and editing of specialized publications such as newsletters, brochures, and other materials for editorial, advertising, and public relations purposes. Emphasis on computerized production techniques. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

MCJ 107. Data Journalism
Prerequisite: MCJ 2. This course will provide students with the tools needed to find data, show them how to distinguish good data from misleading data, teach them how to properly use data in their reporting and writing, and how to visualize the data. (2 lecture, 2 lab hours).
Units: 3

MCJ 108. Public Affairs Reporting
Prerequisites: MCJ 2, MCJ 102W or permission of instructor. Advanced reporting for the media with emphasis on public affairs journalism. (2 lecture, 2 lab hours)
Units: 3

Course Typically Offered: Fall, Spring

MCJ 109. Law and Order Reporting
Prerequisite: MCJ 3, to be taken no sooner than the term in which 60 units of coursework are completed. Instruction and practice in how to cover and write about the criminal justice system. Techniques of interviewing applied to specific reporting situations; coverage of criminal justice events; and instruction in various criminal justice principles will be included in the course. (2 lecture, 2 lab hours)
Units: 3

Course Typically Offered: Fall, Spring

MCJ 110. Scriptwriting for Media
Prerequisites: MCJ 2 and MCJ 3. Theory and practice of story development and scriptwriting for fiction and non-fiction film and video, including narrative film, documentary, business and sponsored video. Explores research, story structure, treatments, proposals, script formats and the use of interview, narration and dialog. (2 lecture, 2 lab hours)
Units: 3

Course Typically Offered: Fall, Spring

MCJ 112. Audio Production
Prerequisite: MCJ 30. Introduction to the art of audio storytelling and basic digital audio production techniques. Design and execution of audio-based projects. (2 lecture, 2 lab hours)
Units: 3

Course Typically Offered: Fall

MCJ 113. Advanced Television Studio Production
Prerequisite: MCJ 13 or permission of instructor. Advanced television studio production principles and techniques. Design and execution of multi-camera video productions. (2 lecture, 3 lab hours)
Units: 3

Course Typically Offered: Fall

MCJ 114W. Screenwriting
Prerequisites: MCJ 110 or permission of the instructor. An advanced course in the theory and practice of screenwriting for longer format narrative projects. Students will develop feature-length screenplays or pilot scripts for an episodic series. Meets the upper-division writing skills requirement for graduation. (2 lecture, 2 lab hours).
Units: 3

MCJ 115. Field Video Production
Prerequisite: MCJ 15. Field video production and post-production principles and techniques used in visual storytelling. Lecture and laboratory experiences in visual storytelling, story development, single-camera filmmaking, pre-production planning, production execution, post-production, and digital distribution techniques. Field assignments required. (2 lecture, 2 lab hours)
Units: 3

Course Typically Offered: Fall

MCJ 116. Documentary Film and Video Production
Prerequisites: MCJ 110, 115. Exploration of key concepts of non-fiction visual storytelling techniques and practice using a single camera approach. Projects are intended for public distribution. (1 lecture, 4 lab hours)
Units: 3

Course Typically Offered: Fall

MCJ 117. Narrative Filmmaking
Prerequisites: MCJ 15 and 110. Exploration of narrative filmmaking and the creative techniques and aesthetics common to producing a dramatic story in the single-camera film style. Analysis of film genres, visual storytelling and sound design of classic and contemporary cinema. Laboratory and field experiences in producing film projects. (1 lecture, 4 lab hours)
Units: 3

MCJ 118S. Corporate and Nonprofit Media Projects
Prerequisites: MCJ 30 and MCJ 115. Advanced study of the planning, organization, and execution of media production techniques for informational and educational communications projects for corporations and nonprofits; a service learning approach provides practical experience working in production teams with clients. (2 lecture, 2 lab hours)
Units: 3

Course Typically Offered: Fall

MCJ 120. Multimedia Production Studio Practicum
Prerequisites: MCJ 30. Supervised professional practice in producing media for clients and operation of media production facilities. Provides experience in production planning and management, field and studio production, post-production,
and providing production services and technical assistance to students, faculty, and members of the public. 1-3 units, repeatable up to 6 units maximum.

Units: 1-3
Course Typically Offered: Fall, Spring

MCJ 121. News Video Production
Prerequisite: MCJ 3 or permission of instructor. News & nonfiction video production and post-production principles and techniques in visual storytelling. This will include single-camera videography, pre-production planning, production execution, post-production, graphics, and multimedia techniques for news. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

MCJ 123. Fresno State Focus Crew
Prerequisite: MCJ 3 or permission of instructor. Advanced Production crew for Fresno State Focus newscasts; as newscast director, technical director, floor director, graphics operator, and audio engineer. (1 lecture, 6 lab hours)

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

MCJ 124. Intermediate Broadcast News Writing
Prerequisites: MCJ 2. Gathering, writing, and editing news for distribution by broadcast and online news media. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

MCJ 125. Radio Reporting and Podcasting
Prerequisites: MCJ 2. Basics of radio news: gathering, writing, editing, and producing news reports and features and anchoring newscasts for campus radio station KFSR and streaming online. (Formerly MCJ 177T) (2 lecture, 2 lab hours)

Units: 3

MCJ 126. Media Performance
Studio performance training for television and radio; exercises for improving articulation, pronunciation, interpretation, vocal quality, interview techniques, and on-camera performance. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall

MCJ 128. TV/Multimedia News Reporting and Production
Prerequisites: MCJ 3, MCJ 124, MCJ 126 and MCJ 121 or permission of instructor. Practical experience in multiplatform news producing, reporting, and anchoring intended for broadcast, cable, mobile and online distribution. Lecture and lab experiences focus on all aspects of news production including news editorial, field video, multimedia, online, mobile and TV studio production. Capstone course. (1 lecture, 9 lab hours)

Units: 4, Repeatable up to 8 units
Course Typically Offered: Spring

MCJ 129. Global Campus Studio
Prerequisite: MCJ 2 or permission of instructor. This course covers a wide range of aspects of international reporting through reading, lectures, class discussion, multimedia projects and collaboration with students at universities in Canada, Europe, the Middle East and Asia. (Formerly MCJ 177T) (2 lecture, 2 lab hours)

Units: 3

MCJ 131S. Online Media Design
Prerequisites: MCJ 30, MCJ 106 and MCJ 115, or permission of instructor. Fundamentals of multimedia storytelling and online media design. Production of multimedia packages for online distribution that incorporate text, graphics, images, audio, and video. A service learning approach provides practical experience working in production teams with Community Benefit Organizations (CBOs) (see Community Engagement and Service Learning in the General Catalog). (2 lecture, 2 lab hours)

Units: 3

MCJ 136. Media Projects
Prerequisites: MCJ 110; and 112, 113, or 115; or permission of instructor. This advanced production course will provide laboratory experiences in the design and execution of large-scale semester-long media projects that may be audio, video, film or multi-camera focused. Projects are intended for public distribution and professional portfolio building.

Units: 1-3
Course Typically Offered: Fall

MCJ 142. Advertising Procedures
Overview of all aspects of the field of advertising. Study of history, agent-client relationships, media, relationship to the behavioral sciences, production of copy and layouts, and advertising legislation and responsibility.

Units: 3
Course Typically Offered: Fall, Spring

MCJ 143. Advertising Sales
Prerequisite: MCJ 142. Advertising sales, account service, and account management for today's competitive marketplace; practical experience selling, creating, and producing advertisements for campus media operations. Practical experience working with "real world" clients. (2 lecture, 2 lab hours)

Units: 3, Repeatable up to 6 units
MCJ 144. Advertising Copy Writing
Prerequisites: MCJ 2, MCJ 142. Develops print and broadcast copy writing for magazine, direct mail, outdoor, newspaper, radio, television, and new advertising media. Examines the role of the copy writer, creative strategies, research target marketing, copy styles, and laws regulating advertising.
Units: 3
Course Typically Offered: Spring

MCJ 146. Advertising Media
Prerequisite: MCJ 142. Media planning and buying for advertising media. Evaluating and selecting media to meet specific marketing and communication goals; designing specific media plans and making buys in various media.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 148. Advertising Campaigns
Prerequisites: MCJ 142 and MCJ 144 or MCJ 146. Background, research, planning, and preparation of a national and local advertising campaign as advertising agency with client-agency set-up; marketing plan and creative execution. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

MCJ 149. Advertising and Public Relations Campaigns
Prerequisites: MCJ 2, MCJ 40, MCJ 158S or MCJ 144. Student teams plan a public relations and advertising campaign. Covers use of research findings, setting measurable objectives, identifying key publics, defining strategies, setting budgets, and evaluating results. Course includes analyses of real-world campaigns used to solve public relations problems.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 152S. Fundamentals of Public Relations
Fundamentals of the public relations field — its principles, ethical values, and methods; as well as its application in business, non-profit, education, and other areas. No previous courses or qualifying exams are required.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 157. Public Relations Agency Practicum
Prerequisite: MCJ 152S. This course will provide students with an in-depth and hands-on exploration into the creation of public relations products for "real world" clients and the management of a public relations agency.
Units: 3, Repeatable up to 6 units

MCJ 158S. Public Relations Writing
Prerequisites: MCJ 10, MCJ 152S. Writing and creating messages tailored to multiple audiences via a range of media; including traditional and social media, as well as organizational media such as websites. Includes real world writing for service-learning clients. (2 lecture, 2 lab hours)
Units: 3
Course Typically Offered: Fall

MCJ 159S. Public Relations Cases and Campaigns
Prerequisites: MCJ 10, MCJ 152S, MCJ 158S. Public relations teams plan public relations campaigns for service-learning clients. Covers use of research, setting measurable objectives, identifying key publics, defining strategies, setting budgets, and evaluating results. Analyses and application of recent cases to solve public relations problems.
Units: 3
Course Typically Offered: Spring

MCJ 163. Media and Pop Culture
A critical analysis of media as popular culture through the study of media literacy.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 164. Applied Media Research
Introduces various mass communication research methods. Emphasis on learning elements involved in the study of planning, designing, and executing mass communication research.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 172. Media Law
Study of federal and state laws and regulations that apply to the media, covering such topics as freedom of information, libel, right to privacy, fair trial-free press, copyright, obscenity and indecency, advertising regulation, and broadcast law and regulation, and broadcast law and regulation.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 173. Media Ethics
Study of ethical choices in the context of the political, social, and economic structure of U.S. communications systems. Also emphasizes applying traditional ethical theories to current media issues and problems.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 174. History of Mass Media
Historical background of American media from colonial to modern times.
Units: 3

MCJ 175. Stereotypes and Representation in Media
Prerequisites: G.E. Foundation and Breadth Area D. Examines relationships between media and social constructions, including analyses of contemporary and historical portrayals of gender, sexuality, race, ethnicity, economic class, and physical conditions. Explores strategies for recognizing cultural ramifications of reinforced stereotypes such as audience interpretations, media literacy, and advocacy. G.E. Integration ID.
Units: 3
Course Typically Offered: Fall, SpringGE Area: ID

MCJ 176. International Mass Communication
Assesses complex international forces shaping global media. Examines ways mass media of North American countries and other nations affect international relations. Focuses on impacts of international news flows, role of media in national development, effects of transnational entertainment, and advertising content. Multicultural/International M/I.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 177T. Media Topics
Prerequisite: upper-division standing. Topics explore various aspects of the relationships between media and society in national and international arenas.
Units: 3, Repeatable up to 6 units

MCJ 177T. Political Journalism
Exploration of covering political issues at the local, state and national level. (Offered Spring 2020)
Units: 3

MCJ 177T. Entrepren Media-making and Producing for Film
This course teaches the fundamentals of entrepreneurial concepts, business management, and career opportunities as they relate to filmmakers and media producers. Lecture and laboratory experiences emphasize entrepreneurship, independent financing and distribution of work, self-employment, marketing, outreach, and dialogue with media professionals working in the field. (Offered Spring 2020)
Units: 3

MCJ 178. New Media Technologies
Prerequisites: G.E. Foundation and Breadth Area D. Addresses the social, political, economic, and philosophical implications of new digital media, as well as the corporate, government, and institutional forces that have shaped the new digital media landscape. Particular attention is given to uses of the technologies and the dynamic relationship linking technology, culture, and social change. G.E. Integration ID.
Units: 3
Course Typically Offered: Fall, SpringGE Area: ID

MCJ 179. Cineculture
Explores a wide range of socio-cultural-political topics through a series of film and lectures. Emphasis on critical analysis of diverse cultures as they are represented in film. Students develop a global awareness and understanding of cultural diversity. Multicultural/International M/I.
Units: 3
Course Typically Offered: Fall, Spring

MCJ 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

MCJ 191. Internship
Prerequisites: permission of instructor. Applied practical experience in an appropriate media outlet, recording studio, production company, advertising agency, public relations firm, or other media-related firm with on-the-job and faculty supervision/instruction.
Units: 1-3
Course Typically Offered: Fall, Spring

MCJ 203. Mass Media Industry and Issues
(Core) Examination of the ownership structure, economics, content, and effects of mass media. Contemporary media controversies are examined from both societal and industry points of view. Papers required. (Formerly MCOM 203)
Units: 3

MCJ 204. Introduction to Mass Comm Graduate Studies
Introduces students to the field of mass communication. Discussion includes an overview of various research methods in the field, the process and production of research proposals, and the process of planning a program of study. Emphasizes a scholarly style of writing.
Units: 3

MCJ 205. Mass Communication Theory
This course examines the history and development of prominent mass communication theories and their application in the field of mass communication research.
Units: 3
MCJ 206. Quantitative Methods in Mass Communication
Introduction in quantitative research designs and statistical procedures. Areas of examination include various statistical tests used in mass communication research, criteria for evaluating scientific research, and computer assisted (SPSS) statistical procedures. Students will design and complete a research project.
Units: 3

MCJ 207. Qualitative Methods in Mass Communication
This course examines various qualitative methods used in mass communication research, such as historical analysis, legal research, cultural analysis, content analysis, and participant/observer analysis. Students will design and complete a research project.
Units: 3

MCJ 214. Media Technology and Systems
Seminar in emerging communications media. Technological developments, corporate and governmental policies, and the sociopolitical implications of current and projected applications. (Formerly MCOM 214)
Units: 3

MCJ 215. Media Ethics and Regulation
Seminar in the law and ethics of mass communication, with emphasis on current social and ethical controversies and the impact of regulatory trends on media professionals. (Formerly MCOM 215)
Units: 3

MCJ 216. Global Media and International Relations
Focus on mass communication and international relations by examining global flow and impact of news, entertainment content, transnational advertising, and information technologies. Issues discussed in the context of international mass communication theory and research. (Formerly MCOM 216)
Units: 3

MCJ 240T. Seminar in Media Industry Practices and Management
Exploration of current challenges and advanced practices in the media or management in a particular media-related industry: advertising, broadcasting, public relations, journalism, Internet. (Formerly MCOM 240T)
Units: 3, Repeatable up to 9 units

MCJ 240T. Cultural Criticism of Media
An introduction to the analysis and interpretation of media texts. The student will learn theories and methodologies to understand and explain the cultural significance of mass media texts within a mass-media-saturated society.

MCJ 290. Independent Study
See Academic Placement - Independent Study. Approved for RP grading. (Formerly MCOM 290)
Units: 1-3

MCJ 298. Project
Prerequisites: permission of instructor; see Criteria for Thesis and Project. Completion of a significant project appropriate to the student's area of specialization. A written report and a presentation to the faculty are required. Approved for RP grading. One or two semesters, depending upon project complexity. (Formerly MCOM 298)
Units: 6

MCJ 298C. Project Continuation
Pre-requisite: Project MCJ 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

MCJ 299. Thesis
Prerequisite: See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Presentation to the faculty is required. Approved for RP grading. (Formerly MCOM 299)
Units: 6

MCJ 299C. Thesis Continuation
Pre-requisite: Thesis 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

MCJ 429T. Filmmaking
Units: 3

MCJ 629T. 35MM Filmmaking
Units: 3

MATHEMATICS

CI 161. Content Area Methods and Materials in Secondary Teaching
Prerequisites: CI 152 AND CI 159 or concurrent enrollment; admission to the Single Subject Credential Program or teaching experience. Planning, delivering, and assessing content-specific instruction; academic and common core standards; identifying specific standards that require literacy strategies.
Units: 3, Repeatable up to 999 units
Course Typically Offered: Fall, Spring

EHD 154B. Final Student Teaching Seminar - Mathematics
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.

Units: 1

EHD 155B. Student Teaching in Secondary School - Math
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.

Units: 5-10
Course Typically Offered: Fall, Spring

MATH 3. College Algebra
Prerequisite: Mathematics placement category I or II. Students in Mathematics placement category III or IV must take MATH 3L. Equations and inequalities; rectangular coordinates; systems of equations and inequalities; polynomial, rational, exponential, and logarithmic functions and their graphs; complex numbers.

Units: 3
Course Typically Offered: Fall, Spring

MATH 3L. College Algebra w/ Support
Equations and inequalities; rectangular coordinates; systems of equations and inequalities; polynomial, rational, exponential, and logarithmic functions and their graphs; complex numbers.
(3 lecture, 3 lab hours)

Units: 4
Course Typically Offered: Fall, Spring

MATH 5. Trigonometry
Prerequisite: Mathematics placement category I or II. Can be taken concurrently with Math 3 for category standing III or IV. Concept of a function, sine and cosine functions, tables and graphs, other trigonometric functions, identities and equations. Trigonometric functions of angles, solution of triangles. (See Duplication of Courses).

Units: 3

Course Typically Offered: Fall, Spring

MATH 6. Precalculus
Prerequisite: Mathematics placement category I or II. Basic algebraic properties of real numbers; linear and quadratic equations and inequalities; functions and graphs; polynomials; exponential and logarithmic functions; analytic trigonometry and functions. (3 lecture, 2 activity hours)

Units: 4
Course Typically Offered: Fall, Spring

MATH 10A. Structure and Concepts in Mathematics I
Prerequisite: Mathematics placement category I or II. Students in Mathematics placement category III or IV must take Math 10AL. Designed for prospective elementary school teachers. Development of real numbers including integers, rational and irrational numbers, computation, prime numbers and factorizations, and problem-solving strategies. Meets B4 G. E. requirement only for liberal studies majors.

Units: 3
Course Typically Offered: Fall, Spring
GE Area: B4

MATH 10AL. Structure and Concepts in Mathematics I w/ Support
Designed for prospective elementary school teachers. Development of real numbers including integers, rational and irrational numbers, computation, prime numbers and factorizations, and problem-solving strategies. Meets B4 G. E. requirement only for liberal studies majors. (3 lecture, 3 lab hours)

Units: 4
Course Typically Offered: Fall, Spring
GE Area: B4

MATH 10B. Structure and Concepts in Mathematics II
Prerequisite: MATH 10A. Designed for prospective elementary school teachers. Counting methods, elementary probability and statistics. Topics in geometry to include polygons, congruence and similarity, measurement, geometric transformations, coordinate geometry, and connections between numbers and geometry with selected applications.

Units: 3
Course Typically Offered: Fall, Spring

MATH 11. Elementary Statistics
Prerequisite: Mathematics placement category I or II. Students in Mathematics placement category III or IV must take Math 11L. Illustration of statistical concepts: elementary probability models, sampling, descriptive measures, confidence intervals, testing hypotheses, chi-square, nonparametric methods, regression. It is recommended that students with credit in MATH 75 or MATH 75A and B take MATH 101.

Units: 3
MATH 11L. Elementary Statistics w/Support
Illustration of statistical concepts: elementary probability models, sampling, descriptive measures, confidence intervals, testing hypotheses, chi-square, nonparametric methods, regression. It is recommended that students with credit in MATH 75 or MATH 75A and B take MATH 101. (3 lecture, 3 lab hours)
Units: 4
GE Area: B4

MATH 45. What Is Mathematics?
Prerequisite: Mathematics placement category I or II. Students in Mathematics placement category III or IV must take Math 45L. Covers topics from the following areas: (I) The Mathematics of Social Choice; (II) Management Science and Optimization; (III) The Mathematics of Growth and Symmetry; and (IV) Statistics and Probability. G. E. Foundation B4.
Units: 3
Course Typically Offered: Fall, Spring GE Area: B4

MATH 45L. What Is Mathematics w/Support
Covers topics from the following areas: (I) The Mathematics of Social Choice; (II) Management Science and Optimization; (III) The Mathematics of Growth and Symmetry; and (IV) Statistics and Probability. G. E. Foundation B4. (3 lecture, 3 lab hours)
Units: 4
GE Area: B4

MATH 70. Calculus for Life Sciences
No credit if taken after MATH 75 or MATH 75A and B. Prerequisite: Mathematics placement category I or II and calculus placement according to department standards. Functions and graphs, limits, derivatives, antiderivatives, differential equations, and partial derivatives with applications in Life Sciences.
Units: 4
Course Typically Offered: Fall, Spring GE Area: B4

MATH 75. Calculus I
Prerequisites: Mathematics placement category I or II, and calculus placement according to department standards. Functions, graphs, limits, continuity, derivatives, and applications, with extensive review of algebra and elementary functions. With MATH 75B, equivalent to MATH 75. G.E. Foundation B4.
Units: 4
Course Typically Offered: Fall, Spring GE Area: B4

MATH 75A. Calculus with Review IA
Prerequisites: Mathematics placement category I or II, and calculus placement according to department standards.
MATH 101. Statistical Methods
Prerequisite: MATH 70 or MATH 75, or MATH 75A and B; no credit if taken after MATH 108. Application of statistical procedures to examples from biology, engineering, and social science; one- and two-sample normal theory methods; chi-square, analysis of variance, and regression; nonparametric methods. Computerized statistical packages are used.
Units: 4
Course Typically Offered: Fall, Spring

MATH 105. Statistical Programming and Data Analysis
Prerequisite: MATH 11 or MATH 101 or permission of instructor. Introduction to SAS and R through programming and data analysis. Topics include data access, data structure, data management and manipulation, simulations, arrays, matrices, graphics, custom functions, and standard statistical techniques in SAS/R.
Units: 3
Course Typically Offered: Fall

MATH 106. Applied Linear Statistical Models
Prerequisites: MATH 75; MATH 11 or MATH 101 or permission of instructor. Topics include simple linear regression, parameter inference, interval estimation, prediction, diagnostics and remedial measures, multiple linear regression, model selection and validation, generalized linear models, ridge regression, LASSO.
Units: 3
Course Typically Offered: Spring

MATH 107. Mathematical Statistics
Prerequisite: MATH 77 (may be taken concurrently). Probability theory; discrete and continuous distributions; random variables; conditional distributions; multivariate distributions; limit theorems; maximum likelihood methods.
Units: 3
Course Typically Offered: Fall

MATH 108. Advanced Mathematical Statistics
Prerequisite: MATH 107. Statistical inferences; sufficiency; optimal hypothesis tests; inferences from normal theory, nonparametric statistics; elementary decision theory; Bayesian statistics.
Units: 3
Course Typically Offered: Spring

MATH 109. Applied Probability
Prerequisite: MATH 107. Introduction to stochastic processes and their applications in science and industry. Markov chains, queues, stationary time series.
Units: 3
Course Typically Offered: Spring

MATH 110. Symbolic Logic
(Similar to PHIL 145; consult department.) Prerequisite: MATH 75 or MATH 75A and B. An informal treatment of the theory of logical inference, statement calculus, truth-tables, predicate calculus, interpretations applications.
Units: 3
Course Typically Offered: Spring

MATH 111. Transition to Advanced Mathematics
Prerequisite: MATH 76. Introduction to the language and problems of mathematics. Use of LaTeX as a typesetting tool. Topics include set theory, symbolic logic, types of proofs, and mathematical induction. Emphasis on students constructing, explaining, and justifying mathematical arguments through active learning.
Units: 4
Course Typically Offered: Fall, Spring

MATH 114. Discrete Structures
Prerequisite: MATH 111. Counting techniques, matrix algebra, graphs, trees and networks, recurrence relations and generating functions, applied modern algebra.
Units: 3
Course Typically Offered: Fall

MATH 116. Theory of Numbers
Prerequisite: MATH 111. Divisibility theory in the integers, primes and their distribution, congruence theory, Diophantine equations, number theoretic functions, primitive roots, indices, the quadratic reciprocity law.
Units: 4
Course Typically Offered: Fall, Spring

MATH 118. Graph Theory
Prerequisite: MATH 111. Trees, connectivity, Euler and Hamilton paths, matchings, chromatic problems, planar graphs, independence, directed graphs, networks.
Units: 3
Course Typically Offered: Spring

MATH 121. Numerical Analysis I
Prerequisites: MATH 77 and either CSCI 40 or ECE 71. Computer arithmetic, solutions of equations using iterative techniques, interpolation, numerical differentiation, quadrature, and numerical ordinary differential equations. Use of numerical software libraries.
Units: 3
Course Typically Offered: Spring

MATH 122. Numerical Analysis II
Prerequisites: MATH 121, MATH 152. Systems of linear equations, Gaussian elimination with pivoting, matrix
inversion, determinant of a matrix, SVD, LU and Cholesky factorization of a matrix, iterative techniques, orthogonal matrix, QR factorization, Gram-Schmidt and Householder methods, approximating eigenvalues, systems of nonlinear equations, steepest descent techniques, Newton's method, and rational approximation.

Units: 3  
Course Typically Offered: Fall

MATH 123. Mathematical Modeling  
Prerequisite: MATH 77. Application of mathematical techniques to solve selected problems in areas such as ecology, biology, economics, finance, social sciences, life sciences, physical sciences and engineering. The emphasis will be on the building of mathematical models and on interpreting the solutions of these models in terms of real-life applications.

Units: 3  
Course Typically Offered: Spring - odd

MATH 128. Applied Complex Analysis  
Prerequisite: MATH 77. Analytic functions of a complex variable, contour integration, series, singularities of analytic functions, the residue theorems, conformal mappings; emphasis on engineering and physics applications.

Units: 3  
Course Typically Offered: Fall

MATH 133. Number Theory for Liberal Studies  
Prerequisite: MATH 10B or permission of instructor. The historical development of the concept of number and arithmetic algorithms. The magnitude of numbers. Basic number theory. Special numbers and sequences. Number patterns. Modular arithmetic.

Units: 3  
Course Typically Offered: Fall

MATH 134. Geometry for Liberal Studies  
Prerequisite: MATH 10B or permission of instructor. The use of computer technology to study and explore concepts in Euclidean geometry. Topics include, but are not restricted to, properties of polygons, tilings, and polyhedra.

Units: 3  
Course Typically Offered: Spring

MATH 137. Exploring Statistics  
Prerequisite: MATH 10B or permission of instructor. Descriptive and inferential statistics with a focus on applications to mathematics education. Use of technology and activities for student discovery and understanding of data organization, collection, analysis and inference.

Units: 3  
Course Typically Offered: Spring

Course Typically Offered: Fall

MATH 138. Exploring Algebra  
Prerequisite: MATH 10B or permission of instructor. Designed for prospective school teachers who wish to develop a deeper conceptual understanding of algebraic themes and ideas needed to become competent and effective mathematics teachers.

Units: 3  
Course Typically Offered: Spring

MATH 139. Advanced Algebra for Middle School Teachers  
Prerequisite: MATH 6 or MATH 138. Basic structures of modern algebra from a middle school mathematics curriculum perspective. Algebraic structures, polynomial equations, and elementary linear algebra.

Units: 4  
Course Typically Offered: Fall

MATH 143. History of Mathematics  
Prerequisite: MATH 75 or MATH 75A and 75B. History of the development of mathematical concepts in algebra, geometry, number theory, analytical geometry, and calculus from ancient times through modern times. Theorems with historical significance will be studied as they relate to the development of modern mathematics.

Units: 4  
Course Typically Offered: Fall, Spring

MATH 145. Problem Solving  
Prerequisite: MATH 111; EHD 50 (may be enrolled concurrently). A study of formulation of problems into mathematical form; analysis of methods of attack such as specialization, generalization, analogy, induction, recursion, etc. applied to a variety of non-routine problems. Topics will be handled through student presentation.

Units: 3  
Course Typically Offered: Fall

MATH 149S. Capstone Mathematics for Teachers  
Prerequisites: MATH 151; MATH 161; MATH 171 (MATH 161 and 171 may be taken concurrently). Secondary school mathematics from an advanced viewpoint. This course builds on students’ work in upper division mathematics to deepen their understanding of the mathematics taught in secondary schools. In collaboration with local in-service teachers and university faculty, students will actively explore topics in number theory, algebra, analysis, geometry, and apply their content knowledge in a service-learning context.

Units: 4  
Course Typically Offered: Spring

MATH 151. Principles of Algebra  
Prerequisite: MATH 111. Equivalence relations; groups, cyclic groups, normal sub-groups, and factor groups; rings, ideals,
and factor rings; integral domains and polynomial rings; fields and field extensions.

Units: 4
Course Typically Offered: Fall, Spring

MATH 152. Linear Algebra
Prerequisite: MATH 77. Vector spaces, linear transformations, matrices, determinants, eigenvalues and eigenvectors, linear functions, inner-product spaces, bilinear forms, quadratic forms, orthogonal and unitary transformations, selected applications.

Units: 4
Course Typically Offered: Fall, Spring

MATH 161. Principles of Geometry
Prerequisite: MATH 111. The classical elliptic, parabolic, and hyperbolic geometries developed on a framework of incidence, order and separation, congruence; coordinatization. Theory of parallels for parabolic and hyperbolic geometries. Selected topics of modern Euclidean geometry.

Units: 3
Course Typically Offered: Spring

MATH 165. Differential Geometry
Prerequisite: MATH 77 and MATH 111. Study of geometry in Euclidean space by means of calculus, including theory of curves and surfaces, curvature, theory of surfaces, and intrinsic geometry on a surface.

Units: 3
Course Typically Offered: Fall

MATH 171. Intermediate Mathematical Analysis I
Prerequisite: MATH 111. Natural and rational numbers, real numbers as a complete ordered field, its usual topology, sequences and series of real numbers, functions of a real variable, limits, continuity, uniform continuity, differentiability, generalized mean value theorem, Riemann integrals, and power series.

Units: 4
Course Typically Offered: Fall, Spring

MATH 172. Intermediate Mathematical Analysis II
Prerequisite: MATH 77 and MATH 171. Pointwise and uniform convergence of sequences and series of functions, convergence of sequences in higher dimensions, continuity and differentiability of functions of several variables. The inverse and implicit function theorems; topics in integration theory in higher dimensions.

Units: 4
Course Typically Offered: Spring

MATH 181. Differential Equations
Prerequisite: MATH 81. Definition and classification of differential equations; general, particular, and singular solutions; existence theorems; theory and technique of solving certain differential equations; phase plane analysis, elementary stability theory; applications.

Units: 3
Course Typically Offered: Fall

MATH 182. Partial Differential Equations
Prerequisites: MATH 81 or MATH 123. Classical methods for solving partial differential equations including separation of variables, Green's functions, the Riemann-Volterra method and Cauchy's problem for elliptic, parabolic, and hyperbolic equations; applications to theoretical physics.

Units: 3
Course Typically Offered: Spring

MATH 190. Independent Study
See Academic Placement. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

MATH 191T. Proseminar
Prerequisites: Permission of instructor. Presentation of advanced topics in mathematics in the field of the student's interest.

Units: 1-3

MATH 191T. Predictive Analytics
Predictive analytics encompasses a variety of machine learning, statistical modeling, and data mining techniques to formulate predictions about the unknown future. In examining real-world data, learn when and how to apply various analytic tools to gain insight and make predictions. Topics include logistic regression, classification and discriminate analysis, cross-validation, additive models and splines, random forests, boosting, support vector machines; unsupervised learning methods such as clustering and principal component analysis as time permits. Use of statistical software, such as R. (Offered Spring 2020)

Units: 3

MATH 191T. Junior Seminar in Mathematics Teaching
Prerequisites: Junior standing; MATH 111 and at least one of MATH 101,143, 145, or permission from instructor. Undergraduate seminar featuring talks in mathematics education given by mathematics faculty, guest speakers, and students. Student presenters in this seminar will showcase their experiences from educational settings (preferably related to the service learning component of MATH 149S) or research in mathematics education. This seminar is a 1 unit additional requirement for the Teaching and Integrated Credential options in the B.S. in Mathematics. (Offered Spring 2020)

Units: 1
MATH 191T. Research Seminar in Statistics
Prerequisites: MATH 106, 107, and 108 (MATH 108 can be taken concurrently), or permission from instructor. Presentations and discussions given by mathematics faculty, guest speakers, and students on data analysis and/or advanced topics in statistics. The seminar is the culminating experience for the Statistics option in the BS in Mathematics. (Offered Spring 2020)
Units: 1

MATH 191T. Junior Seminar in Applied Mathematics
Prerequisites: Junior standing; MATH 111 and at least two of MATH 109, 121, 122, 123, 152, 181, and 182, or permission from instructor. The undergraduate seminar features talks in applied mathematics given by mathematics faculty, guest speakers, and/or senior mathematics majors who previously took this seminar and have taken or are enrolled in MATH 198. Student presentations given in this seminar will preferably be related to presenter’s work in MATH 198, which must be on advanced topics in applied mathematics. The seminar is part of the culminating experience for the Applied Mathematics option in the B.S. in Mathematics. (Offered Spring 2020)
Units: 1

MATH 191T. Junior Seminar in Pure Mathematics
Prerequisites: Junior standing; MATH 111 and MATH 152 (MATH 152 can be taken concurrently), or permission from instructor. The undergraduate seminar features talks in pure mathematics given by mathematics faculty, guest speakers, and/or senior mathematics majors who previously took this seminar and have taken or are enrolled in MATH 198. Student presentations given in this seminar will preferably be related to presenter’s work in MATH 198, which must be on advanced topics in pure mathematics. The seminar is part of the culminating experience for the Pure Mathematics option in the B.S. in Mathematics. (Offered Spring 2020)
Units: 1

MATH 192. Undergraduate Mathematics Seminar
Prerequisite: MATH 76 or consent of the instructor. Presentations on various topics in mathematics. The course is intended for STEM students with a strong interest in mathematics. It is an upper division elective course.
Units: 1, Repeatable up to 3 units
Course Typically Offered: Fall

MATH 198. Senior Project
Prerequisites: Senior standing or permission of instructor; MATH 151, MATH 171, and MATH 152. Independent investigation and presentation of an advanced topic in mathematics. Satisfies the senior major requirement for the B.A. in Mathematics.
Units: 3

MATH 200. Research Methods in Mathematics Education
This course covers quantitative and qualitative methods of researching how people think and learn about mathematics, and how research informs the teaching of mathematics. Content includes research design, use of statistical analyses, and critical examination of research in mathematics education.
Units: 3

MATH 201. Cognition in Mathematics
This course explores theories and empirical studies which examine the development of students' and teachers' knowledge and practices in mathematics. A central theme of the course is the examination of research on the use of technology in the teaching of mathematics.
Units: 3

MATH 202. Fundamental Concepts of Mathematics
Prerequisites: MATH 151, MATH 161 and MATH 171. Fundamental notions regarding number theory, number systems, algebra of number fields; functions.
Units: 3

MATH 216T. Topics in Number Theory
Prerequisite: MATH 116. An investigation of topics having either historical or current research interest in the field of number theory. (Formerly MATH 216)
Units: 3, Repeatable up to 6 units

MATH 220. Coding Theory
Prerequisites: MATH 151 and MATH 152. Basic concepts in coding theory, properties of linear and on-linear codes, standard decoding algorithms, cyclic codes, BCH-codes.
Units: 3

MATH 223. Applied Operator Theory
Units: 3

MATH 228. Functions of a Complex Variable
Prerequisite: MATH 128. Representation theorems of Weierstrass and Mittag-Leffler, normal families, conformal mapping and Riemann mapping theorem, analytic continuation, Dirichlet problem.
Units: 3
MATH 232. Mathematical Models with Technology
Prerequisite: graduate standing in mathematics or permission of instructor. A technology-assisted study of the mathematics used to model phenomena in statistics, natural science, and engineering.
Units: 3

MATH 250. Perspectives in Algebra
Prerequisite: graduate standing in mathematics or permission of instructor. Study of advanced topics in algebra, providing a higher perspective to concepts in the high school curriculum. Topics selected from, but not limited to, groups, rings, fields, and vector spaces.
Units: 3

MATH 251. Abstract Algebra I
Prerequisite: MATH 151 or permission of instructor. Semi-direct products of groups; isomorphism theorems. Group actions; Sylow theorems; classification of groups of small order; finitely generated Abelian groups. Rings and ideals; quotient rings; domains (ED, PID, UFD); polynomial rings.
Units: 3

MATH 252. Abstract Algebra II
Prerequisite: MATH 251. Field extensions; automorphisms of fields; Galois theory. Additional topics to be chosen from (1) modules, (2) linear and multilinear algebra and (3) representation theory.
Units: 3

MATH 260. Perspectives in Geometry
Prerequisite: MATH 151 and MATH 152 or permission of instructor. Geometry from a transformations point of view. Projective geometry: theorems of Ceva, Menelaus, Desargues, and Pappus; conics; coordinatization. Transformations of the plane (Euclidean and projective); tessellations; wallpaper groups. Further topics to be selected from Incidence Geometry, Differential Geometry, or Algebraic Geometry.
Units: 3

MATH 263. Point Set Topology
Prerequisite: MATH 172. Basic concepts of point set topology, set theory, topological spaces, continuous functions; connectivity, compactness and separation properties of spaces. Topics selected from function spaces, metrization, dimension theory.
Units: 3

MATH 270. Perspectives in Analysis
Prerequisite: graduate standing in mathematics or permission of instructor. An overview of the development of mathematical analysis, both real and complex. Emphasizes interrelation of the various areas of study, the use of technology, and relevance to the high school mathematics curriculum.
Units: 3

MATH 271. Real Analysis
Prerequisite: MATH 172. Lebesgue's measure and integration theory on the real line. Limit theorems and types of convergence. Lp spaces. Differentiation and integration.
Units: 3

MATH 272. Functional Analysis
Prerequisite: MATH 271 or permission of instructor. Elements of the theory of abstract spaces. The three fundamental principles of linear functional analysis (Hahn-Banach Theorem, Uniform Boundedness Principle, and Open Mapping Theorem) and their implications. Duality and reflexivity of normed vector spaces, geometry of Hilbert spaces. (Formerly MATH 291T)
Units: 3

MATH 290. Independent Study
See Academic Placement. Approved for RP grading.
Units: 1-3

MATH 291T. Seminar
Prerequisite: graduate standing. Presentation of current mathematical research in field of student's interest.
Units: 1-3

MATH 298. Research Project in Mathematics
Prerequisite: graduate standing. Independent investigation of advanced character as the culminating requirement for the master's degree. Approved for RP grading.
Units: 3

MATH 298C. Project Continuation
Pre-requisite: Project MATH 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

MATH 299. Thesis in Mathematics
Prerequisite: See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.
Units: 3
ME 1. Introduction to Mechanical Engineering
Required of all freshmen and transfer students during their first or second semester of study. Introduction to engineering design; case studies in mechanical engineering; problem-solving using the engineering approach; introduction to engineering code of ethics, mechanical engineering profession, and career opportunities.

Units: 1
Course Typically Offered: Fall

ME 2. Computer Applications in Mech Engineering Lab
Prerequisites: MATH 75 (or concurrently). Students develop fundamental skills in basic analytical and design tools used in mechanical engineering. Topics covered include spreadsheet applications, graphing data, technical communication, programming concepts, and computer-aided design (CAD). (3-hr laboratory).

Units: 1
Course Typically Offered: Fall, Spring

ME 26. Engineering Graphics
Prerequisites: MATH 75 (or concurrently). Basic computer literacy required. Principles of orthographic projection, dimensioning, and descriptive geometry. Applications to the solution of engineering problems including the use of interactive computer graphics. (Two 3-hour lecture labs)

Units: 3
Course Typically Offered: Fall, Spring

ME 29. Engineering Mechanics
Same as CE 29: Prerequisites: MATH 77 (or concurrently); PHYS 4A. Not open to mechanical or civil engineering majors. Study of fundamental principles of statics and dynamics by scalar and vector methods.

Units: 3
Course Typically Offered: Fall, Spring

ME 31. Engineering Materials
Prerequisites: CHEM 1A. and MATH 75 (or concurrently). Fundamental nature and properties of engineering materials; structure of matter and its effect on mechanical, electrical, magnetic, and thermal properties.

Units: 3
Course Typically Offered: Fall, Spring

ME 32. Engineering Materials Laboratory
Prerequisite: ME 31 and MATH 75 completed or concurrent. Application of experimental methods to engineering materials. Study of stress and strain in metals; fatigue; hardness; toughness. (3 lab hours)

Units: 1

ME 95. Product Development
Prerequisites: ME 2 (or concurrently), ME 26, ME 31, and ME 32 (or concurrently) and MATH 75 (or concurrently). Examines the overall process of product development including preliminary design, drafting, material selection, fabrication, inspection, assembly, and testing. Laboratory component introduces basic machining and fabrication skills. (1 lecture, 3 lab hours)

Units: 2
Course Typically Offered: Fall, Spring

ME 112. Engineering Mechanics: Dynamics
Prerequisite: CE 20, MATH 81 (or ENGR 101). Development of principles of kinematics and kinetics in engineering. Introduction to vibration.

Units: 3
Course Typically Offered: Fall, Spring

ME 115. Instrumentation and Measurement Lab
Prerequisites: ECE 71 (or CSCI 40), ECE 91, ECE 91L. Application of different measuring devices and techniques used in engineering systems. Calibration and response characteristics of instruments will be examined. Use of data acquisition system in the recording and analyzing of experimental data. Technical reports are required. (3 lab hours)

Units: 1
Course Typically Offered: Fall, Spring

ME 116. Fluid Mechanics
Prerequisites: CE 20, MATH 81 (or ENGR 101), ME 112 (or concurrently). Fundamentals of fluid mechanics as applied to engineering problems.

Units: 3
Course Typically Offered: Fall, Spring

ME 118. Fluid Mechanics Laboratory
Prerequisites: Any writing class or successful completion of university writing exam (UDWE); ME 116 (or concurrently). Applications of experimental methods used in engineering practice to fluid systems. (One 3-hour lab)

Units: 1
Course Typically Offered: Fall, Spring

ME 122. Dynamic Systems and Controls
Prerequisites: ME 112, ME 115. Modeling of mechanical systems; mechanical feedback systems; time domain analysis; stability, frequency response, and root locus plots; performance criteria, and system compensations; applications of different measuring devices and techniques used in engineering systems.

Units: 3
ME 125. Engineering Statistics and Experimentation  
Prerequisites: MATH 77 (or concurrent). Provides fundamentals of statistical and uncertainty analysis applied to engineering measurements, experimental methods, product design, and manufacturing processes. Includes probability distributions, data sampling, confidence intervals, quality control, reliability, life testing, and analysis of uncertainty in experimental measurements.

Units: 3  
Course Typically Offered: Fall, Spring

ME 134. Kinematics of Machinery  
Prerequisites: ME 26, ME 112, CE 121, MATH 81 (or ENGR 101). Analytical, graphical, and computer solutions applied to design problems in machinery, mechanisms. Cam design, different types of followers, cam manufacturing considerations. Gear design, different types of gears, gear trains. Students will be assigned class projects related to the topics covered in class. (2 lecture, 3 lab hours)

Units: 3  
Course Typically Offered: Fall, Spring

ME 135. Senior Capstone Design I  
Prerequisites: ME 95, ME 115, ME 134 (or concurrently), ME 145 (or concurrently), ME 154 (or concurrently), ME 156 (or concurrently), and completion of Upper-Division Writing Requirement. Senior standing required. Introduction to engineering design process with consideration given to economic, safety, quality, aesthetics, environmental, liability, and patent law issues. First semester of a two-semester senior capstone design experience that culminates in a working prototype.

Units: 3  
Course Typically Offered: Fall

ME 136. Thermodynamics  
Prerequisites: CHEM 1A; PHYS 4A, MATH 77. Fundamentals of thermodynamics and heat transfer as applied to engineering problems.

Units: 3  
Course Typically Offered: Fall, Spring

ME 137. Turbomachinery  
Prerequisites: ME 116 and ME 136. Applications of fluid mechanics and thermodynamics and rotor fluid energy interchange. Steady flow problems of pumps, compressors, and turbines with incompressible and compressible fluids. Both closed and open ended homework problems.

Units: 3

ME 140. Advanced Engineering Analysis  
Prerequisites: CE 121; ECE 71 or ECE 70 or CSCI 40; ME 112 (or concurrently), ME 116 (or concurrently). Development of finite element method of engineering analysis; applications to heat flow, fluid flow, vibrations, and stresses in mechanical design using appropriate numerical techniques and closed-form solutions of partial differential equations.

Units: 3  
Course Typically Offered: Spring

ME 142. Mechanical Vibration  
Prerequisites: ME 112. Mathematical and physical basis of vibration theory with applications to engineering analysis and design. Includes transient and steady state phenomena, distributed and lumped parameter systems, coupled systems, and computer solutions.

Units: 3  
Course Typically Offered: Spring

ME 144. Advanced Mechanics of Materials  
Prerequisites: CE 121, ME 125, MATH 81. Advanced topics in mechanics of materials. Statistical considerations in design, stress and strain theories; contact stresses, strain energy, Castigiliano's theorem; failures resulting from static and dynamic loading; static and fatigue theories of failure; stress concentrations.

Units: 3

ME 145. Heat and Mass Transfer  
Prerequisites: ME 116, ME 136, ME 140 or concurrently. Analytical, numerical, and electrical analogy methods are used to solve a variety of heat transfer and mass transfer problems. Advanced topics in radiation, boundary layer flow, and heat exchanger design.

Units: 3  
Course Typically Offered: Fall

ME 146. Air Conditioning  
Prerequisites: ME 116, ME 156. Theory and practice in air conditioning including psychrometrics, load estimating, heating and cooling systems, fluid design and controls. (2 lecture, 3 lab hours)

Units: 3  
Course Typically Offered: Spring

ME 154. Design of Machine Elements  
Prerequisites: ME 31, CE 121. Design of machine elements and components using theory learned in prerequisite courses. Both individual and team-type open-ended design projects are required. Use of computers for design is required. (2 lecture, 3 lab hours)

Units: 3
ME 155. Senior Capstone Design II  
Prerequisites: ME 135 and completion of Upper Division Writing Requirement. Engineering design process with consideration given to economic, safety, quality, aesthetics, environmental, liability, and patent law issues. Meeting client-based specifications; optimizing designs, working in a team environment, and developing project management skills form the basis for the course. second semester of a two-semester capstone design experience.
Units: 3

ME 156. Advanced Thermodynamics  
Prerequisites: ME 136. Advanced topics in thermodynamics including analysis of conventional and alternative energy conversion processes.
Units: 3

ME 159. Mechanical Engineering Laboratory  
Prerequisites: ME 118, ME 125, ME 145, ME 156 (or concurrently), and senior standing. Analysis of mechanical engineering and measurement systems. Students conduct experiments dealing with advanced thermal and mechanical systems. Using knowledge and experience gained from experimentation, students design and conduct their own group experiments. Both written and oral technical reports are required.
Units: 1

ME 162. Computer-Aided Design  
Prerequisites: ME 2, ME 26, ME 140, ME 145 (or concurrently). Survey of computer applications for design, analysis of mechanical systems, and manufacturing of mechanical components. Typical programming language software packages used in industry (CAD/CAM and FEA) will be introduced.
Units: 3

ME 164. Mechanical Systems Engineering Design  
Prerequisites: ME 135 and successful completion of university writing requirement. Open ended design problems of complete machine systems. Integration of prerequisite course material into final design project. Team project report/presentation required.
Units: 3

ME 166. Energy Systems Design  
Prerequisites: ME 145, ME 156, and ME 118. Design of conventional and alternative energy conversion systems i.e. solar; selection and integration of components of the system; use of codes and standards. Group project report required. Satisfies the senior major requirement for B.S. in Mechanical Engineering.
Units: 3

ME 180. Special Projects  
Prerequisites: senior standing in mechanical engineering, approved subject, department approved writing course or successful completion of writing exam. Study of a problem under supervision of a faculty member; final typewritten report required. Individual project except by special permission.
Units: 1-3

ME 190. Independent Study  
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

ME 191T. Microcontroller-Based Control System  
Prerequisite: permission of instructor. Investigation of selected mechanical engineering subjects not in current courses.
Units: 1-3

ME 191T. Vehicle Dynamics  
Modeling of wheeled vehicle to predict performance, handling, and ride. Performance: effect of vehicle's center of mass, engine characteristics, and gear ratio. Handling: Suspension design, steady state handling, over-steer and under-steer characteristics, critical speed, and stability. Ride: Multi-degree-of-freedom ride models.
Units: 3, Repeatable up to 6 units

ME 193I. Mechanical Engineering Cooperative Internship  
Prerequisite: permission of adviser. Engineering practice in an industrial or government installation. Each cooperative internship period usually spans a summer-fall or spring-summer interval. This course cannot be used to meet graduation requirements. CR/NC grading only.
Units: 1-6
Course Typically Offered: Fall, Spring

**ME 211. Advanced Dynamics**  
Prerequisite: ME 134 or permission of coordinator. Dynamics of mechanical systems with emphasis on equations of motion. Kinematics of particles, energy and momentum methods, variational methods, Lagrange's method, kinematics and plane motion of rigid bodies, kinematics of rigid bodies in three dimensions, mechanical vibrations.

Units: 3

**ME 215. Design Optimization of Engineering Systems**  
This course provides students with the ability to conceptualize and formulate design optimization problems and to utilize the best algorithms for a given class of problems. Topics include constraints, monotonicity, and methods to optimally design unconstrained and constrained engineering systems.

Units: 3

**ME 216. Computational Fluid Dynamics**  
Classification of partial differential equation (PDE). Finite difference/volume method. Basic concepts of discretization, consistency, and stability. Applications of numerical methods to selected model PDE. Explicit and implicit algorithms. Navier-Stokes solutions and numerical methods for incompressible and compressible flows (3 lecture hours). Prerequisites: ME 221 or consent of the instructor. Basic MATLAB programming skills are required.

Units: 3  
Course Typically Offered: Spring

**ME 220. Compressible Fluids**  
Prerequisite: ME 156 or permission of coordinator. Review of the foundations of fluid mechanics and thermodynamics. The velocity of sound, mach number and angle, differences between incompressible, subsonic, and supersonic flow. Isentropic flow, working charts and tables, choking operations of nozzles. Normal shock waves, ducts, shock tube analysis. Fanno and Rayleigh analysis, oblique shock waves, the PrandtlMeyer equation. Lift and drag on bodies in supersonic flow. Method of characteristics.

Units: 3

**ME 221. Incompressible Fluids**  
Prerequisite: ME 156 or permission of coordinator. The kinematics of liquids and gases, the LaGrangian and Eulerian methods, streak lines, stream tubes. Geometry of the vector field, stokes, and Gauss's theorems, acceleration of a fluid particle, homogenous fluids and the equations of continuity. Integration of Euler's equation, Bernoulli's equation. Potential motion and potential functions, source and sink potentials, the stream function. Vortex theory, surfaces of discontinuity.

Units: 3

**ME 223. Gas Turbine Engines**  
First-year graduate course in mechanics and thermodynamics of jet engine propulsion. Thermodynamics of fluid flow and engines, boundary layer theory, subsonic and supersonic inlets, combustors, fans, compressors, turbines, nozzles, inlet distortion, fuel controls, noise reduction, ramjets and scramjets.

Units: 3

**ME 225. Heat Transfer**  

Units: 3

**ME 227. Advanced Thermodynamics**  
Prerequisite: ME 156 or permission of coordinator. Review of classical thermodynamics, Maxwell relations, equations of state, nonideal gases, experimental methods. Entropy and exergy analysis with applications to energy conversion devices and thermodynamic cycles, single- and multi-phase systems, and irreversibility in thermodynamics.

Units: 3

**ME 229. Advanced Gas Dynamics**  

Units: 3

**ME 232. Advanced Aircraft Stability and Control**  
Prerequisite: ME 230. Continuation of ME 230. Validity of small disturbance theory, nonlinear equations of motion, steady state and dynamic stability and control of elastic airplanes. Frequency response methods, response to turbulence. Automatic flight control analysis and design, the human pilot in the control loop, stability augmentation, digital flight control systems, state vector methods.

Units: 3

**ME 241. Structural Analysis**  
Prerequisite: ME 134 or permission of coordinator. Graduate-level course in the principles of structural mechanics. Stress, strain and displacements, static and dynamic loads, energy methods, virtual work, discrete and continuous system analysis, finite element analysis elastic beams, plates, and frames; single and multi degree-of-freedom modal analysis.
ME 243. Structural Dynamics
Prerequisite: ME 241 or permission of instructor. Continuation of ME 241. Von Karman theory, shear deformation, geometry and equilibrium of shells, theory of vibrations, vibrations of aircraft structures, coupling with the aerodynamic equation, flutter, ground and flight structural test techniques.
Units: 3

ME 290. Independent Study
Prerequisite: graduate status in engineering or permission of instructor. Approved for RP grading.
Units: 1-3

ME 291T. Topics in Mechanical Engineering
Prerequisite: graduate status in engineering or permission of instructor. Selected mechanical engineering subjects not in current courses.
Units: 1-3

ME 291T. Project Management
Managing engineering projects using both theory and application. Software packages such as Microsoft Project or equivalent will be covered. (Offered Spring 2020)
Units: 3

ME 291T. Micro/Nanoscale Heat and Mass Transfer
Introduces statistical thermodynamics and molecular dynamics simulation techniques to analyze heat and transfer at the micro and nanoscale. Covers fundamental concepts and theories in micro and nanoscale energy transport, and their applications in fluids and thermal engineering areas. (Offered Spring 2020)
Units: 3

ME 291T. Fundamentals of Scanning Electron Microscopy
This course serves as an introduction to the methods of scanning electron microscopy and microanalysis of different specimen. The lectures cover the scientific principles, advantages and applications of microanalysis. Topics considered are electron optics, image formation and analysis; x-ray generation, detection and analysis; and characterization of fracture surfaces. (Offered Spring 2020)
Units: 3

ME 291T. Power Systems and Renewable Energy
This course includes power plant technology, power plant engineering, and energy conversion. In this course you will learn about the variety of power generation technologies. From novel technologies to traditional ones. From fossil fuels to renewable energy. From nuclear fission to nuclear fusion. From renewable solar and wind energy to novel plasma processing of organic fuels. From hydrogen power in fuel cells to geothermal and hydro-electrical power. Learn about plants and new fusion projects to clean power generation of the future. Learn about Magneto-Hydro-Dynamic (MHD) generators; nuclear batteries; about the traditional power generation with coal, gas, and oil, and clean coal gasification technologies and coal to liquid fuels trends; how to protect the environment knowing the physics behind the power generation; energy environment; Energy Conservation and Energy Storage; several applications using present and future technologies including Plasma processing of organic components, among others.
Units: 3

ME 298. Project
Prerequisite: graduate status in engineering. See Criteria for Thesis and Project. Independent investigation of advanced character such as analysis and/or design of special engineering systems or projects; critical review of state-of-the-art special topics, as the culminating requirement for the master's degree. Abstract required. Approved for RP grading.
Units: 3

ME 298C. Project Continuation
Pre-requisite: Project ME 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

ME 299. Thesis
Prerequisite: see Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for master's degree. Approved for RP grading.
Units: 3, Repeatable up to 6 units

ME 299C. Thesis Continuation
Pre-requisite: Thesis ME 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

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MILITARY SCIENCE

MS 1. Introduction to the U.S. Army and Critical Thinking
Cadets will learn how the personal development of life skills such as cultural understanding, goal setting, time management, stress management, and comprehensive fitness relate to leadership, officership, and the Army profession. The focus is on developing basic knowledge and comprehension of Army leadership dimensions, attributes and core leader competencies while gaining an understanding of the ROTC program, its purpose in the Army, and its advantages for the student.
Units: 1
MS 2. Introduction to the Profession of Arms
Cadets will learn how Army ethics and values shape the Army and the specific ways that these ethics are inculcated into Army culture. Cadets can expect to explore the seven Army Values, Warrior Ethos, explore the Profession of Arms, Army Leadership and critical communication skills.

Units: 1
Course Typically Offered: Fall, Spring

MS 11. Leadership and Decision Making
Primarily is drawn from the Adaptability Army Learning Area (ALA). The outcomes are demonstrated through Critical and Creative Thinking and the ability to apply Troop Leading Procedures (TLP). Comprehension of the officer’s role in Leading Change by applying Innovative Solutions to Problems in concert with the Principles of Mission Command. The Army Profession is also stressed through leadership forums and a leadership self-assessment.

Units: 2
Course Typically Offered: Fall

MS 12. Army Doctrine and Team Development
Begins the journey to understand and demonstrate Cross-Cultural Competencies as they relate to Army doctrine and how they apply in a combatant commander’s Engagement Strategies. Army Values, Teamwork, and Warrior Ethos and their relationship to the Law of Land Warfare and philosophy of military service are also stressed. The ability to lead and follow is also covered through Team Building exercises in small units up to squad level.

Units: 2
Course Typically Offered: Spring

MS 13. Cadet Basic Camp (CBC)
Prerequisite: permission of instructor. A four-week training program during the summer. This course is a "no obligation" look at the U.S. Army's basic leadership skills and training overview. Training is held and pay provided at Fort Knox, Kentucky.

Units: 3
Course Typically Offered: Fall, Spring

MS 131. Training Management and the Warfighting Functions
Challenges cadets to study, practice, and apply the fundamentals of Army Leadership, Officership, Army Values and Ethics, Personal Development, and small unit tactics at the platoon level. Cadets receive systematic and specific feedback on their leadership attributes values, and core leader competencies from instructor, other ROTC cadre, and MSL IV Cadets using the Cadet Officer Evaluation System (OES).

Units: 3
Course Typically Offered: Fall

MS 132. Applied Leadership in Small Unit Operations
Builds on the lessons learned and leadership attributes gained and developed during MSL301. This is an academically challenging course were Cadets will study, practice, and apply the fundamentals of Army Leadership, Officership, Army Values and Ethics, Personal Development, and small unit tactics at the platoon level. At the conclusion of this course, Cadets will be capable of planning, coordinating, navigating, motivating and leading a squad and platoon in the execution of a mission during a classroom PE, a Leadership Lab, or during a Leader Training Exercise (LTX).

Units: 3
Course Typically Offered: Spring

MS 133. Cadet Advanced Camp (CAC)
Prerequisite: permission of instructor. A four-week summer camp conducted at Fort Knox, KY. Topics include familiarization with U.S. Army weapons systems, military skills, confidence training, light infantry tactics, and leadership and management techniques.

Units: 3
Course Typically Offered: Spring

MS 141. The Army Officer
Develops cadet proficiency in planning, executing and assessing complex operations, functioning as a member of a staff, and providing performance feedback to subordinates. Cadets assess risk, make ethical decisions, and lead fellow Army ROTC cadets. They identify responsibilities of key
staff, coordinate staff roles, and use situational opportunities to teach, train and develop subordinates.

Units: 3
Course Typically Offered: Fall

MS 142. Company Grade Leadership
Explores the dynamics of leading in the complex situations of current military operations in today's operational environment. Cadets examine differences in customs and courtesies, military law, principles of war and rules of engagement in the face of international terrorism. They also explore aspects of interacting with nongovernmental organizations, civilians on the battlefield and host nation support. The course places significant emphasis on preparing cadets for their first unit of assignment.

Units: 3
Course Typically Offered: Spring

MS 150A. Junior Leadership Laboratory
Open to junior year Army ROTC students and cadets. Expands classroom instruction in a weekly laboratory in order to conduct leader development and prepare students and cadets for upcoming training requirements and futures as an Officer in the United States Army. Attendance is mandatory for completion of junior year Army ROTC cadet requirements and for graduation and commission requirements.

Units: 1, Repeatable up to 2 units
Course Typically Offered: Fall, Spring

MS 150B. Senior Leadership Laboratory
Open to senior year Army ROTC cadets. Expands classroom instruction in a weekly laboratory in order to conduct leader development and prepare cadets for upcoming training requirements and futures as an Officer in the United States Army. Attendance is a requirement for graduation and commission for all contracted cadets.

Units: 1, Repeatable up to 2 units
Course Typically Offered: Fall, Spring

MS 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

MS 192. Military History
Prerequisites: permission of instructor. Directed reading in military history and/or the role of the Army in the formulation of national policy in consultation with a U.S. Army Military History Course Instructor.

Units: 3
Course Typically Offered: Fall, Spring

MUSIC

CI 161. Mth Mtl Mus
Units: 3, Repeatable up to 999 units

EHD 154B. Final Student Teaching Seminar - Music
Prerequisites: Concurrent enrollment in EHD 155B. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.

Units: 1

EHD 155B. Studt Tchg Music
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.

Units: 5-10
Course Typically Offered: Fall, Spring

MUSIC 1A. Ear Training and Sight Singing I
Basic drill in the singing and recognition of intervals, triads, and melodies in major and minor keys. Principles of tuning. Dictation of simple melodies in major and minor keys. Harmonic dictation using root position triads. (Course fee, $15)

Units: 1
Course Typically Offered: Fall

MUSIC 1B. Ear Training and Sight Singing II
Prerequisite: Music 1A. Extension of melodic sight-singing and dictation to include passing tones, rhythms in simple/compound meter. Melodies in major and minor keys featuring leaps. Harmonic dictation using inversions of chords; recognition of basic chord patterns. (Course fee, $15)

Units: 1
Course Typically Offered: Spring

MUSIC 1C. Ear Training and Sight Singing III
Prerequisite: MUSIC 1B. Extension of melodic sight-singing and dictation to include non-harmonic tones, more complex rhythms. Drill in singing and recognition of secondary triads and seventh chords. Harmonic dictation using chromaticism; recognition of chord patterns using secondary chords and modulation.

Units: 1
MUSIC 1D. Ear Training and Sight Singing IV
Units: 1

MUSIC 4B. Piano Class II
Prerequisite: MUSIC 9. Music majors and minors only. Playing skills and techniques necessary to prepare for the piano proficiency examination required of all music majors. (Course fee, $20)
Units: 2, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

MUSIC 4C. Piano Class III
Prerequisite: MUSIC 4B. Playing skills and techniques necessary to prepare for the piano proficiency examinations required of all music majors. Continuation of MUSIC 4B. Continuing enrollment in MUSIC 4C is required until the piano proficiency exam is passed. Letter grade only. (Course fee, $20) (Formerly MUSIC 136S)
Units: 2, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

MUSIC 9. Introduction to Music
Not open to music majors. Music theory and aesthetics for the general student. Notation of pitch and rhythm. Reading, playing, and writing melodies with chordal accompaniments. Introduction to computer applications. MUSIC 9 and MUSIC 9A cannot both be taken for credit. G.E. Breadth C1.
Units: 3
Course Typically Offered: Fall, Spring

MUSIC 9A. Introduction to Music
Music theory and aesthetics for the general student. Notation of pitch and rhythm. Reading, playing, and writing melodies with chordal accompaniments. Introduction to computer applications. MUSIC 9 and MUSIC 9A cannot both be taken for credit. (Course fee, $20) G.E. Breadth C1.
Units: 3
GE Area: C1

MUSIC 11. Intermediate Guitar Technique
Introduction to classical guitar, major, minor, and chromatic scales, chord progression, and beginning classical guitar selections.
Units: 2

Course Typically Offered: Spring

MUSIC 12. Flamenco Interpretation
Introduction to basic flamenco guitar techniques; rasgueados, picados, tremolos, basic rhythms, studies and interpretation of flamenco repertoire.
Units: 2

MUSIC 14. Accompanying I
Prerequisite: Jury I. Designed to give the piano student accompanying experience which systematically develops proficiency in skills useful to the accompanist, chamber musician or school music teacher. Skills include sight-reading, transposing, harmonizing, open-score reading and "quick study." (Formerly MUSIC 130T)
Units: 2
Course Typically Offered: Fall

MUSIC 20. Convocation
Department student recitals, advising, and enrichment. Required of all music majors each semester they are registered for classes until the senior recital is completed. CR/NC grading only.
Units: 0
Course Typically Offered: Fall, Spring

MUSIC 31. Euphonium
(Course fee, $20) (Formerly MUSIC 31S and 131S)
Units: 1, Repeatable up to 16 units

MUSIC 31. Tuba
(Course fee, $20) (Formerly MUSIC 31S and 131S)
Units: 1, Repeatable up to 999 units

MUSIC 31. Trumpet
(Course fee, $20) (Formerly MUSIC 31S and 131S)
Units: 1, Repeatable up to 16 units

MUSIC 31. Trombone
(Course fee, $20) (Formerly MUSIC 31S and 131S)
Units: 1, Repeatable up to 16 units

MUSIC 31. Horn
(Course fee, $20) (Formerly MUSIC 31S and 131S)
Units: 1, Repeatable up to 16 units

MUSIC 32. Instrumental, Vocal, & Composition Lessons
Music 31 and MUSIC 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: etudes, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium
until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)

Units: 1, Repeatable up to 16 units

MUSIC 33. Contrabass
(Course fee, $20) (Formerly MUSIC 33S and 133S)
Units: 1, Repeatable up to 16 units

MUSIC 33. Guitar
(Course fee, $20) (Formerly MUSIC 33S and 133S)
Units: 1, Repeatable up to 16 units

MUSIC 33. Violoncello
(Course fee, $20) (Formerly MUSIC 33S and 133S)
Units: 1, Repeatable up to 16 units

MUSIC 33. Violin
(Course fee, $20) (Formerly MUSIC 33S and 133S)
Units: 1, Repeatable up to 16 units

MUSIC 33. Viola
(Course fee, $20) (Formerly MUSIC 33S and 133S)
Units: 1, Repeatable up to 16 units

MUSIC 34. Instrumental, Vocal, & Composition Lessons
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: etudes, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)

Units: 1, Repeatable up to 16 units

MUSIC 35. Bassoon
(Course fee, $20) (Formerly MUSIC 35S and 135S)
Units: 1, Repeatable up to 16 units

MUSIC 35. Clarinet
(Course fee, $20) (Formerly MUSIC 35S and 135S)
Units: 1, Repeatable up to 16 units

MUSIC 35. Flute
(Course fee, $20) (Formerly MUSIC 35S and 135S)
Units: 1, Repeatable up to 16 units

MUSIC 35. Oboe
(Course fee, $20) (Formerly MUSIC 35S and 135S)
Units: 1, Repeatable up to 16 units

MUSIC 38. Instrumental, Vocal, & Composition Lessons
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: etudes, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)

Units: 1, Repeatable up to 16 units

MUSIC 39. Instrumental, Vocal, & Composition Lessons
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: etudes, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)

Units: 1, Repeatable up to 16 units

MUSIC 40. Theory and Literature I
Prerequisite: Concurrent enrollment in MUSIC 9. Fundamentals of music: notation, scales, intervals, keys, triads, concepts of mode and meter, principles of melody writing, and species counterpoint in two voices. Analysis of appropriate
examples from musical literature. Use of music notation software. (Course fee, $15)

Units: 3
Course Typically Offered: Fall

MUSIC 41. Theory and Literature II

Units: 3
Course Typically Offered: Spring

MUSIC 42. Theory and Literature III
Prerequisite: MUSIC 41. Continuation of figured bass and part writing, emphasizing chromaticism, altered chords, and extended tonality. More advanced musical forms. Study of representative musical examples. Use of music notation software.

Units: 3
Course Typically Offered: Fall

MUSIC 43. Theory and Literature IV
Prerequisite: MUSIC 42. Non-tonal harmony (e.g. quartal, pandiatonic). Introduction to set theory and basic twelve-tone technique. Jazz harmony and principles of improvisation. Survey of representative compositions of the twentieth century with respect to style and structure. Use of music notation software.

Units: 3
Course Typically Offered: Spring

MUSIC 47. Introduction to Music Technology
Principles, uses, techniques and applications of music technology. Experience with current hardware and software for sequencing, and synthesis, as well as digital recording and editing.

Units: 2
Course Typically Offered: Fall

MUSIC 48. Seminar in Composition
Prerequisite: MUSIC 47 (may be taken concurrently with permission of instructor). Aural-analytic introduction to/study of origins and developments of major compositional concepts and genres in Western music; exercises and creative writing; and problems of concepts in notation.

Units: 2, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

MUSIC 58. Basic Conducting
Prerequisite: MUSIC 41. Fundamentals of conducting and score-reading; standard patterns and stick technique.

Units: 2
Course Typically Offered: Fall

MUSIC 60T. Topics in Music
Special studies in ethnomusicology or music appreciation, business, education, history, literature, theory, or technology.

Units: 1-3

MUSIC 74. Listener's Guide to Music
Exploration of a wide range of musical styles (past, present, classical, and popular) through guided practical experiences and the development of an aesthetic sensitivity for music of various cultures. G.E. Breadth C1.

Units: 3
Course Typically Offered: Fall, Spring

GE Area: C1

MUSIC 75. History of Rock and Roll
The History of Rock and Roll and its musical precendents: The music, musical styles and musicians of Rock and Roll, as well as the most important cultural, sociological and philosophical factors that influenced and were influenced by Rock and Roll.

Units: 3
Course Typically Offered: Fall, Spring

GE Area: C1

MUSIC 102CC. Community Chorus
Units: 1, Repeatable up to 99 units

MUSIC 102CS. Chamber Singers
Units: 1, Repeatable up to 99 units

MUSIC 102FE. Flute Ensemble
Units: 1, Repeatable up to 99 units

MUSIC 102GC. Gospel Choir
(Same as Music 102GC) Performance of a variety of inspirational songs reflecting the African American cultural experience. Participation through rehearsals, activities, programs, and field trips.

Units: 1, Repeatable up to 99 units

MUSIC 102GE. Guitar Ensemble
Units: 1, Repeatable up to 99 units

MUSIC 102JE. Jazz Ensemble
Units: 1, Repeatable up to 99 units

MUSIC 102MC. Men's Chorus
Units: 1, Repeatable up to 99 units

MUSIC 102PB. Basketball Band
Units: 1, Repeatable up to 99 units
MUSIC 102PE. Perc Ensemble
Units: 1, Repeatable up to 99 units

MUSIC 102SE. String Ensemble
Units: 1, Repeatable up to 99 units

MUSIC 102US. University Singers
Study and performance of literature for university singers (US).
Units: 1, Repeatable up to 99 units
Course Typically Offered: Fall, Spring

MUSIC 102WC. Women's Chorus
Units: 1, Repeatable up to 99 units

MUSIC 102WWE. WWD Ensemble
Units: 1, Repeatable up to 99 units

MUSIC 103CC. Concert Choir
Units: 1, Repeatable up to 99 units

MUSIC 103JO. Jazz Orchestra
Units: 1, Repeatable up to 99 units

MUSIC 103MB. Marching Band
Units: 1, Repeatable up to 99 units

MUSIC 103SB. Symphonic Band
Units: 1, Repeatable up to 99 units

MUSIC 103SO. Symphony Orchestra
Units: 1, Repeatable up to 99 units

MUSIC 103WO. Wind Orchestra
Units: 1, Repeatable up to 99 units

MUSIC 110. Voice for Non-Music Majors
Acquaints the non-music major with basic principles of good singing; applies principles of good singing to different song styles; and helps the non-music major voice student develop and strengthen performing skills. (Formerly MUSIC 130T section)
Units: 1, Repeatable up to 99 units

MUSIC 111. Advanced Guitar Technique
Advanced studies in classical guitar works, diatonic major and minor scales, chord progression, and interpretation of classical guitar repertoire.
Units: 2

MUSIC 112. Advanced Flamenco Interpretation
Special studies in flamenco guitar interpretation including advanced techniques, traditional rhythms, improvisations, and analysis of music, songs and dance. For majors and non-majors.
Units: 2

MUSIC 113. Vocal Pedagogy
Open to upper-division vocal performance majors only. Prerequisites: passing of Jury II, all lower-division music core courses, as well as at least one semester of music history, MUSIC 161A or MUSIC 161B. Principles, teaching procedures, materials, and physiology of the voice, and historical background for teaching solo and group lessons.
Units: 2

MUSIC 114. Accompanying II
Prerequisite: MUSIC 14. Student will perform regularly, accompanying one or more soloists or groups throughout the semester by assignment. In addition, there will be readings and exercises to further develop skills studied in MUSIC 14.
Units: 2
Course Typically Offered: Spring

MUSIC 115. Advance Guitar for the Classroom Teacher
Continued development of guitar skills for the general music teacher. Intermediate group instruction on the acoustic guitar with focus on techniques and materials appropriate for accompanying classroom music. Topics include chord structures, strumming, picking style, and fingering techniques.
Units: 2
Course Typically Offered: Spring

MUSIC 117BB. Bulldog Beat
Units: 1, Repeatable up to 99 units

MUSIC 117BQ. Brass Quintet
Units: 1, Repeatable up to 99 units

MUSIC 117CM. Chamber Music
Units: 1, Repeatable up to 99 units

MUSIC 117JC. Jazz Combo
This course is a non-conducted ensemble that studies and performs small group jazz literature including original compositions and arrangements by students and commissions by professional ensembles. Two weekly rehearsals will focus on ensemble skills and other skills idiosyncratic to jazz performance. (repeatable for credit)
Units: 1, Repeatable up to 99 units

MUSIC 117KE. Keyboard Ens
MUSIC 117PQ. Pres Quintet  
Units: 1, Repeatable up to 99 units

MUSIC 118BW. Band Wrkshp  
Units: 1, Repeatable up to 99 units

MUSIC 118OPR. Opera Production  
Units: 1, Repeatable up to 99 units

MUSIC 118OT. Opera Theatre  
Units: 1, Repeatable up to 99 units

MUSIC 118PW. Percussion Wrksp  
Units: 1, Repeatable up to 99 units

MUSIC 118VW. Vocal Wrksp  
Units: 1, Repeatable up to 99 units

MUSIC 119. Voice Techniques and Materials  
Prerequisite: MUSIC 41. Principles, playing and teaching procedures, and materials for teaching voice in the elementary school, high school, and community college. (Course fee, $20)  
(Formerly MUSIC 119Q)  
Units: 1  
Course Typically Offered: Fall

MUSIC 120. Class Piano Techniques and Materials  
Prerequisites: MUSIC 41, passed piano proficiency. Study of techniques and materials appropriate for teaching class piano to beginners in elementary school, middle school, high school, and community college music classrooms.  
Units: 1

MUSIC 122A. String Techniques and Materials  
Prerequisite: MUSIC 41. Principles and physics of stringed instruments; playing procedures and materials for teaching beginning string students from elementary school through community college. (Course fee, $20)  
Units: 2

MUSIC 124A. Woodwind Techniques and Materials  
Prerequisite: MUSIC 41. Principles and physics (including common transpositions) of woodwind instruments; playing procedures and materials for teaching beginning woodwind students from elementary school through community college. (Course fee, $20)  
Units: 2

MUSIC 126. Percussion Techniques and Materials  
Prerequisite: MUSIC 41. Principles, playing and teaching procedures, and materials for teaching percussion instruments in the elementary school, high school, and community college. (Course fee, $20)  
Units: 2

MUSIC 127A. Brass Techniques and Materials  
Prerequisite: MUSIC 41. Principles and physics (including common transpositions) of brass instruments; playing procedures and materials for teaching beginning brass students from elementary school through community college. (Course fee, $20) (Formerly MUSIC 119I, Music 127)  
Units: 2

MUSIC 129. Reed Making  
Required for oboe and bassoon players. Individual or group supervision in all aspects of the art of reed making. Repeatable for credit until such time as student and professor mutually agree that supervision is no longer necessary. CR/NC grading only.  
Units: 1, Repeatable up to 99 units

MUSIC 130T. Topics in Performance  
Special studies in vocal or instrumental music, including topics such as accompanying, electronic instruments, mixed chamber music.  
Units: 2, Repeatable up to 12 units

MUSIC 130T. Kodaly: A Choral Component  
Units: 1, Repeatable up to 999 units

MUSIC 130T. Cho Cond RF Skls  
Units: 1

MUSIC 131. Euphonium  
(Course fee, $20)  
Units: 1, Repeatable up to 999 units

MUSIC 131. Trumpet  
(Course fee, $20)  
Units: 1, Repeatable up to 999 units

MUSIC 131. Tuba  
(Course fee, $20)  
Units: 1, Repeatable up to 999 units

MUSIC 131. Trombone  
(Course fee, $20)  
Units: 1, Repeatable up to 999 units
MUSIC 131. Horn
(Course fee, $20)
Units: 1, Repeatable up to 999 units

MUSIC 131J. Instrumental, Vocal, & Composition Lessons
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: etudes, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)
Units: 1, Repeatable up to 16 units

MUSIC 132. Instrumental, Vocal, & Composition Lessons
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: etudes, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)
Units: 1, Repeatable up to 16 units

MUSIC 132J. Instrumental, Vocal, & Composition Lessons
MUSIC 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: etudes, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)
Units: 1, Repeatable up to 16 units

MUSIC 133. Contrabass
(Course fee, $20)
Units: 1, Repeatable up to 999 units

MUSIC 133. Guitar
(Course fee, $20)
Units: 1, Repeatable up to 999 units

MUSIC 133. Violoncello
(Course fee, $20)
Units: 1, Repeatable up to 999 units

MUSIC 133. Viola
(Course fee, $20)
Units: 1, Repeatable up to 999 units

MUSIC 133J. Instrumental, Vocal, & Composition Lessons
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: etudes, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)
Units: 1, Repeatable up to 16 units

MUSIC 134. Instrumental, Vocal, & Composition Lessons
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: etudes, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)
MUSIC 134J. Instrumental, Vocal, & Composition Lessons  
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: études, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)

Units: 1, Repeatable up to 16 units

MUSIC 138. Instrumental, Vocal, & Composition Lessons  
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: études, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)

Units: 1, Repeatable up to 16 units

MUSIC 135. Bassoon  
(Course fee, $20)

Units: 1, Repeatable up to 999 units

MUSIC 135. Saxophone  
(Course fee, $20)

Units: 1, Repeatable up to 999 units

MUSIC 135. Oboe  
(Course fee, $20)

Units: 1, Repeatable up to 999 units

MUSIC 135. Flute  
(Course fee, $20)

Units: 1, Repeatable up to 999 units

MUSIC 135. Clarinet  
(Course fee, $20)

Units: 1, Repeatable up to 999 units

MUSIC 135J. Instrumental, Vocal, & Composition Lessons  
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: études, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)

Units: 1, Repeatable up to 16 units

MUSIC 138S. Instrumental, Vocal, & Composition Lessons  
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: études, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)

Units: 1, Repeatable up to 16 units

MUSIC 139. Instrumental, Vocal, & Composition Lessons  
Music 31 and 131 through 39 and 139 and 131J through 135J include technical, stylistic, and aesthetic performance studies of standard literature: études, solo, chamber, and large ensemble music. All music majors (except students enrolled in the Music as a Liberal Art Option) are required to enroll in a declared performing medium until completion of senior recital. Concurrent enrollment in appropriate major ensemble required. Passing Jury II required to enroll in MUSIC 131 through 139. Students admitted to the jazz option must complete 4 units of Music 31 through 38 and pass Jury I to enroll in Music 131J through 135J. MUSIC 148 includes individual instruction in original composition in a variety of media, forms, and styles. All courses are repeatable for credit. (All courses require a $20 course fee.)

Units: 1, Repeatable up to 16 units
MUSIC 140T. Topics in Theory  
Prerequisite: MUSIC 43. Analytical study of specific composers, genres, styles, and diverse approaches to music theory.  
Units: 3, Repeatable up to 9 units

MUSIC 141. Seminar in Modal Counterpoint  
Prerequisite: MUSIC 43. Polyphony of the 15th and 16th centuries; analysis and composition of melodic lines, simple counterpoint, types of imitation; writing motets with text in two or more parts.  
Units: 3

MUSIC 142. Seminar in Canon and Fugue  
Prerequisite: MUSIC 42. Polyphony of the 17th and 18th centuries; analysis and composition of melodic lines, imitative, strict and invertible counterpoint, canon, and fugue.  
Units: 3

MUSIC 144. Form and Analysis  
Prerequisite: MUSIC 42. Principles of musical form and analysis as applied to musical repertoire. Includes an introduction to the Schenker method of music analysis and review of chromatic harmony as necessary.  
Units: 3  
Course Typically Offered: Fall

MUSIC 147. Digital Music Production  
Prerequisite: MUSIC 9 and MUSIC 47; or permission of Instructor. Lecture and discussion on digital audio design for various forms of media, and practical experience designing and producing audio and music in a digital format.  
Units: 3

MUSIC 148. Composition  
Prerequisite: 2 semesters of MUSIC 48 and successful completion of Jury 1. Includes individual instructions in original composition in a variety of media, forms, and styles.  
Units: 1, Repeatable up to 10 units

MUSIC 153. Children's Music  
Open to nonmajors only. Introduction to song literature and singing games suitable for children. Development of in-tune singing, ear training, and sight-singing skills.  
Units: 3  
Course Typically Offered: Fall, Spring

MUSIC 154. Music for the Elementary Classroom  
Music majors only. Prerequisites: MUSIC 41, passed piano proficiency. Song literature, musical games, and basic skills for the recorder and guitar appropriate for use in the elementary music classroom. Course content derived from the folk music and musical contributions of world cultures.  
Units: 3

MUSIC 155. Advanced Elementary Classroom Techniques  
Prerequisite: MUSIC 153 for students not majoring in music. Individual research on the place and functions of music in preschool and elementary school curriculum; selection, discussion, and analysis of musical materials including state texts; planning activities that enable children to develop aesthetic sensitivity, musical skills, and understanding.  
Units: 3

MUSIC 158A. Advanced Instrumental Conducting  
Prerequisite: MUSIC 58. Advanced instrumental conducting and score reading; rehearsal techniques; problems in tempo, balance, style, and phrasing; mixed meters and other contemporary problems. Assigned projects in conducting.  
Units: 2, Repeatable up to 4 units

MUSIC 158B. Advanced Choral Conducting  
Prerequisite: MUSIC 58. Advanced choral conducting and score reading; rehearsal techniques; problems in tempo, balance, style, and phrasing; mixed meters and other contemporary problems. Assigned projects in conducting.  
Units: 2, Repeatable up to 4 units

MUSIC 159. Marching Band Techniques  
Prerequisite: MUSIC 41. Offered fall semester only. Practical and creative aspects of producing musical shows and marching formations for athletic events, parades, and public ceremonies. Use of computer programs.  
Units: 2  
Course Typically Offered: Fall

MUSIC 160T. Topics in Music History and Literature  
Study of selected musical genres, composers, and other specialized topics.  
Units: 1-3

MUSIC 160TZ. Monarchs: Market/Music 18th Century London  
Units: 3, Repeatable up to 9 units

MUSIC 161A. Survey of Western Art Music I  
Prerequisite: MUSIC 41, MUSIC 74 and junior-level status(60 units or more). Study of representative composers, genres, and major works. Emphasis on changing concepts of "music," development of styles, and relation of music to the history of ideas and to relevant institutions and social customs up to approximately 1800 A.D.  
Units: 3
MUSIC 161B. Survey of Western Art Music II  
Prerequisite: MUSIC 41, MUSIC 74 and junior-level standing (60 units or more). Study of representative composers, genres, and major works. Emphasis on changing concepts of "music," development of styles, and relation of music to the history of ideas and to relevant institutions and social customs Beethoven to the present.  
Units: 3  

Course Typically Offered: Spring  

MUSIC 162. Jazz Pedagogy  
Prerequisite: MUSIC 43. Junior music major. Basic rehearsal techniques for small and large ensembles of the secondary and collegiate levels. Survey of pedagogical concepts, performance practices, and performance repertory for jazz ensembles.  
Units: 2  

MUSIC 163. Jazz History  
Prerequisite: Music 43. Junior music major. The history of Jazz in America through study of important innovators, performers, composers, and improvisers.  
Units: 3  

MUSIC 164. Jazz Theory & Improvisation I  
Prerequisite: MUSIC 43, concurrent enrollment in MUSIC 102JEA or MUSIC 102JEB. Provides basic and intermediate foundation in theory and improvisational styles within the jazz idiom.  
Units: 3  

MUSIC 165. Jazz Theory Improvisation II  
Prerequisite: MUSIC 164, concurrent enrollment in MUSIC 102JEA or MUSIC 102JEB. Provides intermediate and advanced foundation in theory and improvisational styles within the jazz idiom.  
Units: 3  

MUSIC 166. Piano Pedagogy  
Piano majors only. Principles, playing and teaching procedures, and materials for teaching individual and small group piano lessons to students from elementary school age through community college. (Course fee, $20) (Formerly MUSIC 119P)  
Units: 2  

MUSIC 167. Keyboard Literature  
Piano majors only. A historical survey of the standard repertoire for the piano. (Formerly MUSIC 176T section)  
Units: 2  

MUSIC 169. Instrumental Techniques and Materials  
Prerequisites: MUSIC 43, MUSIC 158A or MUSIC 158B, pass conducting proficiency, MUSIC 121, MUSIC 122A, MUSIC 124A, MUSIC 126, MUSIC 127A. Offered spring semester only. Principles, procedures, literature, and materials for use in instrumental music programs in the public schools. (Expenses for off-campus visits will be incurred by student)  
Units: 2  

Course Typically Offered: Fall, Spring  

GE Area: IC  

MUSIC 170A. Music of the Americas: Latin America  
Prerequisites: G.E. Foundation and Breadth Area C. Examination of the musics of Latin America with special emphasis on art-music and its relationship to folk-popular musics as influenced by social, ideological, and political cross-currents. G.E. Integration IC.  
Units: 3  

Course Typically Offered: Fall, SpringGE Area: IC  

MUSIC 170B. Music of the Americas: United States  
Representative styles and genres of music in the United States with particular attention to social contexts of repertories and music interactions between elite and popular traditions.  
Units: 3  

Course Typically Offered: Spring  

GE Area: IC  

MUSIC 171. Introduction to the World's Music  
Prerequisites: G.E. Foundation and Breadth Area C. Exploration of selected musics of the world from the perspective of ethnomusicology or study of music as an aesthetic communication that possesses meaning only in relation to specific, situated sociocultural contexts. Study of selected musical forms and their relationship to social formations. G.E. Integration IC.  
Units: 3  

Course Typically Offered: Fall, SpringGE Area: IC  

MUSIC 171Z. Introduction to the World's Music  
Prerequisites: G.E. Foundation and Breadth Area C. Exploration of selected musics of the world from the perspective of ethnomusicology or study of music as an aesthetic communication that possesses meaning only in relation to specific, situated sociocultural contexts. Study of selected musical forms and their relationship to social formations. G.E. Integration IC.  
Units: 3  

GE Area: IC  

MUSIC 172. Vocal Literature  
Prerequisite: MUSIC 41. For students who major or minor in vocal music. A historical survey of the standard repertoire for the voice.  
Units: 2
Course Typically Offered: Spring

MUSIC 175T. Topics in Instrumental Pedagogy
Prerequisites: playing and teaching procedures, and materials for teaching individual instrumental (flute, oboe, clarinet, bassoon, horn, trumpet, trombone, tuba, violin, viola, violoncello, contrabass, harp, guitar, percussion) lessons to students of varying skill and artistic levels.
Units: 2

Course Typically Offered: Spring

MUSIC 179. Choral Techniques and Materials
Prerequisites: passed piano proficiency; MUSIC 43, MUSIC 158A or MUSIC 158B. Principles, choral techniques, literature, and materials for use in vocal music programs in the public schools. (Expenses for off-campus visits will be incurred by student.)
Units: 2

Course Typically Offered: Spring

MUSIC 179L. Choral Techniques Lab
Prerequisites: passed piano proficiency. Piano skills necessary for music educators. Students learn to read opera scores at the piano, lead rehearsals from the piano, play vocal exercises for choirs, and increase sightreading ability. Concurrent enrollment in MUSIC 179 required. CR/NC grading only.
Units: 1

MUSIC 180. Children’s Choirs: Techniques and Literature
Prerequisite: MUSIC 155. Basic overview of materials, techniques, and procedures applicable to the choral experience at the elementary level. Topics include conducting for the elementary school choral director, vocal pedagogy for children, and a survey of appropriate choral literature.
Units: 3

MUSIC 181. Jazz Composition & Arranging
Prerequisites: MUSIC 43, Junior Music Major in the Jazz Option and permission of instructor. Study of composition and arranging in the jazz idiom. Skills and creative concepts necessary for the design and creation of jazz arrangements for various-sized ensembles.
Units: 3

MUSIC 182. Basic Arranging
Prerequisites: MUSIC 1B, MUSIC 42. Basic course in scoring and arranging for band, orchestra and choral ensembles. Ranges, transposition, technical capabilities of band and orchestra instruments and the voice. Emphasis on arranging for musicians typically found in elementary and secondary schools. Use of computer notation and sequencing programs. (Course fee, $15)
Units: 2

Course Typically Offered: Fall

MUSIC 183. Advanced Choral Arranging
Prerequisites: MUSIC 182. Advanced course in scoring and arranging for various sizes and types of choral ensembles. Studies in depth composing and arranging in various choral idioms. Use of computer notation and sequencing programs. (Course fee, $15)
Units: 3, Repeatable up to 6 units

Course Typically Offered: Spring

MUSIC 184. Advanced Instrumental Arranging
Prerequisite: MUSIC 182. Advanced course in scoring and arranging for band and orchestra instruments. Studies in depth problems of idiomatic writing for the instruments and sonorities. Use of computer notation and sequencing programs. (Course fee, $15)
Units: 3, Repeatable up to 6 units

MUSIC 185A. Lyric Diction I
Prerequisite: MUSIC 41 and successful completion of one year of Music 39 or MUSIC 139 or permission of instructor. For students who major or minor in vocal music. Introductory study of the International Phonetic Alphabet and its application to singing in English, Italian, German, French, Spanish and Latin.
Units: 2

MUSIC 185B. Lyric Diction II
Prerequisite: MUSIC 185A. For vocal performance majors or with permission of instructor. Singers’ advanced diction studies of English, Italian, German, French, and Spanish, as well as other languages used in the standard Western art music vocal repertoire.
Units: 2

MUSIC 186. Arranging and Composing Using MIDI
Prerequisite: MUSIC 182. Arranging and composing using MIDI sequencing. Students record and edit musical material in the MIDI/computer-based production facility. Finished works will be exported to music notation programs and recorded to digital audio media. Works will be performed in public concerts. (Formerly MUSIC 130T)
Units: 3

MUSIC 187. Pop Music: Jazz and Rock
Prerequisites: G.E. Foundation and Breadth Area C. Survey of styles, trends, and the musical and cultural roots of popular music, jazz, and rock in the United States, Great Britain, and the West Indies. Guidelines for listening to and writing about music. G.E. Integration IC.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: IC

MUSIC 187Z. Pop Music: Jazz and Rock
Prerequisites: G.E. Foundation and Breadth Area C. Survey of styles, trends, and the musical and cultural roots of pop music, jazz, and rock in the United States, Great Britain, and the West Indies. Guidelines for listening to and writing about music. G.E. Integration IC.

Units: 3
GE Area: IC

MUSIC 190. Independent Study
See Academic Placement -- [-LINK-]. Approved for SP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

MUSIC 191. Readings in Music
Prerequisite: permission of instructor. In-depth readings and discussions in individual conferences; subjects to be selected by students and their advisers. May be preliminary research in connection with thesis topic. Approved for RP grading.

Units: 1-3

MUSIC 198. Senior Recital or Project
Prerequisites: passed piano proficiency, senior standing, approval of major applied music instructor or adviser. Preparation and presentation of a satisfactory senior recital or project.

Units: 1-2
Course Typically Offered: Fall, Spring

MUSIC 204. Graduate Music Theory Survey
Prerequisite: graduate standing. Required of all M.A. candidates in music. A comprehensive survey of the disciplines of harmony, counterpoint, and analysis, with respect to the music of the 18th through 20th centuries, with an emphasis on review and reinforcement. Topics include species counterpoint, figured bass, voice leading, principles of Schenkerian analysis, and basic atonal and twelve-tone theory.

Units: 3

MUSIC 210. Studies in Performance
Open only to master's degree students majoring in performance or to other master's students by permission of instructor. Prerequisite: MUSIC 220. Individually directed studies in performing or conducting instrumental or vocal music; historical and theoretical interpretation applied in preparation for public recitals and concerts of works from the standard literature of all periods in the student's major performance area. Approved for RP grading.

Units: 2, Repeatable up to 6 units

MUSIC 211. Graduate Performance Ensemble
Prerequisite: graduate standing or permission of instructor. Ensemble performance of instrumental or choral music with emphasis on historical and theoretical interpretation of advanced level literature. This course includes technical, stylistic, and aesthetic elements of musical literature, rehearsal, and public performance.

Units: 2, Repeatable up to 6 units

MUSIC 220. Seminar in Research Methods and Bibliography
Bibliography, sources, and research techniques necessary for graduate study in music. Individual projects and research; satisfies graduate writing requirement. Required of all students working for the master's degree in music.

Units: 3

MUSIC 221. Foundations of Music Education

Units: 3

MUSIC 234. Studies in Composition
Open only to master's degree students majoring in composition. Prerequisite: MUSIC 220. Individually directed studies in composition with contemporary techniques of an extended work equivalent in substance to a sonata, cantata, or other composition of major proportions. Approved for RP grading.

Units: 2, Repeatable up to 6 units

MUSIC 240T. Advanced Topics in Music Theory
Prerequisite: MUSIC 204 and MUSIC 220. Advanced analytical study of specific composers, genres, styles, and diverse interdisciplinary approaches to music theory. A final paper or project is a central component of this course.

Units: 3

MUSIC 240T. Analysis of Non-Western Music
This course will expand the student's analytical skills by applying the basic tools for analysis to music beyond the Western Canon. Through examination of pitch, rhythm, and timbre, students will sharpen their listening and thinking skills, and they will write about their observations, either through a comparative analysis or through a thorough analysis of a selected work of non-Western music. Class sections will focus on listening skills and clarifying the analytical process, readings will include selections about theoretical analysis, aboriginal music, musicology, and non-Western culture. Weekly listening logs will be kept, and various music will be assigned for listening.

Units: 3
MUSIC 257A. Seminar in Choral Conducting
Prerequisite: MUSIC 158A or MUSIC 158B or equivalent. Advanced study of conducting choral music in the Western tradition. Students will organize and complete projects that address the preparation, interpretation, rehearsing, and performance of choral music. (Formerly MUSIC 258T)
Units: 3

MUSIC 258T. Topical Seminars in Conducting
Prerequisite: MUSIC 158A or MUSIC 158B. Advanced studies in selected topics related to conducting. Projects with particular attention to rehearsal techniques, score preparation, and interpretation.
Units: 1-3

MUSIC 259T. Topical Seminars in Vocal Music
The study of advanced level song literature, song interpretation, and performance practice as applied to standard and special vocal repertoire.
Units: 1-3

MUSIC 260T. Topical Seminars in Music History
Prerequisite: MUSIC 220. Current methods, resources, and issues in music history, with application to specific topics focusing on major Western composers, major genres, landmark works or repertories, issues in musical aesthetics and criticism.
Units: 3, Repeatable up to 9 units

MUSIC 267. Seminar in Contemporary Music
Prerequisite: MUSIC 220. Critical and analytical study of the sources, selected works, and composers of the 20th century, with particular emphasis on avant-garde movements and schools. A term paper will be a central requirement for successful completion of this course.
Units: 3

MUSIC 269T. Topical Seminars in Instrumental Music
The study of advanced level instrumental literature, score interpretation, and performance practices as they apply to standard and special in strumental literature.
Units: 1-3

MUSIC 277. Seminar in American Music
Prerequisite: MUSIC 220. Critical and analytical study of the historical sources, selected works, and composers in the United States from 1620 A.D. to the present. A term paper will be a central requirement for successful completion of this course.
Units: 3

MUSIC 279T. Topical Seminars in Choral Music
The study of advanced level choral literature, performance practices, interpretation, and rehearsal techniques pertinent to various choral ensembles.
Units: 1-3

MUSIC 285. Graduate Lyric Diction
Prerequisite: MUSIC 185B or permission of instructor. For graduate vocal performance/choral conducting majors. Advanced diction studies in German, Spanish, French, Italian, Russian, and English.
Units: 2

MUSIC 290. Independent Study
See Academic Placement -- [-LINK-]. Approved for SP grading.
Units: 1-3

MUSIC 291. Readings in Music
Prerequisite: permission of instructor. Readings in depth and discussions in individual conferences; subject to be selected by students and their advisers. May be preliminary research in connection with thesis topic. Approved for SP grading.
Units: 1-3

MUSIC 298. Project
See Criteria for Thesis and Project. Completion of an approved project appropriate to the candidate's area of specialization. To be used in place of MUSIC 299 for majors in performance, composition, and as an option for majors in music education. The graduate recital, for performance majors, will consist of an approved program containing at least one hour of music. Approved for RP grading.
Units: 3

MUSIC 298C. Project Continuation
Pre-requisite: Project 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

MUSIC 299. Thesis
Prerequisite: See [-LINK-]. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for SP grading.
Units: 3

MUSIC 299C. Thesis Continuation
Pre-requisite: Thesis 298. For continuous enrollment while completing the thesis. May enroll twice with department approval.
Units: 0
approval. Additional enrollments must be approved by the Dean of Graduate Studies.

Units: 0

SCIENCE & MATH INTERDISCIP

CSM 10. The Scientific Method
Practice in the application of the scientific method to locally relevant problems and challenges. The evaluation of inductive and deductive arguments coupled with the evaluation of experimental data to develop and test scientific hypotheses. GE Area A3.

Units: 3
Course Typically Offered: FallGE Area: A3

CSM 15. Evidence Based Decision Making
Practice in the evaluation and use of quantitative evidence in reasoned decision making. Topics include uncertainty, significance, trends, experimental design, and causality. GE Area E.

Units: 3
Course Typically Offered: FallGE Area: E1

NSCI 1. The Art and Practice of Medicine
Primarily for prehealth care students. Delivery of health care today. Concepts of the art of medicine presented by community physicians and specialists. CR/NC grading only.

Units: 1, Repeatable up to 4 units

NSCI 1A. Integrated Science: Physics and Chemistry
Prerequisite: MATH 10A with a grade of C or higher. Integrated science: basic concepts and misconceptions in physics and chemistry and their relation to the everyday environment. Memorable demonstrations in lecture, household-related experiments, and experiments of special interest to K-6 teachers. (3 lecture, 2 lab hours) Meets G.E. B1 requirement only for liberal studies majors.

Units: 4
GE Area: B1LS

NSCI 4. Science and Nonsense: Facts, Fads, and Critical Thinking
Use of language, thought, and logic in science, distinguishing science fact from science fiction. Inductive and deductive methods, judgment, opinion, belief, and knowledge. A critical examination of contemporary pseudoscientific issues (creation "science," UFOs, astrology, etc.) G.E. Foundation A3.

Units: 3

NSCI 40T. Topics in Natural Sciences
Prerequisite: permission of instructor. Interdisciplinary topics covering such subject matter areas as environmental studies and the impact of science on society.

Units: 1-4

NSCI 40T. AEW Biology - BIOL 102
These courses are developed to meet the CSUF Louis Stokes Alliance for Minority Participation program Phase III grant goal of increasing minority student readiness for entry into graduate science/technology programs. They are designed to enhance learning and proficiency through uniquely structured workshops emphasizing attainment of concepts via group problem-solving methods. The 2-hour per week courses focus on subject topics, are led by student facilitators under faculty guidance, and provide learning material in PHYS 4B.

Units: 1, Repeatable up to 12 units

NSCI 40T. AEW Physics - PHYS 4B
These courses are developed to meet the CSUF Louis Stokes Alliance for Minority Participation program Phase III grant goal of increasing minority student readiness for entry into graduate science/technology programs. They are designed to enhance learning and proficiency through uniquely structured workshops emphasizing attainment of concepts via group problem-solving methods. The 2-hour per week courses focus on subject topics, are led by student facilitators under faculty guidance, and provide learning material in PHYS 4B.

Units: 1, Repeatable up to 12 units

NSCI 40T. AEW Math - MATH 77
These courses are developed to meet the CSUF Louis Stokes Alliance for Minority Participation program Phase III grant goal of increasing minority student readiness for entry into graduate science/technology programs. They are designed to enhance learning and proficiency through uniquely structured workshops emphasizing attainment of concepts via group problem-solving methods. The 2-hour per week courses focus on subject topics, are led by student facilitators under faculty guidance, and provide learning material in MATH 77.

Units: 1, Repeatable up to 12 units

NSCI 40T. AEW Physics - PHYS 4A
These courses are developed to meet the CSUF Louis Stokes Alliance for Minority Participation program Phase III grant goal of increasing minority student readiness for entry into graduate science/technology programs. They are designed to enhance learning and proficiency through uniquely structured workshops emphasizing attainment of concepts via group problem-solving methods. The 2-hour per week courses focus on subject topics, are led by student facilitators under faculty guidance, and provide learning material in PHYS 4A.

Units: 1, Repeatable up to 12 units
NSCI 40T. AEW Chemistry - CHEM 1A/1B
These courses are developed to meet the CSUF Louis Stokes Alliance for Minority Participation program Phase III grant goal of increasing minority student readiness for entry into graduate science/technology programs. They are designed to enhance learning and proficiency through uniquely structured workshops emphasizing attainment of concepts via group problem-solving methods. The 2-hour per week courses focus on subject topics, are led by student facilitators under faculty guidance, and provide learning material in Chem 1A, 1B, 128A & 128B.

Units: 1, Repeatable up to 12 units

NSCI 40T. AEW Math - Math 76
These math courses are developed to meet the CSU Fresno Louis Stokes-Alliance for Minority Participation (LS-AMP) program Phase III grant goal of increasing minority student readiness for entry into graduate and doctoral science/mathematics programs. It is designed to enhance learning and proficiency in mathematics in the form of a uniquely structured workshop emphasizing attainment of concepts via group problem-solving methods. The two hour per week courses focus on subject topics are led by student facilitators who, under faculty guidance, provide learning material and direction in problem-solving to class participants in Math 75 & 76.

Units: 1, Repeatable up to 12 units

NSCI 40T. AMP Biology Academic Excellence Workshop
These Biological Sciences courses are developed to meet the CSU, Fresno Louis Stokes-Alliance for Minority Participation (LS-AMP) program Phase III grant goal of increasing minority student readiness for entry into graduate and doctoral science and mathematics programs. It is designed to enhance learning and proficiency in science in the form of uniquely structured workshops emphasizing attainment of concepts via group problem-solving methods. The two hour per week courses focus on subject topics led by student facilitators who, under faculty guidance, provide learning material and direction in problem-solving to class participants in BioSci 1A & 1B.

Units: 1, Repeatable up to 12 units

NSCI 40T. AEW Math - Math 75
This course is one of several facilitated Science/Mathematics workshops required by the CSU-AMP Program specifically for students who are participants in the AMP Program. The CSU-AMP, or California State University Alliance for Minority Participation in Science, Engineering, and Mathematics is a collaborative effort among the National Science Foundation (NSF) the CSU systems approximately 30 California Community Colleges, and a number of research institutions and industrial companies to promote and support minority students in Science, Engineering, and Mathematics (SEM) studies. Using in part the Treisman collaborative model, there would be two hours of weekly group activities based not on remediation but on an honor curriculum format.

Units: 1, Repeatable up to 12 units

NSCI 100. Chemistry for Liberal Studies
Not open to engineering students. Prerequisites: NSCI 1A and NSCI 1B. Emphasizes chemistry as a process rather than a collection of facts, laws, and theories, and content in California K-8 Science Standards. Designed for students planning careers in K-8 teaching. S sections include a service-learning requirement.

Units: 3

NSCI 100S. Chemistry for Liberal Studies
Not open to engineering students. Prerequisites: NSCI 1A and NSCI 1B. Emphasizes chemistry as a process rather than a collection of facts, laws, and theories, and content in California K-8 Science Standards. Designed for students planning careers in K-8 teaching. S sections include a service-learning requirement.

Units: 3

NSCI 101. Biology for Liberal Studies
Not open to engineering students. Prerequisites: NSCI 1A and NSCI 1B. Emphasizes biology as a process rather than a collection of facts, laws, and theories. Designed especially for students planning careers as elementary school teachers.

Units: 3

NSCI 102. Physics and Astronomy for Liberal Studies
Not open to engineering students. Prerequisites: NSCI 1A and NSCI 1B. Introductory physics and astronomy with emphasis on hypothesis formation, analysis, and testing. Everyday observations and materials will be used to the extent possible to facilitate the transfer of concepts and techniques to the elementary classroom. (2 lecture, 2 lab hours)

Units: 3

NSCI 106. Reigning Theories of Science
Examination of historically important scientific theories from the perspective of science as a human enterprise. Role of philosophy, religion, culture, and nationalism in the acceptance/rejection of theories. Research paper, class presentation required.

Units: 3

NSCI 110I. Practicum in Medicine
Prerequisite: permission of instructor. The Academic Research Associate Program is offered in association with the UCSF Fresno Medical Education Program and the Department of Emergency Medicine. Premedical students working at University Medical Center with health professionals will aid biomedical research efforts and have opportunities for clinical observation. CR/NC grading only.
NSCI 115. Environmental Earth and Life Science
Prerequisites: completion of General Education Foundation and Breadth Area B. Environmental problems related to population, energy and resource use, and pollution. Examines social and ethical issues along with technological and scientific factors. Independent work on case studies required. G.E. Integration IB.

Units: 3
GE Area: IB

NSCI 116. Energy, Technology, and Society
Not open to engineering students. Prerequisites: NSCI 1A and NSCI 1B. Examines the role that chemistry, physics, and technology play in our society. Designed especially for students planning careers as elementary school teachers.

Units: 3

NSCI 120. Biotechnology and Its Impact on Society
Prerequisites: completion of General Education Foundation and Breadth Area B; courses in biology and chemistry (high school or college) strongly recommended. Introduction to the tools of modern biotechnology including recombinant DNA, gene therapy, cloning, monoclonal antibodies, DNA fingerprinting, and the Polymerase Chain Reaction (PCR). Addresses applications of biotechnology to medicine, agriculture, the environment, and forensics, as well as their ethical implications. G.E. Integration IB.

Units: 3
GE Area: IB

NSCI 121. Blood: Science, Art, and Folklore
Prerequisites: completion of General Education Foundation and Breadth Area B; courses in biology and chemistry (high school or college) strongly recommended. Introduction to blood - its unique chemical, physical, and biological properties and its importance in medicine and forensics. Explores the significance of blood images for artistic and religious symbolism in both contemporary and historical cultures. G.E. Integration IB.

Units: 3
GE Area: IB

NSCI 125. Revenge of the Killer Microbes
Prerequisites: completion of General Education Foundation and Breadth Area B; courses in biology and chemistry (high school or college) strongly recommended. Introduction to the adversarial relationships between disease-causing microorganisms and human affairs, both currently and historically. Explores the unique defense and counter defense mechanisms that have developed in a variety of microbes and the human immune system. Addresses health care issues related to disease prevention and control. G.E. Integration IB.

Units: 3

NSCI 140T. Topics in Natural Science
Units: 1-6

NSCI 240T. Topics in Natural Sciences
Prerequisite: permission of instructor. Interdisciplinary topics in the natural sciences at the graduate level covering such subjects as advanced techniques. Sample topics are Radiation Techniques in Biology and the Physical Sciences and Recent Advances in Psychophysiology. (May include lab hours)

Units: 1-4

SCHOOL OF NURSING

NURS 8T. Beginning Topics in Nursing
Not available for credit in the nursing major. Selected topics in nursing for prenursing and/or beginning nursing students. Explores topics not covered in regular nursing courses.

Units: 1-3

NURS 10. Fundamental Concepts of Nursing Care

Units: 3
Course Typically Offered: Fall, Spring

NURS 10L. Practicum: Fundamental Concepts of Clinical Nursing
Prerequisite: admission to Nursing major. Corequisites: NURS 10, NURS 114, NURS 112. Clinical application of fundamental concepts and nursing process in care of clients. (6 hours of clinical per week) (CSU liability insurance fee, $8)

Units: 2
Course Typically Offered: Fall, Spring

NURS 50. Cooperative Education in Nursing
Prerequisites: current CPR certification; health clearance; NURS 10, NURS 10A, NURS 10L, NURS 110, NURS 110A, NURS 110L. Provides students enrolled in the nursing major an opportunity to obtain structured work-study experiences, under the supervision of registered nurses, in participating health care agencies. Opportunities for additional practice and development of confidence through application of previously learned knowledge and skills. CR/NC grading only; not applicable toward degree requirements.

Units: 1-3
NURS 110. Transitional Concepts in Nursing Care
Prerequisites: NURS 10, 10L, 112, 114. Corequisites: NURS 110A, 124, 145. Theory and concepts relative to healthcare of clients; emphasis on application of concepts and principles derived from nursing and other disciplines.
Units: 3
Course Typically Offered: Fall, Spring

NURS 110A. Transitional Skills and Assessment in Nursing Care
Prerequisites: NURS 10, 10L, 112, 114. Corequisites: NURS 110, 110L, 124, 145. Integration and application of knowledge necessary to perform specific nursing psychomotor skills. Emphasis placed on understanding the principles underlying the techniques, procedures and activities required while caring for clients with common health conditions. (6 lab hours/week; course fee, $40)
Units: 2
Course Typically Offered: Fall, Spring

NURS 110L. Practicum: Basic Concepts in Nursing
Prerequisites: NURS 10, 10A, 10L, 110, 111, NURS 112. Corequisites: NURS 110, 110A, NURS 124. Application of nursing process to clients with common health deviations. Identification of risk factors associated with stressors and provision of nursing care directed toward primary and secondary interventions. (6 clinical hours)
Units: 2
Course Typically Offered: Fall, Spring

NURS 112. Pathophysiology for Nurses
Prerequisite: admission to the nursing major. Corequisites: NURS 10, 10L, NURS 114. Study of the inter-, intra-, and extra-personal stressors leading to alterations in cardiac function, comfort, coping, elimination, immune response, metabolism, mobility, nutrition, respirations, role performance, and the implications for nursing practice.
Units: 3
Course Typically Offered: Fall, Spring

NURS 113. Problem-Based Case Studies for Nursing
Problem-based clinical cases to critically analyze the approach to selected problems in nursing practice. Application of the nursing process, use of evidence-based practice concepts and analysis of clinical practice issues in preparation of the undergraduate nurse for clinical practice.
Units: 2

NURS 114. Fundamental Skills and Assessments of Nursing Care
Prerequisite: Admission to Nursing Major. Co-requisites: NURS 10, NURS 10L, NURS 112. Integration of fundamental skills and assessments necessary to provide nursing care and assist individuals in meeting their common health needs.
Units: 3
Course Typically Offered: Fall, Spring

NURS 121. Psychosocial Nursing
Units: 3
Course Typically Offered: Fall, Spring

NURS 121L. Practicum: Psychosocial Nursing
Prerequisites: NURS 131, 131L, 132, 132L. Corequisites: NURS 140A, 140L, 142. Application of the nursing process to clients with psychosocial disorders. (6 clinical hours/week; course fee, $20) (CSU liability insurance fee, $8)
Units: 2
Course Typically Offered: Fall, Spring

NURS 124. Pharmacology in Nursing
Units: 2
Course Typically Offered: Fall, Spring

NURS 131. Nursing of the Childrearing Family
Prerequisites: NURS 110, 110L, 110A, 124, 145. Corequisite: NURS 131L. Introduction to current theories and concepts in the care of the pediatric client/family with emphasis on wellness and illness.
Units: 3
Course Typically Offered: Fall, Spring

NURS 131L. Practicum: Nursing of the Childrearing Family
Prerequisites: NURS 110, 110L, 110A, 124, 145. Corequisite: NURS 131. Application of specific skills, theories, and concepts in the care of the pediatric client/family with emphasis on wellness and illness. (6 clinical hours; course fee, $20)
Units: 2

NURS 132. Nursing the Childbearing Family
Prerequisites: NURS 110, 110L, 110A, 124, 145. Corequisite: NURS 132L. Theoretical base and clinical knowledge for application in primary and secondary prevention in the nursing
of the childbearing family. Introduction to high risk perinatal nursing.

Units: 3
Course Typically Offered: Fall, Spring

NURS 132L. Practicum: Nursing the Childbearing Family
Prerequisites: NURS 110, 110L, 110A, 124, 145. Corequisite: NURS 132. Application of knowledge and technical skills in the nursing of the childbearing family during the intrapartum and postpartum periods with emphasis on the family as a unit. (6 clinical hours; course fee, $20)

Units: 2

NURS 136. Health Appraisal
Prerequisite: admission to the major or RN license. Health appraisal integrates psychosocial and pathophysiological processes including techniques of history taking and health assessment in nursing practice and knowledge of normal findings as well as common deviations. (2 lecture, 2 lab hours)

Units: 3
Course Typically Offered: Fall, Spring

NURS 137. Teaching Strategies for the Health Care Client
Prerequisite: upper-division status. Exploration of nurses’ role as a teacher in health care setting. Principles of teaching and learning applied to teaching of individuals and groups. Opportunities for micro-teaching are provided. (Laboratory optional)

Units: 3
Course Typically Offered: Fall, Spring

NURS 138. Bridge to Professional Nursing Concepts and Issues
Characteristics of nursing as a profession, historic and current roles of professional nurse as advocate, leader, manager, educator, researcher, team member, and change agent. Introduction to nursing theories, along with research, ethical, legal, political, and economic issues in health care.

Units: 5
Course Typically Offered: Fall, Spring

NURS 140A. Complex Concepts of Nursing Care
Prerequisite: NURS 131, NURS 131L, NURS 132 & NURS 132L.
Co-requisites: NURS 121, NURS 121L, NURS 142, NURS 140L. Theory and Concepts relative to health care of clients. Emphasis on synthesis of concepts and principles derived from Nursing and other disciplines.

Units: 3

Course Typically Offered: Fall, Spring

NURS 140L. Practicum: Concepts of Complex Clinical Nursing
Prerequisites: NURS 131, NURS 131L, NURS 132, NURS 132L. Corequisite: NURS 140. Clinical application of concepts and nursing process in care of clients of all ages with complex health problems. (6 clinical hours)

Units: 2
Course Typically Offered: Fall, Spring

NURS 141. Concepts of Community Health Nursing
Prerequisites: G.E. Foundation and Area D; NURS 121, 121L, 140A, 140L, 142. Corequisite: NURS 141L. Community and home health nursing principles, practices, and services to benefit client systems at the primar, secondary, and tertiary levels of prevention; recognize the interrelatedness of nursing, public health, epidemiological, developmental, learning, and economic theories and concepts. Multicultural/International M/I.

Units: 3

NURS 141LS. Practicum: Concepts of Community Health Nursing
Prerequisites: G.E. Foundation and Area D; NURS 121, 121L, 140A, 140L, 142. Corequisite: NURS 141. Application of primary, secondary, and tertiary prevention in the community with individuals, families, and groups. Service learning components are integrated to enhance reflection of caring for diverse population members. (6 clinical hours/week; course fee $20) (CSU liability insurance fee, $8) Multicultural/International M/I.

Units: 2

NURS 142. Assessment of Common Cardiac Dysrhythmias
Prerequisites: NURS 131, NURS 131L, NURS 132, NURS 132L. Corequisites: NURS 140A, 140L. Study of the electrocardiogram, common dysrhythmias, and implications for nursing practice. (Course fee, $20)

Units: 1
Course Typically Offered: Fall, Spring

NURS 145. Nursing Theories and Research
Prerequisites: Statistics, NURS 10, 10L, 112, 114 and upper division writing skills requirement. Application of nursing theories and the research process to nursing practice are explored. Focus includes historical evolution of contemporary theories in nursing, critique of current research and technology applications to research.

Units: 3
Course Typically Offered: Fall, Spring

NURS 150. Leadership and Health Care Economics
Prerequisites: NURS 140, NURS 140L, NURS 141, NURS 141L, NURS 142, NURS 145. Corequisites: NURS 150L, NURS 151. Development of the nurse as a leader in the health care delivery system. Development of negotiation, delegation, management, and critical thinking skills with recognition of the impact of a changing health care economics environment. (course fee $40)
Units: 3
Course Typically Offered: Fall, Spring

NURS 150AL. Practicum in Leadership and Clinical Management
Prerequisites: NURS 121, 121L, 140A, 140L, 142. Corequisites: NURS 141, 141LS, 150, 151 and 155. Development and application of leadership skills in a variety of health care settings. Covers using negotiation, delegation, management, and critical thinking skills while managing client caseloads with interprofessional team members in a cost-effective manner. (8 clinical hours/week)
Units: 3
Course Typically Offered: Fall, Spring

NURS 151. Senior Project
Prerequisites: Senior standing or permission of instructor; NURS 121, 121L, 140A, 140L, 142. Corequisites: NURS 141, 141LS, 150, 150AL, 151, 155. Opportunity for students to build upon conceptual, theoretical, and research knowledge base. Students pursue in-depth study with practical application in areas of interest: management, conflict resolution, application of nursing theories, research, or community project. Satisfies the senior major requirement for the B.S. in Nursing.
Units: 1

NURS 152. Advanced Leadership, Management and Healthcare Systems
Provides students with an expanded view of the nurse as leader and manager, as well as the role of nursing within the healthcare system. Leadership, management, organizational, financial, regulatory and policy frameworks are examined.
Units: 3
Course Typically Offered: Fall, Spring

NURS 154. Applying Professional Nursing Principles
Prerequisites: NURS 138, NURS 145. Culminating RN-BSN course; integration of concepts in RN-BSN coursework with prior nursing knowledge and experience. Synthesis and application of cumulative knowledge focused on capstone project; exploration of future role of nursing within changing healthcare system.
Units: 5
Course Typically Offered: Fall, Spring

NURS 155. Advanced Problem-Based Clinical Case Studies in Nursing
This course will utilize a comprehensive approach facilitated by clinically based scenarios, nationally standardizes examinations, and situational learning opportunities to systematically review key concepts accessible through-out the student nurses' program of study. Emphasis is placed on the promotion of culminating nursing curricula synthesis.
Units: 2
Course Typically Offered: Fall, Spring

NURS 180T. Topics in Nursing
Selected topics such as aging, holistic nursing, transcultural nursing, assertiveness training for nurses, psychosocial aspects of nursing, etc. Some topics may have clinical component.
Units: 1-3

NURS 180T. Therapeutic Communication Skills for Health Professionals
This course explores strategies for promoting and maintaining therapeutic communication and relationships between patients and health professionals. (Offered Spring 2020)
Units: 3

NURS 184. Introduction to School Nursing
Prerequisites: admission to School Nurse Services Credential Program, NURS 136, NURS 137; SPED 120; COUN 174 or COUN 200. Corequisite: NURS 186. Role of the school nurse; parameters of school health practice, legal guidelines, professional accountability, coordinated health programs, health education, and health needs of complex multicultural school-aged population. (Available online.)
Units: 3

NURS 185. School Nurse Seminar
Prerequisites: admission to School Nurse Services Credential Program, NURS 136, NURS 137; SPED 120; COUN 174 or COUN 200. Corequisite: NURS 187. Role of the school nurse; parameters of school health practice; emphasis on adolescent health issues, health education, legal parameters, interdisciplinary cooperation, legislative issues, research, and professional accountability. (Available online.)
Units: 3

NURS 186. School Nurse Practicum I
Prerequisites: admission to School Nurse Services Credential Program, NURS 136, NURS 137; SPED 120; COUN 174 or COUN 200; NURS 183. Corequisite: NURS 184. Elementary level school nurse experience including special education.
Direct supervision by a credentialed school nurse; scheduled preceptor/instructor conferences; class participation online. (9 clinical hours/week)

Units: 3  
Course Typically Offered: Fall

NURS 187. School Nurse Practicum II  
Prerequisites: admission to School Nurse Services Credential Program, NURS 136, NURS 137; SPED 120; COUN 174 or COUN 200; NURS 183, NURS 184. Corequisite: NURS 185. Secondary level school nurse experience, including special and alternative education; direct supervision by credentialed school nurse required. Scheduled conferences with preceptor and faculty. Class participation will be online (9 clinical hours/week)

Units: 3  
Course Typically Offered: Spring

NURS 190. Independent Study  
See Academic Placement regarding Independent Study. Approved for RP grading.

Units: 1-3

NURS 210. Health Assessment in Advanced Nursing Practice  
Prerequisites: NURS 136 or equivalent, pathophysiology, admission to the Graduate Program in Nursing. Refinement of history taking, physical diagnosis, psychosocial, and developmental evaluation of multicultural clients and families. Includes differential diagnosis, clinical decision making, and client management across the life span. Pharmacology and laboratory techniques incorporated. Includes clinical performance component. (2 lecture, 3 practicum hours; course fee, $40) (CSU liability insurance fee, $8)

Units: 3

NURS 211. Advanced Pharmacology  
Prerequisite: admission to the graduate program in nursing or permission of instructor. Concepts and theory relative to pharmacologic agents and devices utilized in health care by the advanced practice nurse. Content includes pharmacologic agents, physiologic/pathologic responses, and legal/ethical considerations for use with all age groups of clients.

Units: 3

NURS 212. Advanced Pathophysiology  
Prerequisite: admission to the graduate program in nursing or permission of instructor. The relationship between normal physiology and pathological phenomena produced by altered states is analyzed. Physiologic responses to illness and treatment modalities across the life span are examined. Synthesis and application of current research regarding pathological changes are emphasized.

Units: 2

NURS 215. Obstetrics & Gynecology in Primary Care  
Prerequisite: successful completion of NURS 210 or nurse practitioner certification. Introduction to basic obstetric and gynecologic content and skills utilized in primary care. Diagnosis and management of common obstetric and gynecologic conditions are explored. Early indications of serious obstetrical complications and the nurse practitioner role are discussed.

Units: 3

NURS 221. Theoretical Foundations of Nursing Practice  
Prerequisite: admission to the graduate program in nursing. Selected theories from nursing and related fields are examined and evaluated with emphasis on application in complex health care systems. The relationship between theory, research, and clinical practice is explored.

Units: 2

NURS 223. Advanced Research Methodology in Nursing  
Prerequisite: admission to the Graduate Program in Nursing. In-depth study of research principles and techniques. Formulation of a comprehensive database, critical analysis of clinical issues, application of research in the treatment regimen, and thesis/project proposal development are incorporated.

Units: 3

NURS 225. Advanced Nursing Issues: Health Care Policy Ethics and Role Development  
Prerequisite: admission to the graduate program in nursing. The evolution of major issues relevant to advanced nursing practice is examined. Topics include: health care policy, organization, and financing; ethics; professional role development; and interdisciplinary communication and collaboration.

Units: 3

NURS 243. Psychiatric Disorders & Mental Health Problems in Primary Care  
Prerequisites: Acceptance to PMHNP Advanced Certificate of Study Program or by permission of instructor. Theories and models of psychiatric disorders and mental health problems. Symptoms, causes, and management of common mental disorders seen in primary care settings such as eating disorders, anxiety, substance abuse, and depression. Ethical issues. Focus on patient as individual.

Units: 2

NURS 244. Psychopharmacology  
Prerequisites: Acceptance to PMHNP Advanced Certificate of Study Program or by permission of instructor. Current scientific knowledge of psychotropic regimens and application to psychiatric disorders and mental health problems.
Advanced concepts in neuroscience, pharmacokinetics, pharmacodynamics, and clinical management.

Units: 2

NURS 245. Management of Common Psychiatric Conditions in Primary Care
Prerequisites: Acceptance to PMHNP Advanced Certificate of Study Program or by permission of instructor. Co-requisites: NURS 243 and NURS 244. Assessment, diagnosis and management of common mental health disorders in primary care. Analysis of clinical strategies and interventions in health promotion and maintenance and prevention of common psychiatric problems. Role of PMHNP in community mental health. 103 precepted clinical hours. (Weekly one hour clinical conference.) (Course fee, $40.)
Units: 2

NURS 246. Methods of Psychotherapy
Prerequisites: NURS 243, NURS 244, NURS 245 or by permission of instructor. Co-requisite: NURS 247. Types and principles of family, adult, and child psychotherapeutic interventions. Group psychotherapeutic processes and methods of facilitation. Models of crisis intervention, cognitive behavioral and motivational interventions.
Units: 2

NURS 247. Management & Care of Patients with Acute & Chronic Psychiatric Conditions
Prerequisites: NURS 243, NURS 244, and NURS 245 or by permission of instructor. Co-requisite: NURS 246. Assessment, diagnosis, and psychopharmacologic and psychotherapeutic management of common mental disorders, including psychotic conditions, uncommon presentations, acute exacerbations, and crises. 206 precepted clinical hours. (Weekly one hour clinical conference.) (Course fee, $40.)
Units: 4

NURS 248. Psychiatric Disorders & Mental Health Problems in Special Populations
Prerequisites: NURS 246 and NURS 247 or by permission of instructor. Co-requisite: NURS 249. Assessment, diagnosis and management of common psychiatric conditions in older adults, children, adolescents, and diverse populations. Effect of culture on the expression of illness, help-seeking behaviors, and treatment. Addresses disparities in mental health care, legal and ethical issues.
Units: 2

NURS 249. Management & Mental Health Care of Special Populations
Prerequisites: NURS 246 and NURS 247 or by permission of instructor. Co-requisite: NURS 248. Assessment, diagnosis, and psychopharmacologic, psychosocial, and psychotherapeutic management of common mental disorders, with an emphasis on care of the elder adult, children, adolescents, and diverse populations. 206 precepted clinical hours. (Weekly one hour clinical conference.) (Course fee, $40.)
Units: 4

NURS 264. Primary Practicum Family Nurse Practitioner
Prerequisites: California RN licensure, NURS 210, NURS 221. Corequisite: NURS 265. A practicum designed to prepare family nurse practitioners to deliver promotion and health maintenance services. Application of individual, family, community, and nursing theories are addressed utilizing transcultural and intergenerational factors in interdisciplinary practice settings. (Course fee, $40) (204 faculty-supervised direct care clinical hours) (CSU liability insurance fee, $8)
Units: 4

NURS 265. Family Nurse Practitioner Role in Primary Prevention
Units: 2

NURS 266. Family Nurse Practitioner Role in Secondary Prevention
Units: 2

NURS 267. Practicum in Secondary Prevention, Family Nurse Practitioner
Prerequisites: NURS 264, NURS 265 prior to or concurrently. Supervised clinical practice in a primary care setting with emphasis on secondary prevention for clients of all ages. Students work directly with preceptor and faculty member. Complete assessment and case management. (Course fee, $40) ( One hour clinical conference per week).
Units: 4

NURS 277. Family Nurse Practitioner Role in Tertiary Prevention
Prerequisites: NURS 266, NURS 267. Theoretical base for tertiary prevention for families in primary care settings. Assessment and management of chronic conditions requiring reconstitution. Development of protocols/algorithms for tertiary prevention. Integration of knowledge related to primary, secondary, and tertiary prevention. (Course fee, $40)
Units: 2
NURS 278. Practicum in Tertiary Prevention, Family Nurse Practitioner
Prerequisites: NURS 266, NURS 267; NURS 277 prior to or concurrently. Supervised clinical practice in a primary care setting with emphasis on care of clients of all ages requiring tertiary prevention. Students work directly with a nurse practitioner and/or physician in a primary care setting. (CSU liability insurance fee, $8)
Units: 4

NURS 288T. Seminar Topics in Advanced Clinical Nursing
Prerequisite: permission of instructor. Selected topics in specialized practice domains such as home health, cardiovascular, oncology, gerontology, and rehabilitation nursing. Analysis and integration of research-based knowledge into the nursing process characterizing the specific practice domain are emphasized.
Units: 1-7

NURS 290. Independent Study
See Academic Placement regarding Independent Study. Approved for SP grading.
Units: 1-3

NURS 295. DNP Practicum
Prerequisites: Admission to DNP program. Integration of clinical practice, theory, and research. Development of clinical expertise in management of health problems in selected populations. (45 - 270 supervised clinical hours). May be repeated. CR/NC grading only.
Units: 1-6

NURS 298. Project
See Graduate Studies Regulations for Criteria for Thesis and Project. A project is defined as a systematic development of a plan for, or critical evaluation of, a significant undertaking or a creative work in nursing. Abstract required. Approved for SP grading.
Units: 3

NURS 298C. Project Continuation
Prerequisite: NURS 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

NURS 299. Thesis
Prerequisite: NURS 223. See Graduate Studies Regulations for Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis, based on an approved proposal, for the master's degree. Approved for SP grading.
Units: 3

NURS 299C. Thesis Continuation
Prerequisite: NURS 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

NURS 574. The Role of Diversity & Social Issues in Healthcare
Prerequisite: admission to the DNP program. Analysis of social and cultural factors affecting health among populations defined by age, education, gender, ethnicity, culture, religion, occupation, income, mental or physical disability and language.
Units: 2

NURS 575. Application of Theories in Advanced Nursing Practice
Prerequisite: admission to the DNP program. Application of theories of nursing, ethics, and teaching-learning to advanced nursing practice and healthcare leadership.
Units: 2

NURS 576. Application of Biostatistics to Populations
Prerequisite: admission to the DNP program. Examination of methods to generate and analyze biostatistical data to design, implement, and evaluate programs and policies for the healthcare of populations.
Units: 3

NURS 583. Leadership & Professional Responsibility in Complex Healthcare Systems
Prerequisites: NURS 574, NURS 575, NURS 576. Analysis of nursing leadership and evidence-based management theories necessary for the leadership of complex healthcare systems. Application of concepts of leadership, management, planning, and evaluation of population based efforts to provide quality affordable care. Analysis of professional role and responsibilities.
Units: 2

NURS 584. Technology, Informatics, and Data Management in the Transformation of Healthcare
Prerequisites: NURS 574, NURS 575, NURS 576. Overview of patient-centered technology and clinical information systems. Application of nursing informatics in healthcare systems. Use of technology in evaluation of clinical outcomes to improve the healthcare system and to evaluate the effectiveness, quality, and efficiency of healthcare programs.
Units: 3
NURS 585. Foundations of Evidence-Based Practice
Units: 2

NURS 586. Transformation of Health Care Systems: Health Policy & Economics
Prerequisites: NURS 583, NURS 584, NURS 585. Healthcare policies and economics and the political forces that shape them. Role of the DNP in the analysis, formulation, and implementation of healthcare policies.
Units: 2

NURS 587. Principles of Epidemiology
Units: 3

NURS 591. Curriculum Development
Units: 3

NURS 592. Evaluation in Nursing Education
Prerequisites: NURS 591, NURS 593, NURS 595. Focus on assessment, measurement, and evaluation of learning and program outcomes nursing. Exploration of theories of educational measurement and evaluation and of measure to evaluate teaching effectiveness, student learning, student outcomes, and student clinical performances.
Units: 3

NURS 593. Financial Aspects of Projects and Practice
Prerequisites: NURS 586, NURS 587. Principles of health care economics, third-party reimbursement, costing, budgets and budgeting, variance, economic evaluation methods, and writing a business plan to defend or market a health care program. Management of successful project or practice, emphasizing fiscal planning and control.
Units: 2

NURS 594. Application of Evidence Based Teaching in Nursing
Units: 2

NURS 595. Translating Evidence into Reflective Practice I
Prerequisites: NURS 586, NURS 587. Integration of clinical practice, theory, and research. Development of clinical expertise in management of health problems in selected populations. Identification and development of a project proposal for implementation. Formal defense of proposal and IRB approval. One hour clinical conference per week. (204-306 total practicum hours)
Units: 2

NURS 596. Translating Evidence into Reflective Practice II
Prerequisites: NURS 591, NURS 593, NURS 595. Integration of clinical practice, theory, and research. Development of clinical expertise in management of health problems in selected populations. Implementation of project proposal. One hour clinical conference per week. (204 - 306 total practicum hours)
Units: 2

NURS 597. Doctoral Project
Prerequisites: NURS 592, NURS 594, NURS 596. Evaluation of data and completion of doctoral project. Dissemination of results through an oral defense and manuscript submission to a peer-reviewed journal.
Units: 2

PHILOSOPHY

ENGL 115W. Literature of the New Testament
(ENGL 115W same as PHIL 133W.) Prerequisite: satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement. Discussion and close written analyses of selected texts from the New Testament. Meets upper-division writing skills requirement for graduation.
Units: 3
Course Typically Offered: Fall, Spring

ENGL 116. Literature of the Old Testament
(ENGL 116 same as PHIL 134.) Discussion and written analyses of selected texts from the Hebrew Bible. Special attention to the sources and styles of biblical literacy techniques.
Units: 4
Course Typically Offered: Fall

MES 10. Introduction to Modern Middle East
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. A thematic introduction to the Middle East through examination of its geography, ethnicities, nationalities, cultures, art, literature, architecture, religions, history, politics, and economy.
Units: 3
GE Area: D3

PAX 100. Peace and Conflict Studies
Provides an overview of causes and types of conflict. Critical examination of issues related to war, peace, and justice. Principled negotiation; cultural awareness. GE ID (Formerly INTD 180)
Units: 3
Course Typically Offered: Fall, Spring
GE Area: ID

PAX 110. Peace Building
Theories, methods, and skills in personal transformation, anger management, communication, engaging cooperation, building community, reducing prejudice, maintaining relationships, and consensus decision making. Emphasizes multicultural perspectives. G.E. Breadth E1.
Units: 3
GE Area: E1

PAX 120. Mediation
Includes such topics as interest-based bargaining, anger management, values, communication, and conflict management, all in the context of mediation. Participants acquire and practice mediation skills and observe the process as practiced by skilled professional mediators. (Formerly SSCI 150T)
Units: 3

PAX 121. Political Violence: War, Warfare, and Terrorism
War, Warfare & Terrorism is designed to familiarize students with nomenclature, practices and theories of war and warfare in domestic and international scope and the beginnings, prosecution, duration and end games of violent conflict.
Units: 3

PAX 165T. Topics in PAX
Topics in Peace and Conflict Studies
Units: 3

PAX 185I. Internship
Prerequisite: permission of instructor and sponsoring agency. Internships in peacebuilding, reconciliation, conflict resolution and mediation with local social service agencies, the Better Business Bureau, school districts, and corporations. Hours to be arranged. CR/NC grading only. (Formerly SSCI 185)
Units: 1-3
Course Typically Offered: Fall, Spring

PAX 190. Independent Study
See Academic Placement--Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

PHIL 1. Introduction to Philosophy
Prerequisite: G.E. Foundation A2. Introduction to the basic issues, disputes, and methods of traditional and contemporary philosophy, including theory of knowledge, ethics, metaphysics, religion, and social theory. Development of skills in analysis, logical thinking, and self-expression. G.E. Breadth C2.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

PHIL 2. Exploring Religious Meaning
Prerequisite: G.E. Foundation A2. Introduction to exploration of the many dimensions of religions. Topics include tools and resources of the academic study of religion, the sacred/holy, symbolism, myth, ritual, religious origin, and destiny. G.E. Breadth C2.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

PHIL 10. Self, Religion, and Society
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

PHIL 20. Moral Questions
Prerequisite: G.E. Foundation A2. Introduction to ethics and its place in human experience. Ethical theory; methods of reasoning about values. Typical issues include euthanasia, privacy, work ethics, sex, happiness, capital punishment, censorship, social justice, and environment. Non-Western perspectives; materials from arts and humanities (e.g. literature, film). G.E. Breadth C2.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

PHIL 25. Methods of Reasoning
Principles and methods of good reasoning. Typical topics: identification of argument structure, development of skills in deductive and inductive reasoning, assessing observations and testimony reports, language and reasoning, common fallacies. (PHIL 25 and PHIL 45 cannot both be taken for credit.) G.E. Foundation A3.
Units: 3
PHIL 45. Introduction to Logic
Basic concepts and methods of logic; development of skills in deductive and inductive reasoning, with emphasis on deduction. Elementary formal techniques for propositional logic; categorical logic, fallacies, and language. (PHIL 45 and PHIL 25 cannot both be taken for credit.) G.E. Foundation A3
Units: 3

PHIL 101. Ancient Philosophy
Development of Western Philosophy from its beginning; the emergence of critical theory, doctrines, and schools of thought in Greek and Roman culture. Topics considered may include: Presocratic, Sophists, Socrates, and the works of Plato and Aristotle.
Units: 3

PHIL 104. Nineteenth Century Philosophy
Principals developments in European and American Philosophy from Kant to James. Figures and movements to include: Hegel, Fichte, Schelling, Schopenhauer, Kierkegaard, Feuerbach, Marx, Engels, Mill, Nietzsche, Emerson, Thoreau, Peirce, James, and others; idealism, dialectical materialism, transcendentalism, pragmatism, existentialism, and humanism.
Units: 3

PHIL 106. Twentieth Century Philosophy
Units: 3

PHIL 107. Existentialism
Examination of roots of existentialism in Kierkegaard and Nietzsche; study of such 20th century existentialists as Sartre, Heidegger, Jaspers, Buber. Typical problems examine: nature of mind, freedom, the self, ethics, existential psychoanalysis.
Units: 3

PHIL 110. Feminist Philosophy
Introduction to feminist approaches to philosophy and to specifically philosophical approaches to gender. Several philosophical issues will be explored at some depth. These might be drawn from the following areas: personal identity; values and society; political authority; knowledge and reality.
Units: 3

PHIL 111. Philosophy of Race
Philosophical investigation of race, racism, and people of color in philosophy. Typical topics include: concepts of race and racial identities; social/political significance of racial categories; racial justice and redress for racism; ethics of racial discourse; intersections of racism with other oppressions.
Units: 3

PHIL 115. Ethical Theory
Introduction to the fundamental concepts and problems of moral theory. Examination of various ethical theories, including relativism, egoism, utilitarianism, intuitionism, and non-cognitivism; the meaning of ethical terms.
Units: 3

PHIL 118. Social and Political Theory
Examination of traditional and contemporary theories of society and government. Analysis of basic concepts such as the common good, social contract, authority, justice, and natural rights.
Units: 3

PHIL 120. Contemporary Conflicts of Morals
Prerequisites: G.E. Foundation and Breadth Area C. Exploration of moral issues through great works, such as philosophy, novels, dramas, or films. Looks at questions such as, "What is it to be moral? Why be moral? Why care about others? How should scarce resources be distributed? What is integrity?" GE Area IC
Units: 3

PHIL 121. Ethics in Criminal Justice
Philosophical issues concerning society's treatment of criminal behavior. Topics discussed include: morality and law; punishment or rehabilitation; safe vs. repressive society, and what types of deviant behavior should be regarded as criminal?
Units: 3

PHIL 122. Introduction to Professional Ethics
Survey of ethical issues and standards facing a range of professionals in their careers, including engineering, law, medicine, the media, science, agriculture, education, and
business. Introduction to basic ethical theories and methods of reasoning about moral dilemmas.

Units: 3

PHIL 123. Bioethics
Pre-requisites: G.E. Foundation and Breadth Area B2 and either PHIL 20 or PHIL 120 or instructor consent. Not open to Freshmen. Survey of ethical issues within the biomedical sciences. Typical issues include research ethics, informed consent, genetics, stem cell research, non-Western perspectives, ethical and legal regulations. (Formerly PHIL 165T)

Units: 3

PHIL 125W. Issues in Political Philosophy
Prerequisites: completion of 60 units and a C or better in ENGL 5A, 5B or 10. Examination of prominent political philosophies and contemporary issues of politics and public policy. Policy issues may include the scope and limits of government authority, the role of government in the economy, foreign policy, health care, education, agriculture, and the environment. Meets the upper-division writing skills requirement for graduation.

Units: 3

PHIL 126. Social Justice
Examination of theories, issues, and goals in social justice. Explore social justice topics, such as justice in healthcare, wealth, the environment, culture, and religion, along with responses to social injustice, such as responses to oppression, bigotry, poverty, and structural violence.

Units: 3

PHIL 127. Philosophy of Law
Nature and functions of law; methods of justifying legal systems; logic of legal reasoning; analysis of fundamental legal concepts.

Units: 3

PHIL 130. Philosophy of Religion
The nature and function of religious faith, belief, and practice; relations between religion and morals; existence of God; problem of evil; nature and significance of religious experience.

Units: 3

PHIL 131. Comparative Religion
Prerequisites: G.E. Foundation and Breadth Area D. A study of major religions of the world, their traditions, teachings, influential texts, methodological and comparative approaches. Emphasis on major Western and non-Western religions such as Hinduism, Buddhism, Confucianism, Daoism, Judaism, Christianity, and Islam. Multicultural/ International M/I.

Units: 3

Course Typically Offered: Fall, Spring

PHIL 132. Religion and the Margin
Prerequisites: G.E. Foundation and Breadth Area D. Exploration of elements facing religious studies that have been historically moved from the center to the side (marginalized), such as women's experience, ethnicity, gender, and class. Focus will include how religion has both supported and resisted this move. Multicultural/International M/I.

Units: 3

Course Typically Offered: Fall, Spring

PHIL 132Z. Religion and the Margin-London Semester
Prerequisites: G.E. Foundation and Breadth Area D. Exploration of elements facing religious studies that have been historically moved from the center to the side (marginalized), such as women's experience, ethnicity, gender, and class. Focus will include how religion has both supported and resisted this move. Multicultural/International M/I.

Units: 3

PHIL 133W. Literature of the New Testament
(ENGL 115W same as PHIL 133W.) Prerequisite: satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement. Discussion and close written analyses of selected texts from the New Testament. Meets upper-division writing skills requirement for graduation.

Units: 3

PHIL 134. Literature of the Old Testament
(ENGL 116 same as PHIL 134.) Discussion and written analyses of selected texts from the Hebrew Bible. Special attention to the sources and styles of biblical literacy techniques.

Units: 4

PHIL 135. Asian Religious Traditions
A study of the major beliefs and values of the Asian religious traditions, including an examination of some of the classical texts central to Asian religions.

Units: 3

PHIL 136. Buddhism
Introduction to Buddhism. Life and teachings of Gautama Siddhartha Buddha; development of Buddhism after death or mahanirvana of the Buddha.

Units: 3
PHIL 137. Hinduism
Introduction to the development and ideas of Hinduism, including an examination of classical scriptural texts, e.g., Upanishads, Bhagavad-gita, as well as modern Hindu writings.
Units: 3

PHIL 138. Chinese Thought
Introduction to the development of major ideas and systems of thought in China; emphasis on Confucian, Taoist, and Chinese Buddhist traditions.
Units: 3

PHIL 139. Islam
Introduction to Islam, including the Qur'an, life of Muhammad, sectarianism, leadership, Islamic Law, science, calligraphy, Ramadan, and Hajj.
Units: 3

PHIL 140. Advanced Reasoning Skills
Development of skills in the analysis of arguments, thinking clearly, and reasoning well. Emphasis on problems and skills involving language (e.g., clarifying meaning, handling vagueness, handling verbal component of disputes), and on inductive inferences in everyday life.
Units: 3

PHIL 145. Symbolic Logic
(Similar to MATH 110; consult department.) Prerequisite: PHIL 25 or PHIL 45 or permission of instructor. Theory of deductive inference; includes propositional logic, predicate logic, relations, identity, definite description, nature of axiom systems.
Units: 3

PHIL 146. Philosophy of Language
Nature and uses of language; theories of meaning; concepts of reference, predication, truth, name, ambiguity, vagueness, definition, metaphor; relationships between methodology in philosophy and theories of language.
Units: 3

PHIL 150. Foundations of Knowledge
Prerequisites: G.E. Foundation and Breadth Area C. Nature, sources, and limits of human knowledge; roles of perception, reason, testimony, and intuition in acquiring rational beliefs; e.g. science, mathematics, values, the arts, religion, social issues, and psychological states. G.E. Integration IC.
Units: 3

PHIL 151. Cognitive Science: Mind
Prerequisites: G.E. Foundation and Breadth Area C. The interdisciplinary study of cognition and mind: cognition includes mental states and processes such as thinking, reasoning, remembering, language understanding and generation, visual perception, learning, consciousness, emotions, self-awareness, and our place in the world. G.E. Integration IC.
Units: 3
GE Area: IC

PHIL 152. Philosophy of Science
The nature of scientific inquires as outcomes and/or practices. Theories of explanation, confirmation, induction, and discovery; (anti-)realism, instrumentalism, and social constructivism; nature of scientific theories, models, and laws of nature; scientific changes and revolutions; philosophical problems in particular sciences.
Units: 3

PHIL 155. Metaphysics
Analysis of classic and contemporary problems of metaphysics: the nature of the mind-independent world; the reality of abstract objects and types; the nature of time and causality; realism and anti-realism; essentialism, modality and possible worlds; naturalism and emergent properties.
Units: 3

PHIL 156. Moral Psychology
Analysis of mind and morality: philosophical perspectives on cognitive and affective aspects of virtuous and non-virtuous dispositions and behaviors. Topics may include agency, motivation, intention, desire, deliberation, practical judgment, self-control, weakness of will, akrasia, compulsion, self-deception, self-knowledge, regret, blame.
Units: 3

PHIL 157. Freedom, Fate, and Choice
Nature of human action, free will and determinism, free will and moral responsibility; analysis of basic concepts; for example, will, action, freedom, determinism, fatalism, chance, choice, decision, intention, reason, desire, belief; implications for everyday life.
Units: 3

PHIL 158. Judaism
Introduction to Judaism, including Torah, Jerusalem, Mishnah, Talmud, midrash, synagogue, Orthodox, Reform, Halakha, Passover, Shabbat, Yom Kippur, anti-Semitism, and Holocaust.
Units: 3
PHIL 165T. Special Topics
Topics of current or interdisciplinary interest or requiring special background.
Units: 1-3

PHIL 170T. Senior Seminar
Prerequisites: senior standing or permission of instructor and at least one upper-division philosophy course. Intensive investigation of selected problems, major figures, or a historical period in philosophy. Extensive writing and supervised research.
Units: 1-4

PHIL 170T. The Creation Worlds: The Intersections between Aesthetics and Technology
In both art and technology there are particular traditions that focus on the creation of new worlds, in contrast to the representation of a metaphysically stable world. We will explore the concept of 'creation' in visual art, music, and film side-by-side with creation in technology. Our aim will be to use concepts from philosophy of art and philosophy of technology in order to explore how worlds are created. (Offered Spring 2020)
Units: 3

PHIL 172T. Seminar in Religious Issues
Prerequisite: one upper-division philosophy course. Intensive investigation of problems in philosophical theology, comparative religion, and culture. Extensive writing and supervised research.
Units: 1-4

PHIL 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

PHIL 192. Directed Reading
Prerequisite: permission of instructor. Supervised readings in a selected philosopher or field of philosophy. Combined units of PHIL 190 and PHIL 192 may not exceed 6 units.
Units: 1-3

PHIL 198I. Applied Ethics Internship
Prerequisite: junior standing, PHIL 120, PHIL 122, or applied ethics courses and permission of instructor. Workstudy experience in community service, with a focus on ethical analysis and understanding. CR/NC grading only.
Units: 3

PHIL 199I. Fieldwork in Philosophy and Law
Prerequisites: senior standing, permission of instructor. Practical community work-study experience in legal or paralegal setting. Student works under sponsorship of a law firm or law-related agency, meets periodically with instructor, and submits a written report on relevant issues in ethics, jurisprudence, or philosophy.
Units: 3

PHYSICAL THERAPY

PHTH 105. Medical Terminology for Health Professionals
Study of word parts, definitions, spelling, analysis, synthesis, and use of medical vocabulary. This course is taught in classroom sections or may be taken entirely on-line.
Units: 3
Course Typically Offered: Fall, Spring

PHTH 180T. Topics in Physical Therapy
Prerequisite: permission of instructor. Advanced techniques in physical therapy and new trends relating to the care of patients.
Units: 1-3

PHTH 240. Advances in Orthopedic Physical Therapy I
Prerequisite: PHTH 217, PHTH 218 or permission of instructor. Exploration of treatment of orthopedic problems.
Units: 2

PHTH 241. Advances in Physical Therapy II
Prerequisite: PHTH 217, PHTH 218 or permission of instructor. A continuation of Advances in Orthopedic Physical Therapy I.
Units: 2

PHTH 242. Advanced Clinical Anatomy I
Prerequisite: Exploration of clinical application of anatomical structures of joints.
Units: 2

PHTH 243. Advanced Clinical Anatomy II
Prerequisites: PHTH 242 or permission of instructor. A continuation of Advanced Clinical Anatomy I
Units: 2

PHTH 244. Advances in Management of the Aging Population
Exploration of special approaches and considerations of intervention of conditions of aging.
Units: 2
PHTH 245. Advances in Management of the Neurological Patient
Prerequisite: PHTH 227, PHTH 228 or permission of instructor. Exploration of advanced multisystem treatment approaches in neuro-rehabilitation.
Units: 2

PHTH 247. Sports Injuries
Exploration in advances in management of sports injuries.
Units: 2

PHTH 248. Advances in Cardiac Rehabilitation
Prerequisite: PHTH 236 or permission of instructor. Exploration of the components of implementing and maintaining multilevels of cardiac rehabilitation and the management of patients with cardiac disease.
Units: 2

PHTH 249. Contemporary Issues in Delivery of Physical Therapy Services
Prerequisite: permission of instructor. Exploration of emerging trends and issues in contemporary physical therapy practice.
Units: 2

PHTH 260. Administration of Physical Therapy Services
Application of administration and organization of a physical therapy service, including supervision issues, fiscal considerations, marketing and public relations, outcomes management, utilization and quality management.
Units: 2

PHTH 262. Cooperative Education in Physical Therapy
PHTH 262 gives students enrolled in the third semester or later in the Doctor of Physical Therapy program the opportunity to combine classroom theory with "on-the-job training" to work under the supervision of a licensed Physical Therapist. The student performs patient care skills commensurate with their academic preparation.
Units: 1-2

PHTH 290. Independent Study
Supervised guidance for students who wish to do additional research. Approved for RP grading.
Units: 1-6

PHTH 506. Motor Development through the Lifespan
Motor development is a lecture course. This course human motor development, integrating physiological, psychological, sociological and spiritual domains while emphasizing the interaction between the systems. This course is in preparation for PHTH 537 Physical Therapy Management in Pediatrics.
Units: 2

PHTH 507. Foundations of Patient Assessment and Clinical Management in Physical Therapy I
This course involves selected theory and clinical application of essential evaluation, treatment procedures and interventions utilized in physical therapy practice including examination procedures, physical agents, massage, therapeutic exercise, and transfer and mobility training.
Units: 4

PHTH 508. Foundations of Patient Assessment and Clinical Management in Physical Therapy II
This course involves selected theory and clinical application of essential evaluation, treatment procedures and interventions utilized in physical therapy practice including examination procedures, physical agents, massage, therapeutic exercise, and transfer and mobility training.
Units: 4

PHTH 509. Clinical Pathokinesiology
This course focuses on management of musculoskeletal impairments involving complex, multisystems in persons across the life span. Emphasis is on developing clinical reasoning, critical thinking, and decision-making applied to various patient populations with impairments and functional limitations.
Units: 3

PHTH 510. Anatomy of the Appendicular Skeleton
Units: 3

PHTH 511. Anatomy of the Axial Skeleton
This course is an advanced study of the structure and function of the human body as a basis for understanding normal human movement. This course will emphasize the trunk and spine. (Instructional materials fee, $35).
Units: 4

PHTH 512. Applied Pathophysiology for Physical Therapists
This course involves an advanced study of physiology of body systems and the responses to normal aging, environmental influences, and pathological dysfunction. Includes cardiovascular, pulmonary, endocrine, neurological, musculoskeletal, and integumentary systems.
Units: 3

PHTH 517. Orthopedic Management in Physical Therapy I
Analysis of musculoskeletal disabilities with emphasis on physical assessment, methods of therapeutic intervention, clinical decision making and program planning. Selected lectures by medical practitioners on medical-surgical management of orthopedic conditions. Focus will be towards dysfunction involving the extremities.
PHTH 518. Orthopedic Management in Physical Therapy II
This course is an analysis of musculoskeletal disabilities with emphasis on physical assessment, methods of therapeutic intervention, clinical decision making and program planning towards dysfunction involving the spine and pelvic girdle. (2 hour lecture; 6 hour lab)
Units: 4

PHTH 526. Electrophysiologic Approaches to Patient Care
Exploration of advanced theories and principles related to the clinical use of electrophysiologic modalities. Includes electroneuromuscular stimulation for motor performance, nerve function, pain management and tissue repair.
Units: 3

PHTH 527. Applied Neurosciences
An advanced study of normal structure and function of the peripheral and central nervous system as a basis for understanding clinical manifestations seen in neurological disorders. This course is in preparation for evaluating and treating patients with neurological disorders. (2 hr lecture; 6 hr lab)
Units: 4

PHTH 528. Management of Neurological Disorders in Physical Therapy I
Advanced evaluation and treatment approaches to neurological disabilities in adults with emphasis on therapeutic intervention, program planning, and outcome measurements for the patient with neurological problems such as balance disorders, stroke, and Parkinson's disease.
Units: 3

PHTH 529. Management of Neurological Disorders in Physical Therapy II
Advanced evaluation and treatment approaches to neurological disabilities in adults with emphasis on therapeutic intervention, program planning, and outcome measurements for the patient with neurological problems such as spinal cord injury, multiple sclerosis, and traumatic head injury.
Units: 3

PHTH 533. Functional Kinesiology for Physical Therapists
This course presents basic principles, theories and applications of biomechanics. Kinesiology and pathokinesiology of the extremities, thorax, vertebral column, and temporomandibular joint will be discussed.
Units: 3

PHTH 534. Gait and Movement
This course presents a study of normal and abnormal gait, the principles of ergonomics, biomechanics of posture, and functional capacity evaluations.
Units: 3

PHTH 535. Exercise Physiology for Physical Therapists
Provides theoretical basis for understanding the body's physiological responses to exercise. Investigates how the support systems of the body (respiratory, cardiovascular, neuromuscular, metabolic, and hormonal) function, in cooperation with human energy production to insure that energy is provided for exercise.
Units: 2

PHTH 536. Physical Therapy Management of Body Systems
Evaluation and therapeutic intervention in the clinical management of normal and pathological conditions of the cardiovascular, pulmonary, endocrine and integumentary systems. A focus on the development of advanced knowledge and skills in patient evaluation, program planning and treatment procedures.
Units: 3

PHTH 537. Physical Therapy Management in Pediatrics
Advanced study of diagnosis and physical therapy problems found in pediatrics. Evaluation and intervention principles are used to discuss and explore clinical manifestations associated with diseases and functional impairments. Emphasis will be placed on the therapeutic intervention and program planning. (CSU liability insurance fee, $8)
Units: 3

PHTH 538. Physical Therapy Management in Geriatrics
A synthesis of biology of aging with common orthopedic and neurological problems special to the older patient. This course emphasizes analysis of clinical problems and issues facing the physical therapist in utilizing functional testing and community resources with the elderly.
Units: 2

PHTH 539. Physical Diagnosis
This course presents functional profiles of clients with emphasis on signs and symptoms associated with musculoskeletal, cardiopulmonary, peripheral vascular and neurologic diagnosis. Emphasis on methods to determine the most appropriate intervention strategy for each patient or client through the diagnosis process.
Units: 3

PHTH 554S. Clinical Learning I
This course is designed to progress the development of student clinical competencies needed of an independent physical
therapy practitioner in the outpatient orthopedic setting through a Service-Learning experiential model which is an integral component of the course.

Units: 2

**PHTH 555S. Clinical Learning II**
This course is an experiential, Service-Learning model designed to progress the development of clinical competencies needed of an independent physical therapy practitioner in the outpatient neurologic setting. Under faculty mentoring, student Physical Therapists will practice clinical decision analysis and clinical skills in the Gait, Balance and Mobility Center at Fresno State.

Units: 2

**PHTH 556S. Clinical Learning III**
Designed as a continuation from PHTH 554, this course is designed as a service-learning experience to progress the development of student clinical competencies needed in the outpatient orthopedic setting.

Units: 2

**PHTH 557. Clinical Experience I**
This 9 week externship during summer allows the student to apply academic knowledge in a clinical setting. Comprehensive examination, evaluation, and intervention will be used to manage the physical therapy patient. CR/NC grading only. (CSU liability insurance fee, $8)

Units: 4

**PHTH 558. Clinical Experience II**
This 12 week externship during the summer allows the student to apply academic knowledge related to examination, evaluation, and intervention will be used to manage the physical therapy patient. CR/NC grading only. (CSU liability insurance fee, $8)

Units: 6

**PHTH 559. Clinical Experience III**
This final 9 week externship during spring semester allows the student to apply academic knowledge in a clinical setting. Upon completion the student must demonstrate mastery of physical therapy skills considered appropriate for entry level practice. CR/NC grading only. (CSU liability insurance fee, $8)

Units: 4

**PHTH 560. Administration of Physical Therapy Services**
Application of administration and organization of a physical therapy service, including supervision issues, fiscal considerations, marketing and public relations, outcomes management, utilization and quality management.

Units: 2

**PHTH 561. Pharmacology for Physical Therapists**
Students will develop skills required for the physical therapist to understand and utilize important elements or pharmacological mechanisms and drug interactions that are essential for clinical decision making in physical therapy practice.

Units: 2

**PHTH 563. Radiology for Physical Therapists**
Students will develop skills required for the physical therapist to understand and utilize radiological diagnosis and diagnostic imaging procedures, as needed for clinical decision making in physical therapy practice.

Units: 2

**PHTH 564. Prosthetics**
This course provides the student with didactic knowledge and clinical skills necessary to successfully provide physical therapy evaluation and management of the patient following extremity amputation, with an emphasis on lower extremity.

Units: 1

**PHTH 565S. Community Outreach Wellness**
This is a Service learning course that presents essential concepts related to the roles of physical therapists in prevention and in the promotion of health, wellness, and fitness. This course includes application of concepts through service learning in selected community agencies.

Units: 1

**PHTH 591. Research Methods**
Study and application of research design and critical research reading skills. The student will gain important insights into the research process and become a discriminating consumer of published research.

Units: 3

**PHTH 592. Clinical Teaching and Mentoring**
This course is a lecture/seminar course. This course will prepare students to integrate their role as educators in many areas of practice including patient education, clinical instruction, mentoring as a community/public educator using educational theory that affects learning.

Units: 1

**PHTH 593. Professional Colloquium I**
This course addresses professional behavior standards in relation to patient care interactions and relationships with colleagues and community including documentation and professional service learning.

Units: 2
PHTH 594. Professional Colloquium II
Presents topics relative to global healthcare delivery models focusing on the healthcare system in the United States. It reviews community health services, prevention, health policy, reimbursement, referral, and legal issues related to profession.
Units: 2

PHTH 595. Case Based Learning
Seminar course with case based problem solving and clinical decision making discussions in a Grand Round format.
Units: 2

PHTH 596. Case Reports
This course involves development of case reporting skills, with a presentation of unique case study that includes a review of the literature on diagnosis and treatment of the case. Approved for RP grading.
Units: 3

PHTH 597. Evidence Based Practice in Physical Therapy
This course will prepare students to apply the principles of evidence based practice to clinical decision making.
Units: 3

PHTH 598. Doctoral Project
A doctoral project appropriate to the profession of physical therapy that demonstrates critical inquiry, independent thinking, and rationale is required. An abstract, written manuscript and oral defense will be required. A total of 3-units are required for graduation. CR/NC grading only. Approved for RP grade.
Units: 1-3

PHTH 598C. Project Continuation
Pre-requisite: Project PHTH 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

PHYSICS

EHD 154B. Final Student Teaching Seminar - Physical Science
Prerequisites: Concurrent enrollment in EHD 155A. Seminar to accompany final student teaching that provides opportunities for candidates to investigate and discuss variety of topics and strategies and to reflect on issues that surface during their student teaching experience.
Units: 1

EHD 155B. Student Teaching - Physical Science
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

PHYS 2A. General Physics
Prerequisites: MATH 6 or DS 71 or MATH 75 or MATH 75A or MATH 70 (or permission to register from department office). Topics and concepts in Newtonian mechanics of point particles and rigid bodies, energy, properties of fluids, heat and thermodynamics, waves and sound. G.E. Breadth B1. (3 lecture, 3 lab hours)
Units: 4
Course Typically Offered: Fall, Spring, Summer
GE Area: B1

PHYS 2B. General Physics
Prerequisite: PHYS 2A with a grade C or better. Topics and concepts in light, electricity, magnetism, atomic structure, relativity, quantum nature of light and matter, nuclear structure and radiation. (3 lecture, 3 lab hours)
Units: 4
Course Typically Offered: Fall, Spring

PHYS 4A. Mechanics and Wave Motion
Prerequisite: G.E. Breadth B4 with a grade of C or better; Math 75 or Math 75A and Math 75B; MATH 76 with a C grade or better. MATH 76 may be taken concurrently. Topics in classical Newtonian mechanics including linear and circular motion; energy; linear and angular momentum; systems of particles; rigid body motion; fluids; gravity; wave motion and sound. G.E. Breadth B1 when taken with PHYS 4AL.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: B1

PHYS 4AL. Laboratory in Mechanics and Wave Motion
Introduction to laboratory methods. Experiments in mechanics, waves, and sound. G.E. Breadth B1. (3 lab hours)
Units: 1
Course Typically Offered: Fall, Spring
GE Area: B1

PHYS 4B. Electricity, Magnetism, and Heat
Prerequisites: PHYS 4A with a grade of C or better; MATH 77 with a C grade or better (may be taken concurrently). Topics in classical physics including heat and thermodynamics, electrostatics, electric fields and potential, currents and AC...
and DC electric circuits, magnetic fields, electromagnetic induction.
Units: 3
Course Typically Offered: Fall, Spring

**PHYS 4BL. Laboratory in Electricity, Magnetism, and Heat**
Experiments in electricity, magnetism, heat, and thermodynamics. (3 lab hours)
Units: 1
Course Typically Offered: Fall, Spring

**PHYS 4C. Light and Modern Physics**
Prerequisites: PHYS 4B with a grade of C or better, MATH 77 with a grade of C or better. Maxwell's Equations, geometrical optics; electromagnetic radiation; physical optics; introduction to special relativity; quantum physics; and the physics of atoms, nuclei, and the solid state.
Units: 3
Course Typically Offered: Fall, Spring

**PHYS 10. Conceptual Physics**
Prerequisite: G.E. Foundation B4 (except for those with declared majors in the College of Science and Mathematics.) Basic ideas of physics and their relationship to the everyday environment. Physical phenomena, misconceptions, terminology, scientific method, and metric system. Memorable demonstrations in lectures; household-related experiments in the lab. G.E. Breadth B1. (3 lecture, 2 lab hours)
Units: 4
Course Typically Offered: Fall, Spring GE Area: B1

**PHYS 90. Directed Study**
Prerequisite: any university-level physics or physical science course. Individually arranged course of study in some limited area of physics, either to remove a deficiency or to in vestigate in more depth. (1-2 hours to be arranged)
Units: 1-2
Course Typically Offered: Fall, Spring

**PHYS 100. Concepts of Quantum Physics**
Prerequisites: G.E. Foundation and Breadth Area B. Key discoveries in Quantum physics and conceptual development of quantum theory. Lecture demonstration of experiments, graphical visualization of theory, hi-tech applications. G.E. Integration IB (3 lecture hours)
Units: 3
Course Typically Offered: Fall, Spring GE Area: IB

**PHYS 102. Modern Physics**
Prerequisite: PHYS 4C; MATH 81 (may be taken concurrently). Fundamental concepts of atomic and nuclear structure, transitions and radiation. Includes discussions of relativistic mechanics, quantum mechanics, solid state physics.
Units: 3

**PHYS 104. Experimental Techniques in Condensed Matter Physics**
Prerequisites: PHYS 4C. Shop techniques and safety instructions. Basic concepts in condensed matter physics. Measurements of conductivity, energy gap in semiconductors, drift mobility, Hall coefficients, photoconductivity, magnetic susceptibilities, excition spectra, dielectric loss. Experience in X-ray diffraction, vacuum technology, thin-film deposition, and low temperature techniques. (1 lecture, 9 lab hours)
Units: 4
Course Typically Offered: Spring

**PHYS 105A. Analytical Mechanics**
Prerequisite: PHYS 4C: MATH 81 (may be taken concurrently). (A) Analytical and vector treatment of the fundamental principles of statics, kinematics, and dynamics. Prerequisite: PHYS 105A. (B) Advanced dynamics; harmonic motion, central force fields, and Lagrange's equations.
Units: 3
Course Typically Offered: Fall

**PHYS 105B. Analytical Mechanics**
Prerequisite: PHYS 105A. (B) Advanced dynamics; harmonic motion, central force fields, and Lagrange's equations.
Units: 3
Course Typically Offered: Spring

**PHYS 107A. Intermediate Electricity and Magnetism**
Prerequisites: PHYS 105A, MATH 81. (A) Mathematical analysis of electrostatics and magnetostatics, Gauss'law, solutions of Laplace's equation, images, theory of conduction, magnetic potentials. (B) Prerequisites: PHYS 107A. Motion of ions in electric and magnetic fields, electromagnetic induction, Maxwell's equations and wave propagation, electron theory, and magnetic properties.
Units: 3
Course Typically Offered: Fall

**PHYS 107B. Intermediate Electricity and Magnetism**
Prerequisites: PHYS 107A. Motion of ions in electric and magnetic fields, electromagnetic induction, Maxwell's equations and wave propagation, electron theory, and magnetic properties.
Units: 3
Course Typically Offered: Spring

**PHYS 107. Intermediate Electricity and Magnetism**
Prerequisites: PHYS 4C, MATH 81. Theory of optical phenomena; wave theory of light with applications to
optical instruments; interference and diffraction phenomena, dispersion, polarization, coherence, and laser phenomena. Practical experience in using lasers and optical instruments. (2 lecture, 3 lab hours)

Units: 3  
Course Typically Offered: Fall

**PHYS 115. Quantum Mechanics**  
Prerequisites: PHYS 102, PHYS 105A, MATH 81, PHYS 170A strongly recommended. Historical background, postulates, meaning, and methods of quantum mechanics; applications to atomic phenomena.

Units: 3  
Course Typically Offered: Fall

**PHYS 135. Introduction to Magnetic Resonance Imaging and Spectroscopy**  
Prerequisites: PHYS 4A, PHYS 4AL, PHYS 4B, PHYS 4BL and PHYS 4C. Introduction to fundamentals of nuclear magnetic resonance and application in imaging and spectroscopy in-vivo. T1, T2, PD-weighted images, spin echo sequence, artifacts in images, and clinical applications of cerebral metabolites in 1D neurospectroscopy. (3 lecture hours).

Units: 3, Repeatable up to 4 units  
Course Typically Offered: Fall

**PHYS 136. Radiation Physics**  
Prerequisite: PHYS 102. The interaction of radiation with matter: photoelectric, Compton and pair production processes, neutron and charged particle interactions, linear energy transfer, quality factor, attenuation coefficients, shielding. Biological effects, RBE, internal dose, permissible exposures, beneficial application. Instrumentation.

Units: 3  
Course Typically Offered: Fall

**PHYS 137. Radiation Measurements Laboratory**  

Units: 3  
Course Typically Offered: Spring

**PHYS 140. Thermodynamics and Kinetic Theory**  
Prerequisite: PHYS 102, MATH 81. Fundamental concepts and laws of classical thermodynamics. Rudiments of kinetic theory and statistical thermodynamics with application to physical and chemical systems.

Units: 3

**PHYS 150. Astrophysics**  
Prerequisites: PHYS 4C. Introduction to celestial mechanics, spectral classification, stellar atmospheres and interiors, star formation and evolution, variable stars, neutron stars, pulsars, black holes, the nature of galaxies, and the expansion of the universe.

Units: 3  
Course Typically Offered: Spring

**PHYS 151. Observational Astronomy**  
Prerequisites: PHYS 4C. Celestial coordinates, time, stellar motions, constellations, star charts, catalogs, astronomical sources, observational limits, telescopes, detectors, atmospheric effects, digital image processing, photometry, and spectroscopy. (3 lecture, 3 lab hours). (Formerly PHYS 175T)

Units: 4  
Course Typically Offered: Fall

**PHYS 155. Seminar in Biomedical Physics/Neurosciences**  
Prerequisite: Biomedical Physics Major or permission of the Department Chair. One-to-one interaction with invited speakers giving talks on the state-of-the-art in medical imaging including MR, CT, PET, SPECT, etc, new radiation oncology systems such as CYBERKNIFE, IMRT, etc, neurobiology, radiobiology, and molecular imaging.

Units: 1, Repeatable up to 2 units

**PHYS 156. Diagnostic X-Ray Imaging Physics**  
Pre-requisite: PHYS 136. The fundamentals of x-ray production, image quality, digital radiography, fluoroscopy, and computed tomography. Image artifacts. Quality assurance or equipment and radiation dose. (3 lecture hours)

Units: 3

**PHYS 157. Nuclear Medicine Physics**  
Prerequisite: PHYS 136. Fundamentals of nuclear imaging. Gamma camera, basic principles and performance characteristics. Emission tomography: SPECT and PET, basic principles and performance characteristics. Clinical applications. Lab at the VACCHCS. (3 lecture hours, 3 lab hours).

Units: 4

**PHYS 158. Radiation Oncology Physics**  
Prerequisite: PHYS 136. Introduction to linear accelerators, geometry of photon beams, photon beam and electron beam dosimetry, treatment planning, brachytherapy, clinical applications, and new techniques. (3 lecture hours).

Units: 3
PHYS 162. Condensed Matter Physics
Prerequisites: PHYS 102, or CHEM 110B and permission of instructor. Classification of solids; crystalline state and lattice vibrations; properties of metallic lattices and dielectrics; magnetic properties of solids; free electron theory and band theory of metals; semiconductors; imperfections.
Units: 3

PHYS 163. Introduction to Particle Physics and ATLAS Experiment of LHC at CERN
Prerequisites: PHYS 4A and PHYS 4B. PHYS 4C is strongly recommended. Online course to 17 CSU Nuclear and Particle Physics Consortium (NUPAC) campuses, especially those intended to work at CERN on ATLAS research during summer (Formerly PHYS 175T).
Units: 3
Course Typically Offered: Fall

PHYS 168S. Physics Outreach
Prerequisite: Any one of the following courses: NSCI 1A, PHYS 10, PHYS 2A, PHYS 4A. Provides science majors and future teachers hands-on experience demonstrating physics in K-12 schools. Best practices based on education research, theories of science instruction, and core concepts in physics in a service-learning environment. (2 lecture, 3 lab hours) FS
Units: 3

PHYS 170A. Mathematical Physics
Prerequisite: PHYS 4A and MATH 81. Application of mathematical methods to the solution of problems in physics.
Units: 3
Course Typically Offered: Spring

PHYS 171. Analytical Methods
Prerequisite: PHYS 102, PHYS 110, PHYS 105A, PHYS 105B, PHYS 107A, PHYS 115, PHYS 140 (PHYS 105B and PHYS 115 may be taken concurrently). Advanced analytical techniques in solving problems in core physics disciplines
Units: 2

PHYS 175T. Topics in Contemporary Physics
Designed to provide students with special work in such areas of physics as biophysics, modern optics, plasmas, high energy physics, solid state, chaos theory, nuclear structure, astrophysics, low temperature phenomena. Some topics may have labs.
Units: 1-4

PHYS 175T. Physics of Music
This course science and art by employing music as a vehicle for learning physics concepts for non-science majors with only a minimal reliance on mathematics. Students receive an introduction to such physical concepts as the theory of fluids, energy, sound, wave motion, and basic electromagnetism, followed by a study of the physical structure of musical instruments. This course combines lectures, discussions, demonstrations, and hands-on laboratory activities. As a culminating activity, students make their own musical instruments using ordinary laboratory and construction materials. (Offered Spring 2020)
Units: 4

PHYS 175T. Introduction to Computer Simulations in Physics
This course introduces the use of computational techniques as a tool to study physical systems. Basic programming in Python will be presented, with focus on applications to physical problems. Emphasis is put on simulations, in particular Monte Carlo simulations, and on their relevance to solve problems in statistical physics, in quantum mechanics and in modeling of complex systems. Topics in probability theory, statistics, Markov chains and stochastic processes will be covered, as they provide the theoretical foundation for simulations. (Offered Spring 2020)
Units: 3

PHYS 175T. Orbital Mechanics
Prerequisites: PHYS 4A, PHYS 4C, MATH 77, and either CSCI 40 or ECE 71 or equivalent programming experience. An introduction to spaceflight for scientists and engineers. The space environment. Rocket performance. Coordinate and timekeeping systems. The gravitational two-body problem: particle dynamics under inverse square forces. Applications to analytical, numerical, and computer solutions for spacecraft orbit determination, trajectories, time of flight, and maneuvers. Orbits for Earth satellites. The three-body problem: lunar interplanetary trajectories. (Offered Spring 2020)
Units: 3, Repeatable up to 12 units

PHYS 175T. Tools/Skills for Working at CERN on ATLAS Research
Prerequisite: PHYS 163. This online class is designed to teach the students the tools and skills for working on ATLAS research projects at the LHC of CERN. It is only for the selected students from CSU Nuclear and Particle Physics Consortium (NUPAC) to work at CERN on ATLAS research projects for incoming summer. (Offered Spring 2020)
Units: 3, Repeatable up to 12 units

PHYS 175T. Introduction to Medical Imaging
Introduction to Medical Imaging for Nurses, Physical Therapists and other Professionals in the Health Care Setting. This course will cover an overview of multiple modalities in medical imaging such as x-rays, nuclear medicine, fluoroscopy, CT, MRI, etc.
Units: 3
PHYS 180. Seminar in Physics
Prerequisite: senior or graduate physics major or permission of department chair.
Units: 1. Repeatable up to 3 units
Course Typically Offered: Fall, Spring

PHYS 190. Independent Study
See Academic Placement. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

PHYS 203. Classical Mechanics
Prerequisites: PHYS 105B, PHYS 170A. Advanced treatment of classical analytical mechanics including Lagrange's and Hamilton's formulation of the laws of motion, special relativity, small oscillation theory, hydrodynamics.
Units: 4

PHYS 220A. Advanced Electricity and Magnetism
Prerequisites: PHYS 107B, PHYS 170A. Electromagnetic theory and its applications; electrostatics, boundary-value problems in electrostatics, dielectrics, multipoles, magnetostatics, Maxwell's equations, electromagnetic radiation, optical properties of materials, wave guides and resonant cavities.
Units: 3

PHYS 220B. Advanced Electricity and Magnetism
Prerequisites: PHYS 107B, PHYS 170A. Electromagnetic theory and its applications; electrostatics, boundary-value problems in electrostatics, dielectrics, multipoles, magnetostatics, Maxwell's equations, electromagnetic radiation, optical properties of materials, wave guides and resonant cavities.
Units: 3

PHYS 222A. Quantum Mechanics I
Units: 3

PHYS 222B. Quantum Mechanics II
Units: 3

PHYS 262. Advanced Condensed Matter Physics
Prerequisites: PHYS 115, PHYS 162, PHYS 170A. Binding and crystal structure, crystal electron theories, elementary excitations, transport theories, crystal defects, superconductivity.
Units: 3

PHYS 270. Advanced Mathematical Physics
Prerequisite: PHYS 170A. Group theory, including continuous (Lie) groups, Lie algebras, and an introduction to the theory of representations, Green's functions and their applications to physical problems, and integral equations including diagrammatic methods of solution.
Units: 3

PHYS 272. General Relativity
Prerequisite: PHYS 203. The principle of equivalence, tensor calculus in curved space-times, the Einstein-Hilbert equations, the Schwarzschild solution, tests of general relativity, gravitational radiation, introduction to cosmology.
Units: 3

PHYS 275T. Topics in Contemporary Physics
Advanced topics in such areas as modern optics, plasma physics, high energy physics, astrophysics, nuclear physics, biophysics. Some topics may have labs.
Units: 1-3

PHYS 290. Independent Study
See Academic Placement. Approved for RP grading.
Units: 1-3

PHYS 298. Project
Prerequisite: permission of instructor. Scholarly investigation by the advanced graduate student as a culminating experience for the master's degree, including a written project report and an oral defense, and followed by a competency exam. Approved for RP grading.
Units: 2-6

PHYS 298C. Project Continuation
Pre-requisite: Project PHYS 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0
PHYS 299. Thesis
Prerequisite: See. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.
Units: 2-6

PHYS 299C. Thesis Continuation
Pre-requisite: Thesis PHYS 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

PSCI 21. Elementary Astronomy
Recommended: second-year high school algebra. Concepts, theories, important physical principles, and history of astronomy. Stellar properties, distances, and evolution. Three field trips for observing with telescopes. G.E. Breadth B1. (3 lecture, 2 lab hours) (Course fee, $40)
Units: 4
GE Area: B1

PSCI 131. Concepts of Classical Physics from Babylon to Maxwell
Units: 3
GE Area: IB

PSCI 168. Energy and the Environment
Prerequisite: G.E. Foundation an Breath Area B. Analysis of energy crisis; introduction to various forms of energy, energy conversion processes and environmental effects; present energy supply and energy projections; future energy demands and ways of evaluating alternatives. G.E. Integration IB
Units: 3
GE Area: IB

PSCI 180T. Topics in Physical Science
Detailed discussion of special topics within the realm of physical science.
Units: 1-3

PLANT SCIENCE

AGRI 200. Biometrics in Agriculture
Prerequisites: PLANT 99, AGBS 71, or MATH 101, or permission of instructor. Advanced concepts in the design of agricultural experiments. Emphasis is placed on the selection of appropriate designs to meet the objectives of well-planned experiments. Relative merits of various designs and topics in analysis, interpretation, and regression are covered.
Units: 3

AGRI 201. Agricultural Laboratory Techniques
Prerequisite: One of the following courses: BIOL 161; CHEM 105, CHEM 129A, CHEM 151; FSC 115. Agricultural problem solving through the application of advances in laboratory technology, crop management, foods, nutrition, soil and water quality. Theory and practice operation of scientific instruments and techniques are taught. Student defined project and report required. (2 lecture, 3 lab hours)
Units: 3

MEAG 1. Introduction to Agricultural Mechanics
Selection, care, and use of common farm tools, projects of wood and metal; mechanical skills in the field of agriculture. (2 lecture, 3 lab hours) (Course fee, $35)
Units: 3
Course Typically Offered: Fall, Spring

MEAG 3. Agricultural Tractors
Study of functions physical capabilities, applications, economics and improvement of tractors. Testing and analysis of tractors in laboratory and field conditions to maximize efficiencies. (2 lecture, 3 lab hours; 5 hours field operation)
Units: 3
Course Typically Offered: Fall

MEAG 5. Power Equipment Safety
Safety training for operation of power equipment. Meets requirements of Senate Bill 198 and University Agricultural Laboratory (UAL) for classroom safety instruction on using tractors and similar power equipment. Satisfactory completion meets safety training portion requirement of the UAL Tractor License. (16 hours, meets four consecutive times) CR/NC grading only. (FOrmerly PLANT 170T)
Units: 1
Course Typically Offered: Fall, Spring

MEAG 20. Agricultural Machinery and Equipment
The study of functions and applications of machinery and equipment. Setup, and calibration, analysis and adjustment of agricultural machinery common to the San Joaquin Valley under field conditions will be emphasized. Equipment will be evaluated for efficiency and effective performance. (2 lecture, 3 lab hours)
Units: 3
MEAG 50. Metallurgical Processes
(AM 71 same as MEAG 50.) Fundamentals of metallurgy; properties and characteristics of metals; survey of metal welding processes, equipment, and procedures; theory-discussion and laboratory experience in oxygen-fuel welding, cutting, brazing, and shielded metallic arc welding. (2 lecture, 3 lab hours) (Course fee, $50)
Units: 3
Course Typically Offered: Fall, Spring

MEAG 53. Electricity and Electronics
(IT 52 same as MEAG 53.) Introduction to electricity including fundamentals of electrostatics, alternating and direct current electrical circuits, electrical calculations, magnetics, circuit applications, electrical measuring, and test equipment. Schematics and wiring diagrams, standards, and codes. (2 lecture, 2 lab hours) (Course fee, $5)
Units: 3
Course Typically Offered: Fall, Spring

MEAG 103. Electro-Hydraulics
Prerequisites: MEAG 3. Theory and practice in the operation, service, adjustment, and function of the component parts of fluid power systems. Design application of systems to agricultural equipment. Major emphasis is on computerized electronic controls of hydraulic systems. (2 lecture, 3 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

MEAG 112. Power Systems Technology
Prerequisite: MEAG 3. Principles of the internal combustion engine; overhauling, repairing, and adjusting of gasoline, diesel, and LPG farm engines. Practices in repair technology and engine replacement as well as cost analysis decisions. (2 lecture, 3 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

MEAG 113. Power Transmissions
Prerequisite: MEAG 3. Theory and operation of electro-hydraulic assist transmissions, synchronized transmissions; gear transmissions; clutches; brakes; final drives, selecting devices, mechanical front wheel drives, four wheel drive, and rubber/steel track drives. (2 lecture, 3 lab hours)
Units: 3
Course Typically Offered: Fall

MEAG 114. Small Gasoline and Compact Diesel Engines
Prerequisite: MEAG 1. Theory of operation, maintenance, and repair of small gasoline and diesel internal combustion engines. Emphasis on use of small engines in agricultural education. (2 lecture, 3 lab hours)
Units: 3
Course Typically Offered: Fall, Spring

MEAG 120. Advanced Farm Machinery
Prerequisite: MEAG 3. Theory, operation, and management economics of planters, tillage tools, harvesting and spraying equipment. Managerial responsibilities under State and Federal mandates will be emphasized. (2 lecture, 3 lab hours)
Units: 3
Course Typically Offered: Fall

PLANT 1. Introduction to Plant Science
Principles of plant structure, heredity, physiology and climate in relation to growth, adaptation and management of crops. Emphasis is placed on food and fiber crops.
Units: 3

PLANT 20. Introduction to Crop Science
Not open to students with credit in upper-division CR SC courses. Principles of production for cereal, row, forage and vegetable crops. Culture, insect and disease control, harvesting, storage, and marketing. (Formerly CRSC 1)
Units: 3
Course Typically Offered: Fall, Spring

PLANT 30. Introduction to Fruit Science
Not open to students with credit in upper-division HORT courses. Origin and distribution of grape and tree fruit crops. Botanical and commercial classification of grapes and tree fruits and their culture in California. (Formerly HORT 1)
Units: 3
Course Typically Offered: Fall

PLANT 40. Introduction to Ornamental Horticulture
Not open to students with credit in upper-division OH courses. Planting and maintenance of the home landscape; selection, planting, fertilization, and pruning of plants; lawn planting and care. (2 lecture, 3 lab hours) (Formerly OH 1)
Units: 3
Course Typically Offered: Fall, Spring

PLANT 41. Floral Design
Principles and rules of design and color using plants as a media; European and Japanese influences; emphasis on American line-mass and contemporary designs. An assortment of arrangements are made in lab. (2 lecture, 3 lab hours) (Course fee, $50) (Formerly OH 4)
Units: 3
Course Typically Offered: Fall, Spring

PLANT 60. Introduction to Plant Health
Not open to students with previous credit in upper-division PLT H courses. Origin, history, and evaluation of protective measures (chemical, biological, and cultural) for management
of insects, diseases, weeds, and rodents in the field and around the home. (Formerly PLTH 1)

Units: 3

PLANT 70. Introduction to Irrigated Soils
Interpretation of physical and chemical properties of biological and mineral matter for the management of soils in irrigated agriculture. Emphasis on soil/plant and plant/water relationships. (Formerly SW 1)

Units: 3

PLANT 71. Agricultural Water
Water resources and problems in California; water requirements for agricultural and ornamental crops; irrigation scheduling and application methods. (2 lecture, 3 lab hours) (Formerly SW 2)

Units: 3
Course Typically Offered: Fall

PLANT 99. Introduction to Biometrics
Prerequisite: Math 11 or permission of instructor. Introduction to experimental methods and statistical procedures with particular emphasis on applied biological systems. Design of experiments; statistical analysis and interpretation.

Units: 3
Course Typically Offered: Fall

PLANT 100. Aspects of Crop Productivity
Prerequisite: BIOL 11. Study of the growth, development, and basic physiological processes of cultivated crops. Environmental influences on crop growth and development processes and management techniques to minimize stresses and maximize crop yield and quality.

Units: 3
Course Typically Offered: Fall, Spring

PLANT 101. Crop Nutrition
Prerequisite: PLANT 172. Evaluation of nutrient elements in soils; application of fertilizers and organic waste to meet nutrient requirements; soil and plant tissue analysis and interpretation; fertilizer recommendations for different crops. (2 lecture, 3 lab hours) (Formerly SW 101)

Units: 3
Course Typically Offered: Fall

PLANT 105. Food, Society, and Environment
Prerequisites: General Education Foundation and Breadth Area B completed, Junior standing required. Linkages among food production systems, human social behavior, and environmental quality. Basic principles of environmental and agricultural sciences as applied to interrelationships among social value systems, agricultural activities and environmental resources. G. E. Intergration IB.

Units: 3

Course Typically Offered: Spring, Fall GE Area: IB

PLANT 107. Plant Propagation
Prerequisite: BIOL 11, CHEM 3A. Principles and practices of propagating plants, sexual and asexual. Seeds, cuttings, layering, grafting, budding, and tissue culture. Propagation media and rooting aids. (2 lecture, 3 lab hours; field trips)

Units: 3
Course Typically Offered: Spring

PLANT 108. Micropropagation
Prerequisites: BIOL 11, and BIOL 161 or CHEM 150 or permission of instructor. Principles of plant propagation by aseptic cell and organ culture as a means of rapid cloning, elimination of systemic plant diseases, production of somatic hybrids, ploidy change, and other genetic variants for use in plant breeding. (2 lecture, 3 lab hours) (Formerly PLANT 102)

Units: 3

Course Typically Offered: Fall

PLANT 110W. Dimensions in Agriculture
Prerequisites: satisfactory completion of the ENGL 5B or ENGL 10 graduation requirement. Current agricultural problems and developments; nature of agricultural industries in a changing world. Interrelationships among agriculture, government, labor, and the public. Meets the upper-division writing skills requirement for graduation.

Units: 3
Course Typically Offered: Fall, Spring

PLANT 120. Row Crops
Prerequisites: BIOL 11, PLANT 20. The culture of beans, cotton, sugar beets, and oil crops; varieties, nutrition, insect, disease, and weed control; harvest, storage, uses, and marketing. (2 lecture, 3 lab hours) (Formerly CRSC 101)

Units: 3
Course Typically Offered: Fall

PLANT 121. Cereal and Forage Crops
Prerequisites: BIOL 11, PLANT 20. The culture of barley, corn, sorghum, oats, rice, rye and wheat; varieties, nutrition, insect disease, and weed control; harvest, storage, uses, and marketing. (2 lecture, 3 lab hours) (Formerly CRSC 102)

Units: 3

Course Typically Offered: Fall

PLANT 122. Range Ecology and Management
Prerequisites: BIOL 10 or BIOL 11, PLANT 20. Identification of range and pasture plants; carrying capacity; methods of range and pasture improvement, grazing management, water development, rodents, fertilization, reseeding, brush removal; mountain range resources. (2 lecture, 3 lab hours) (Formerly CRSC 105)

Units: 3

PLANT 123. Range Crop Management
Prerequisites: BIOL 11, PLANT 122. The culture of forage species in southern California; pasture management; grazing systems; grassland improvement; and related topics. (2 lecture, 3 lab hours)

Units: 3

Course Typically Offered: Fall
Course Typically Offered: Spring

PLANT 123. Vegetable Production
Prerequisites: BIOL 11, PLANT 20. Cultural practices, harvesting, processing, and marketing of vegetables of economic importance to California and the San Joaquin Valley. (2 lecture, 3 lab hours) (field trip fee, $65) (Formerly CRSC 111)
Units: 3
Course Typically Offered: Fall

PLANT 124. Organic Crop Production
Prerequisites: BIOL 11, CRSC 1. Cultural practices, harvesting, processing, and marketing of organically grown crops of economic importance to California and the San Joaquin Valley. (2 lectures, 3 lab hours) (Formerly CRSC 115)
Units: 3
Course Typically Offered: Spring

PLANT 130. Fruit Species of California
Prerequisite: BIOL 11 or PLANT 30 or PLANT 40. Fruit and nut species common to California, their adaptation and uses. (Formerly HORT 110)
Units: 3
Course Typically Offered: Spring

PLANT 132. Principles of Pomology II
Prerequisite: BIOL 11 or PLANT 30. Pruning, fruit and vegetative development, pollination, rootstocks, propagation, and nutrition. Crop fundamentals of spring cultural practices. (2 lecture, 3 lab hours) (Formerly HORT 112)
Units: 3
Course Typically Offered: Fall

PLANT 133. Citrus and Subtropical Fruits
Prerequisite: BIOL 10 or BIOL 11 or PLANT 30. Geographic distribution, climatic and soil adaptation of subtropical fruit crops. Fruit and vegetative development and cultural practices for globally important fruit crops. Emphasis on citrus and olive (2 lecture, 3 lab hours) (Formerly HORT 113)
Units: 3
Course Typically Offered: Fall

PLANT 134. Micrometeorology
(GEOG 114 same as PLANT 134.) Prerequisites: MATH 75 (or equivalent) and GEOG 5 (or equivalent), or permission of instructor. Micrometeorological influences on local climates including natural ecosystems and varying agricultural canopies. Local climate influences on wildlife, domestic animals, and humans. Manipulation of local climate including frost protection, irrigation and wind sheltering. Microclimates of non-uniform terrain and urban environment. (2 lecture, 3 lab hours) (field trip fee, $65) (Formerly OH 104)
Units: 3
Course Typically Offered: Fall

PLANT 140. Greenhouse & Nursery Crop Production
Prerequisites: BIOL 11 or PLANT 40. Fundamentals of greenhouse and nursery crop production. Emphasis on sustainable and economically viable production and management systems for significant flower, foliage and nursery crops. (3 lecture, 3 lab hours; field trips) (Formerly OH 104)
Units: 4
Course Typically Offered: Fall

PLANT 141. Woody Plant Materials
Prerequisites: BIOL 11 or PLANT 40. Survey of woody plant materials including identification, growth habits and cultural requirements. Emphasis on plants used in the California landscape. (2 lecture, 3 lab hours; field trips) (Formerly OH 108)
Units: 3
Course Typically Offered: Fall

PLANT 142. Herbaceous Plant Materials
Prerequisites: BIOL 11 or PLANT 40. Survey of herbaceous plant materials including identification, growth habits and cultural requirements. Emphasis on plants used in California landscapes, botanical gardens and arboreta. (2 lecture, 3 lab hours; 2 Saturday field trips) (Formerly OH 109)
Units: 3
Course Typically Offered: Fall

PLANT 143. Turfgrass Production and Management
Prerequisites: BIOL 11 or PLANT 40. Production and maintenance of grass for lawns, public parks, public institutions, playgrounds, playing fields, golf courses, bowling greens; identification of turfgrasses and turfgrass seed. (2 lecture, 3 lab hours; field trip) (Formerly OH 110)
Units: 3
Course Typically Offered: Fall

PLANT 150. Crop Improvement
Prerequisite: BIOL 11. Application of genetic, cytological and environmental principles to improvement of plants; heredity and variation in plants, effects of environmental factors, biotechnology, self- and cross-fertilization, principles and results of selection and hybridization in plant improvement. (2 lecture, 3 lab hours) (field trip) (Formerly PLTH 105)
Units: 3
Course Typically Offered: Fall

PLANT 160. Weed Science
Prerequisites: BIOL 11; CHEM 3A. Vegetation management in California. Identification of common weeds. Fundamentals of preventive, cultural, biological, physical, and chemical weed control methods. (2 lecture, 3 lab hours) (Formerly PLTH 105)
Units: 3
PLANT 161. Plant Pathology  
Prerequisite: BIOL 1A or BIOL 11. Study of the causal agents, disease cycles, and control of plant diseases. (2 lecture, 3 lab hours) (Formerly PLTH 106)
Units: 3
Course Typically Offered: Fall

PLANT 162. Economic Entomology  
Prerequisite: BIOL 11. Biology, ecology, management and taxonomy of economically important arthropods, with special emphasis on agricultural ecosystems in California. (2 lecture, 3 lab hours) (Formerly PLTH 103)
Units: 3
Course Typically Offered: Fall

PLANT 163. Integrated Pest Management  
Prerequisite: PLANT 162. Concepts and principles of integrated pest management. Insect and mite pest problems; sampling techniques; biology and ecology of major agricultural crop pests; integration of control measures for management of economic pests. (2 lecture, 3 lab hours) (Formerly PLTH 108)
Units: 3
Course Typically Offered: Spring

PLANT 164. Plant Nematology  
Prerequisites: BIOL 1A or BIOL 11. Biology, taxonomy, host-parasite relationships, soil ecology, conventional and innovative controls, plant diagnosis and laboratory techniques with emphasis on plant-parasitic species. (Formerly PLTH 104)
Units: 3
Course Typically Offered: Fall

PLANT 165. Pesticides  
Prerequisite: CHEM 3B or CHEM 8. Typical uses, modes of action, mechanisms of selectivity, environmental interactions, and user safety of insecticides, herbicides, fungicides, nematocides, rodenticides, and plant growth regulators. Effective and safe use of agriculture chemicals by reading labels and following laws/regulations. (Formerly PLTH 102)
Units: 3
Course Typically Offered: Fall

PLANT 166. Mycology  
Prerequisites: Biol 1A or Biol 11. Growth, physiology, reproduction, taxonomy, ecology, and economic impacts of fungi, slime molds, and oomycota. Role of fungi as symbionts, pathogens, and saprophytes are examined (2 lecture, 3 lab hours) (Formerly PLANT 170T)
Units: 3

PLANT 167. Diagnosis and Control of Plant Diseases  
Prerequisite: PLANT 161. Techniques for diagnosis of specific diseases in California and selection criteria for control strategies. Students will practice diagnostic techniques for selecting preventative, cultural, biological, physical, and chemical disease control strategies for major plant diseases. (2 lecture, 3 lab hours) (Formerly PLTH 109)
Units: 3
Course Typically Offered: Spring

PLANT 168. Biological Control  
Prerequisite: PLANT 162. Study of the action of parasites, predators, and pathogens on the population dynamics of their host/prey organisms; focus on arthropods, with additional emphasis on microorganisms, weeds, nematodes, and vertebrates. (Formerly PLTH 107)
Units: 3

PLANT 170T. Topics in Plant Science  
Prerequisite: junior standing. Selected topics in plant science, agronomy, horticulture, and other associated areas. Topics may require lab hours.
Units: 1-4

PLANT 170T. Bee Biology & Apiiculture  
Prerequisites:PLANT 162. This course provides an overview of the practice of apiculture (beekeeping), pollinator ecology, and the practical considerations of pollination in agriculture. Students are provided with a theoretical background on these topics and hands on experience managing honey bee hives. Special emphasis is placed on the practice or rearing honeybee colonies. (Offered Spring 2020)
Units: 3

PLANT 171. Soils in the Environment  
Prerequisite: CHEM 3A. Physical, chemical, and biogolgical properties of soils as the interconnecting link in the biosphere; factors that influence soil formation; role of soil in food and fiber production. Not open to Plant Science and Viticulture & Enology majors. ( 2 lecture; 3 lab hours). No credit if taken after PLANT 172. (Formerly SW 100N)
Units: 3
Course Typically Offered: Fall

PLANT 172. Soils  
Prerequisites: CHEM 3A, intermediate algebra. Physical, chemical, and biologic properties of soils as a medium for plant growth and as a natural body, factors that influence soil formation; food and fiber production; fertilizer and soil amendment use and environmental impact; soil's role in the biosphere. (Formerly SW 100)
Units: 3
Course Typically Offered: Fall

**PLANT 172L. Soils Lab**
Prerequisite: PLANT 172 or concurrently. Physical, chemical, and biological analysis. Interpretation of field and laboratory data. (3 lab hours) (Saturday field trip) (Formerly SW 100L)
Units: 1
Course Typically Offered: Fall

**PLANT 174. Soil and Water Management**
Prerequisites: PLANT 71, PLANT 172 (may be taken concurrently). Management of irrigated soils with particular emphasis on crop water requirements, irrigation scheduling, salinity, and other physical and chemical soil problems of field crops, permanent crops and landscapes. (Formerly SW 104)
Units: 3
Course Typically Offered: Fall

**PLANT 175. Irrigation Systems**
Prerequisite: PLANT 71. Principles of planning, installation and evaluation of irrigation systems for field crops, permanent crops and ornamental horticulture. Pressurized systems (sprinkler and drip irrigation) emphasized. (Formerly SW 111)
Units: 3
Course Typically Offered: Spring

**PLANT 180. Undergraduate Research**
Open to juniors and seniors. Exploratory work on a suitable agricultural problem in plant science. Approved for RP grading.
Units: 1-4
Course Typically Offered: Fall, Spring

**PLANT 190. Independent Study**
See Academic Placement--Independent Study. Approved for RP grading.
Units: 1-3

**PLANT 194I. Agricultural Internship**
Prerequisite: junior standing; approval of faculty adviser and department chair. Field experience in your career specialty that integrates with classroom instruction. Written reports of knowledge and experience gained are required. CR/NC grading only.
Units: 1-8
Course Typically Offered: Fall, Spring

**PLANT 196. Crop Projects**
Prerequisite: MEAG 3, appropriate production course, UAL Tractor License, and permission of instructor. Knowledge gained from classroom instruction applied to field conditions. Students will participate in growing and marketing a crop using the University Agricultural Laboratory. Approved for RP grading.
Units: 1, Repeatable up to 4 units

**PLANT 250T. Topics in Plant Science**
Prerequisites: upper-division plant science COURSE appropriate to study topic; or permission of instructor. Advanced studies in a selected area of Plant Science which could include new or emerging issues and technologies. Topics may require lab hours.
Units: 3, Repeatable up to 6 units

**PLANT 251. Soil-Plant-Water Relations**
Prerequisites: BIOL 161 and SW 100. Water flow and solute transport through the soil-plant-atmosphere continuum (SPAC). Soil-plant-water relationships affecting water use efficiency, agriculture productivity, and environmental quality. Management of salinity, drainage, and trace elements. Irrigation scheduling and water quality. (2 lecture, 3 lab hours)
Units: 3

**PLANT 252. Plant Nutrition**
Prerequisite: BIOL 161, and SW 100, or permission of instructor. Soil factors influencing nutrient availability, mineral requirements of plants, acquisition and translocation of nutrients and their role in plant metabolism. Soil and tissue analysis for fertility management. (2 lecture, 3 lab hours)
Units: 3

**PLANT 255. Advanced Plant Breeding**
Prerequisite: PLANT 150. Principles and techniques of plant improvement, breeding methods, combining ability, sterility systems, quantitative genetic analysis, heritability estimates, experimental designs for plant breeding.
Units: 3

**PLANT 257. Physiology of Cultivated Plants**
Prerequisite: BIOL 161, or permission of instructor. Plant cell structure and function. Response of cultivated plants to the environment. Physiology and hormonal control of flower induction, fruit set, and development. Review of pertinent current publications.
Units: 3

**PLANT 258. Plant Health Management**
Prerequisites: PLTH 108 or permission of instructor. Comprehensive study of arthropod, disease, and weed problems in California cropping systems. Examination of complex relationships among crop plants and other biological organisms in agro-ecosystems design crop health management programs that are economically viable and ecologically sound.
Units: 3

**PLANT 270. Seminar in Plant Science**
Reviews of published and/or original research in the broad areas of crop science, soil and water relations, and plant health.
Units: 1, Repeatable up to 4 units

PLANT 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

PLANT 299. Thesis
Units: 3, Repeatable up to 6 units

PLANT 299C. Thesis Continuation
Pre-requisite: Thesis 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

POLITICAL SCIENCE

MPA 200. Administration and Society
How administration acts and is acted upon by institutional forces and values; role of history, cultural, ethical, political, social, and economic values and institutions; an emphasis on: bureaucracy, economy and democracy, centralization vs. decentralization, professionalism and society; alternatives to bureaucracy.
Units: 3

MPA 201. Quantitative Applications for Public Administration
Exploring different methods of data analysis for understanding how public decisions are made and public policies are evaluated. Data collection; measurement; sampling; data analysis, including regression, are explored with practical applications. (Formerly MPA 120G)
Units: 3

MPA 210. Organizational Theory in Public Administration
A study of the key issues involved in the management of public organizations. This examination of organizational behavior and theories of complex organizations includes the following: Leadership styles; communication; organizational change; hierarchy and organizational structure; and organizational culture.
Units: 3

MPA 215. State and Local Government
State and local government will prepare students to understand the history of these governmental units and how they interact with the Federal government. Legislatures, executives, courts and city, and county councils are studied, particularly in terms of their emphasis on public policy.
Units: 3

MPA 230. Public Budgeting
This course examines the budget process, the use of economic analysis in evaluating taxation and expenditure issues, and the development and analysis of budget proposals. The course also includes discussion of burdens and effectiveness of different taxes and considers potential reforms to the budgeting process.
Units: 3

MPA 240. Seminar in Public Management
An inquiry into contemporary issues facing public managers. Topics that can be covered include: Accountability; performance management; development of information technology; e-government; public management reforms; implications of privatization/contracting out; and public governance.
Units: 3

MPA 241. Resource Management
Prerequisite: MPA 240. Administration of fiscal and human resources. Emphasis on resource acquisition, allocation, and development strategies; budgeting skills, debt, and financial management. Human asset management, labor relations, position classification and analysis, quality of work life and employment equity issues.
Units: 3

MPA 245. Human Resources Management
This course explores the development of the merit system in government; hiring and termination; career development; human resource planning; management-labor relations; equal opportunity; affirmative action; workplace diversity; and the legal dimension of the public personnel system.
Units: 3

MPA 250. Ethics and Public Administration
Prerequisite: MPA 210. The moral dimensions of public administrative decision-making. The nature of public and private morality; psychological and ethical egoism; relativism; utilitarianism and deontological theories; rights and goods in the public service context; sensitive applications of rules in public agencies.
Units: 3
MPA 260. Public Policy Administration
Prerequisites: MPA 120G, MPA 200, MPA 210, MPA 240.
A study of policy initiation, formulation, and implementation and a public manager's role in them; management processes and functions in the policy process; policy justification and advocacy, policy analysis, and implementation evaluation.
Units: 3

MPA 280T. Topics in Public Administration
Selected topics meeting student needs and interests that are not met in other university courses.
Units: 3, Repeatable up to 6 units

MPA 280T. Western Water Politics and Policy
This is a special course designed for graduate students. Students will learn about the history of, and current controversies in, water politics and policy in the American west, with a special emphasis on California. The west is heavily dependent on the artificial movement of water from place to place for survival, but in the last couple of decades political controversies have erupted leaving the future of the west's water system in doubt. Students in this course will learn how we came to this point and what our options are for the future. (Offered Spring 2020)
Units: 3

MPA 280T. Economic Development
Provides an overview of economic development theories and policies, with practical techniques employed to enhance economic growth, jobs and incomes, leading to increased municipal revenues. Includes formulation and presentation of an economic development plan, including indicators for measuring success. (Offered Spring 2020)
Units: 3

MPA 287. Internship in Public Administration
Supervised work experience for a realistic exposure to an organizational-bureaucratic environment for students in the M.P.A. program who lack significant work experience in a public or nonprofit organization. CR/NC grading only.
Units: 3

MPA 290. Independent Study
See Academic Placement--Independent Study. Approved for RP grading.
Units: 1-4

MPA 299. Thesis
Prerequisite: See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the Master's degree. Approved for RP grading.
Units: 3

MPA 299C. Thesis Continuation
Pre-requisite: MPA 299 Thesis. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

PLSI 1. Modern Politics
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Introduction to the study of democratic and authoritarian political systems; evaluation of the historical, cultural, and economic contexts of modern politics around the world; institutional structures and functions; political ideologies; individual and group participation in the political process; current issues. G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3

PLSI 2. American Government and Institutions
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Meets the United States Constitution requirement and the federal, California state, and local government requirement. Not open to students with credit in PLSI 101. The development and operation of government in the United States; study of how ideas, institutions, laws, and people have constructed and maintained a political order in America. Not available for CR/NC grading. G.E. Breadth D2.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: D2

PLSI 90. Methods of Analysis of Quantitative Political Data
An introduction to hypothesis testing in political science, with applications to the analysis of quantitative political data; the formulation of research problems and hypotheses; accuracy and precision in measurements; problems of evidence and inference; basic techniques of statistical analysis.
Units: 3
Course Typically Offered: Fall, Spring

PLSI 102. California Government and Institutions
Not open to students with credit in PLSI 2. Open only to students who have satisfied United States Constitution requirement but have not satisfied California state and local government requirement. Examination of legislative, executive, judicial, and local government problems in California. Not available for CR/NC grading.
Units: 1
Course Typically Offered: Fall, Spring

PLSI 103. California Politics
Satisfies California state and local government requirement, if not used for political science major. Emphasis on the historical development of politics in California and the factors and
institutions important to contemporary politics: characteristics of the electorate, voter registration, primaries and general elections, candidates and campaigning, party organizations and leaders, interest groups, and current issues.

Units: 3

PLSI 107. Women in US Politics
(WS 107 same as PLSI 107). Prerequisites: at least one 3 unit WS or PLSI course. The course examines how women have shaped and been shaped by U.S. politics along with how gender impacts U.S. political thought, institutions, and practices.

Units: 3

PLSI 110. Seminar in History of Political Thought to Machiavelli
Development of political thought from Plato to Machiavelli: law, justice, the state, authority, forms of government, and church-state relations in light of the philosophy of history.

Units: 3

Course Typically Offered: Fall, Spring

PLSI 111. Seminar in History of Political Thought Since Machiavelli
Freedom and individual rights, democracy, majority rule, equality, law and authority, power, constitutionalism, property, social class and structure, and revolution traced through the writings of Hobbes, Locke, Rousseau, Hume, Burke, Bentham, Hegel, Tocqueville, and Mill.

Units: 3

PLSI 114. Seminar in American Political Thought
Analysis of democracy, majority rule and minority rights, constitutionalism, federalism, representation, pluralism, property, separation of powers, and judicial review based on the perspectives of representative early and contemporary American thinkers.

Units: 3

Course Typically Offered: Spring

PLSI 119T. Topics in Political Theory
Possible topics include theories of democracy; the Marxist tradition; political thought of specific authors, historical periods and countries; peace and war; church-state relations; the nature of politics and of political science.

Units: 1-4

PLSI 120. International Politics
Prerequisites: G.E. Foundation and Breadth Area D. Dynamics of political interactions of nations: nationalism, imperialism and interdependence; national power and diplomacy; types of conflict, including war; peaceful settlement of disputes; current issues involving competing foreign policies, national development, energy, and national liberation movements. Multicultural/International M/I.

Units: 3

Course Typically Offered: Fall, Spring

PLSI 121. American Foreign Affairs
Prerequisite: PLSI 2. Formulation and execution of American foreign policy; constitutional frame work; role of the president and the executive branch, Congress, pressure groups and public opinion; contemporary problems and policies.

Units: 3

PLSI 122. Politics of Foreign Aid
Theory and practice of foreign aid, including U.S. policy, current debates, continuing challenges, approaches, issue-areas, and key actors (governmental and non-governmental, domestic and international organizations). (Formerly PLSI 128T)

Units: 3

PLSI 125. Russian Foreign Policy
Historical and ideological sources of foreign policy of Russia and other former Soviet republics; continuity and change in methods, strategy, and tactics; policy formulation and application in specific geographic and subject matter areas.

Units: 3

PLSI 126. International Law and Organization
The sources and subjects of international law; state jurisdiction and responsibility; international agreements; the regulation of force and the peaceful settlement of disputes through international law and organization, including the League of Nations, the United Nations, and regional organizations.

Units: 3

PLSI 128T. Topics in International Relations
Politics of military power; arms limitation and control; peace theory; ecopolitics; regionalism and cooperation; shifts in balance of power; nationalism; imperialism; neutralism and nonalignment; foreign policies of specific nations.

Units: 1-4

PLSI 128T. Global Political Economy
This course serves as a basic introduction to the study of global political economy. Students will examine the various schools and methods for understanding the relationship between economics and politics and subsequently the relationship between international market and states. (Offered Spring 2019)

Units: 3

PLSI 140. Approaches to Comparative Politics
Prerequisite: PLSI 1. Exploration of theories, models, and conceptual frameworks for the comparative study of political systems and subsystems; methodological rather than an area emphasis.
Units: 3
Course Typically Offered: Fall, Spring

PLSI 141. Russian Politics
A study of the political systems of Russia and other former Soviet republics. Changes in relations between state and society; change and continuity in political culture; trends in policy making; issues of relations between nationality groups.
Units: 3

PLSI 142T. Area Studies in Western Europe
Government and politics of Western Europe (Britain, France, Germany, and Italy), Northern European Countries (Finland, Denmark, Norway, Sweden); or government and politics, of selected countries.
Units: 1-4

PLSI 143T. Area Studies in Eastern Europe
Government and politics of Eastern Europe; or government, politics, and institutions of selected countries.
Units: 1-4

PLSI 144T. Area Studies in Africa and Middle East
Government and politics of Sub-Saharan Africa, Middle East; or government, politics, and institutions of selected countries.
Units: 1-4

PLSI 145T. Area Studies in Asia
Government and politics of selected countries in East and Southeast Asia.
Units: 1-4

PLSI 146T. Area Studies in Latin America
Possible topics include politics of South America; politics of Central America and Caribbean countries; roles of selected groups in Latin American politics.
Units: 1-4

PLSI 147. East Asian Politics
Examines the governments, institutions, politics, and policy of China, Japan, North and South Korea, and selected Southeast Asian Nations. (Formerly PLSI 145T)
Units: 3

PLSI 148. Latin American Politics
(CLAS 173 same as PLSI 148) Discusses the role of the military and violence in Latin American politics, the role of civilian groups with emphasis on democratization, and the influence of other nations - especially the United States - on Latin American politics.
Units: 3

PLSI 149T. Seminar in Comparative Government
Parliamentary systems, problems and goals of developing nations, federal systems, comparative local government, parties and pressure groups, and multi-party systems.
Units: 1-4

PLSI 150. Public Policy Making
Examines the institutional and political processes by which public policy is formulated, adopted, and implemented. Individual instruction on student papers (students with fundamental writing deficiencies will be required to enroll in ENGL 1L, 1 unit, concurrently).
Units: 3
Course Typically Offered: Fall, Spring

PLSI 151. Political Participation and Political Parties
Political parties; nature and extent of citizen political activity; election of public officials; political organization of government.
Units: 3

PLSI 152. Public Opinion and Political Behavior
Examines the origins and expression of political attitudes and beliefs, including voting and other political participation, and how public opinion influences public policy. Special attention is given to partisanship, elections, and voting. (Formerly PLSI 156T)
Units: 3

PLSI 153. Presidential Politics
Examines the history, development, and operation of the U.S. Presidency. Special attention is given to the rise of the modern presidency, presidential power (constitutional and extra-constitutional), presidential speech, presidential elections, and the importance of public opinion for presidential power. (Formerly PLSI 159T)
Units: 3

PLSI 154. Congressional Politics
Examines the history, development, and operation of the U.S. Congress. Special attention is given to congressional elections, congressional-presidential relations, and the policy-making process. (Formerly PLSI 159T)
Units: 3

PLSI 155. Interest Group Politics
In this course students learn why people join interest groups, study the size and ideological diversity of the national interest group system, and learn the circumstances under which lobbyists for these groups can influence how American public policy is made.
Units: 3
PLSI 156T. Topics in Political Behavior
Voting behavior, political alienation, leadership, political perceptions and knowledge, environmental effects on political participation, group processes, and political socialization.
Units: 1-4

PLSI 157. Environmental Politics
Examines theory, concepts, and practices in U.S. environmental politics and policy. Topics include ecological principles, the history and philosophy of environmentalism, the contemporary political conflict over environmental policy, and environmental policy analysis. (Formerly PLSI 189T)
Units: 3

PLSI 158I. Internship in Political Science
Option for completion of the Political Science capstone requirement. Includes professional development and career preparation curriculum. Students are matched with government agencies, non-profits, campaigns, and government-related organizations to gain work experience.
Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

PLSI 159T. Seminar in American Government and Politics
Congressional committee operations, policy making by the courts, political implications of civil service, executive initiation of legislation, minority groups and politics, political implications of news reporting; jurisprudence and legal philosophy; legal institutions; conflict resolution.
Units: 1-4

PLSI 160. State and Local Governments
The organization, structure, powers, and functions of state and local governments.
Units: 3
Course Typically Offered: Fall

PLSI 161. Social Movement Politics
Students will learn how and why social movements form, including what kinds of grievances lead to political organization. They will also study the tactics movements use, and why some movements are successful in their political advocacy while others are not.
Units: 3

PLSI 163. Municipal Government
Organization, powers, and functions of city government; types of city charters, relationship between city and state government; police and fire protection, education, water supply, health and sanitation, city planning, debts and taxation, public utilities.
Units: 3

PLSI 169T. Seminar in Metropolitan Government and Politics
Regional and area intergovernmental relations, urban renewal, human relations agencies, and taxation methodology.
Units: 1-4

PLSI 170. Constitutional Law, the Federal Structure
Judicial Review, powers of the president, powers of Congress, federalism, and the contract clause and due process -- economic rights through case studies of leading Supreme Court decisions.
Units: 3
Course Typically Offered: Fall

PLSI 171. Constitutional Law, Civil Liberties, and Civil Rights
Free speech and association, freedom of press, commercial free speech, obscenity, religion guarantees, fourth, fifth, sixth, and eighth amendment issues, and social and political equality through case studies of leading Supreme Court decisions.
Units: 3
Course Typically Offered: Spring

PLSI 172. Moot Court: Appellate Court Proceedings and Advocacy
Uses a fictional Supreme Court case on appeal to expose students to the basic elements of legal research, brief writing, case law, and oral advocacy. Case differs each time the course is taught. (Formerly PLSI 179T)
Units: 3, Repeatable up to 6 units

PLSI 173. Moot Court: Legal Arguments and Courtroom Tactics
Uses a fictional Supreme Court case on appeal to expose students to the basic elements of legal research, brief writing, case law, and oral advocacy. Case differs each time the course is taught. (Formerly PLSI 179T)
Units: 3, Repeatable up to 6 units

PLSI 174. Politics and the Court
An introduction to the judicial process: jurisprudence, courts and social policy, instruments and limitations of judicial power, fact finding, precedents and legal reasoning, statutory and constitutional interpretation, and the search for standards.
Units: 3

PLSI 175. Water Politics and Policy
This course focuses on the development of policy regarding the ownership and use of surface and ground water in the American West, California, and the Central Valley. It also examines the political clash between economic and environmental demands for water.
Units: 3
PLSI 179T. Seminar in Public Law
Administrative law, international law, judicial administration, jurisprudence, legal institutions.
Units: 3, Repeatable up to 9 units

PLSI 181. Public Administration
General analysis of the field of public administration; administrative theories; policy and administration; behavioralism; budgeting, planning, and legal framework.
Units: 3

PLSI 182. Administrative Analysis: Management and Organization
Administrative organization; methods; systems and procedures; problem solving; systems analysis; reports and records; resources management.
Units: 3
Course Typically Offered: Spring

PLSI 183. Comparative Administration
Theories of comparative public administration; cross-national comparisons of administrative processes; institutions, policy formation, and behavior with consideration of cultural, social, and economic environments.
Units: 3

PLSI 184. Public Budgeting and Economy Policy
Examines the administrative and political considerations of revenue generation and expenditure; budget types; the budgetary process and analysis; capital budgeting and debt administration; intergovernmental fiscal relations; monetary and fiscal policy.
Units: 3
Course Typically Offered: Spring

PLSI 185. Public Personnel Management
Examines the evolution of public personnel administration including the development of merit principles, equal employment opportunity, and affirmative action; recruitment, selection, and career development; classification techniques; theories of motivation; public sector labor relations.
Units: 3
Course Typically Offered: Fall

PLSI 188T. Topics in Public Administration
Treatment of current topics and problems in fiscal administration, public personnel administration, and planning.
Units: 1-4

PLSI 190. Independent Study
See Academic Placement --Independent Study. Approved for RP grading.
Units: 1-3
Course Typically Offered: Fall, Spring

PLSI 191. Directed Readings
Directed readings and supplemental and original source material for enrichment of regular offerings in the subdiscipline.
Units: 1

PLSI 192. Study Abroad Capstone
Option for completion of the Political Science capstone requirement. An approved 3-unit course taken at a university outside the US in Political Science or related field that will transfer, along with a written reflection on study abroad experience as it relates to major field and career.
Units: 3

PLSI 193. Senior Research Capstone
Prerequisites: PLSI 90 and senior status. Option for completion of the Political Science capstone requirement. Includes a review of research in major political science subfields. Students learn about research design, conducting research, and will produce a research paper reflective of knowledge and experience acquired as a major.
Units: 3

PLSI 200. Seminar in Methods and Political Systems
Prerequisite: permission of instructor. Systematic analysis of major political cultures and economic systems. Emphasis upon the leading theoretical models of the contemporary international system, issues of political economy, and methods of cross-cultural research.
Units: 3

PLSI 210. International Relations and Political Theory
Prerequisite: permission of instructor. Inquiry into philosophies of international relations with particular emphasis on moral foundations of international law in light of Western political theory. Some contemporary problems selected for in-depth analysis and student research.
Units: 3

PLSI 220. Seminar in Politics and Conflict
Prerequisite: permission of instructor. Analysis of sources of political conflict and methods of conflict resolution with application to selected topics, such as the foreign policy of major powers, the dynamics of political transformation, interaction in regional subsystems, or national defense and arms control.
Units: 3
PLSI 240. Seminar in Politics of Resources and Modernization
Prerequisite: permission of instructor. Analysis of global interdependence and national examples in selected resource areas. Emphasis on approaches to modernization in developing nations and relations between rich nations and poor nations.
Units: 3

PLSI 250. Seminar in Politics and Policy
Prerequisite: permission of instructor. Policy formulation, implementation, and evaluation from a comparative perspective. Examines substantive policy issues common to modern industrial and developing nations from the perspectives of policy analysis and decision-making; considers the role of bureaucracy, the welfare state, political economy, and competing ideologies.
Units: 3

PLSI 270. Advanced Research and Writing in International Relations
Students will conduct primary research on IR topics of their choice, deepening their understanding of key issues, literature, and the application of theory, and gaining essential skills in research, analysis, and writing up to the journal level standard in IR.
Units: 3

PLSI 290. Independent Study
See Academic Placement --Independent Study. Approved for RP grading.
Units: 1-3

PLSI 299. Thesis
Units: 3-6

PUBLIC HEALTH

CI 161. Mth Mtl H S
Units: 3, Repeatable up to 999 units

PH 48. First Responder and Emergency Care
National Safety Council First Responder and Emergency Care course. Priorities of care, injuries, medical emergencies, crisis intervention, and casualty incidents. Includes bleeding, shock, fractures, poisoning, emergency childbirth, CPR Certification for meeting requirements. (2 lecture, 2 lab hours)
Units: 3

PH 49. Emergency Medical Technician Training
Prepares individuals to render pre-hospital basic life support during transport or within a hospital. Upon completion, students will receive a certificate allowing them to take the National Registry test. Upon passing the test, EMT certification is granted.
Units: 3

Course Typically Offered: Fall, Spring

PH 90. Contemporary Health Issues
The course covers information relative to select areas of general health. Information presented will allow students to develop a better understanding of the meaning of health and be able to relate the information and topics to one's own lifestyle. G.E. Breadth E1.
Units: 3

Course Typically Offered: Fall, Spring
GE Area: E1

PH 91. Human Sexuality
Physiological, psychological, social, cultural, and developmental considerations for lifelong understanding related to sexuality. G.E. Breadth E1. (Formerly H S 124)
Units: 3

Course Typically Offered: Fall, Spring
GE Area: E1

PH 92. Public Health Statistics
Introduction to descriptive and inferential statistics as applied to evaluation and research in allied health. Central tendency and dispersion; central limit theorem; hypothesis testing; ANOVA; correlation, nonparametric methods. Interpretations of public health statistics. (3 lecture hours)
Units: 3

Course Typically Offered: Fall, Spring

PH 100. Community Health
Public health services as they affect the community; investigation and analysis of community health problems.
Units: 3

Course Typically Offered: Fall, Spring

PH 104. Global and Cultural Issues in Health
Prerequisite: G.E. Foundation and Area D; PH 90. Influence of culture on health and disease; relevant health issues of cultural and ethnic groups; alternative healing and holistic health; role of international health organizations; health problems on a world scale. History and evaluation of programs of international health organizations; health problems on a world scale. Multicultural/International M/I.
Units: 3
PH 105. Risk Assessment and Analysis
Human and environmental risks as they relate to injuries and illnesses; includes incident causation analysis and assessment. Areas of study encompass occupational safety, consumer products, human factors, environmental health, and human and property costs.
Units: 3
Course Typically Offered: Fall

PH 109. Epidemiology of Disease
Prerequisite: PH 92, Math 11, Psych 42, or DS 73. Modern concepts and principles of epidemiology; interaction of all agents, host, and environmental factors of communicable and noncommunicable diseases.
Units: 3
Course Typically Offered: Fall

PH 110. Drugs, Society, and Health
Examination of physical, neurological, emotional, social, and political factors affecting the use, misuse, and abuse of licit and illicit substances in contemporary American society. Applies models of addiction and compulsive behaviors to gambling, food consumption, and sexual behavior. G.E. Breadth E1.
Units: 3
Course Typically Offered: Fall, Spring

GE Area: E1

PH 111. Alcohol and Alcoholism
Physical, mental, and social factors related to the consumption of alcoholic beverages; the development of alcohol dependence.
Units: 3
Course Typically Offered: Fall, Spring

PH 112. Consumer Health
Consumer health as it relates to selection of health care products and services; how to differentiate fact from fiction in health matters.
Units: 3

PH 114. Health Behavior
An introduction to the theory and practice of health behavior change. Covers individual behavior change methodologies and the effects of public and environmental change on individual health.
Units: 3
Course Typically Offered: Fall, Spring

PH 115. Health Issues of Aging
Basic principles and concepts of the aging process; includes the physical, social, emotional and mental components of health. Benefits of health promotion and preventive action for the aging are also explored.
Units: 3

PH 127. Female Sexuality
(Ph 127 same as WS 127.) Studies on female sexuality which include past and present sexual roles, female sexual response patterns, and discussion of common problems encountered by women functioning as sexual beings.
Units: 3
Course Typically Offered: Spring

PH 128S. Holistic Health and Alternative Medicine
Explores concepts related to holistic health and alternative medicine within a cross-cultural framework. Includes a description of the physical and psychosocial effects of alternative healing; addresses the benefits and risks associated with these therapies. Multicultural/International M/I.
Units: 3

PH 129. Rural Health
Health problems of rural areas including community medical services, medical facilities, federal, state, and local legislation and administrative problems.
Units: 3
Course Typically Offered: Spring

PH 130. Women's Health
(Ph 130 same as WS 130.) Examines current crises/controversies in women's health care. Includes conventional/alternatives approaches to treatment, management, and prevention with emphasis on self-care and promotion of optimum health.
Units: 3
Course Typically Offered: Fall

PH 131. Principles of Health Education
Study of the foundations, theories, systems, and principles of health education. Includes an analysis of social, medical, and environmental factors on health-related behaviors.
Units: 3
Course Typically Offered: Fall, Spring

PH 133. Health Education Methods
It is strongly recommended that students complete PH 114 and PH 131 prior to enrollment in PH 133. Health education program planning, implementation, and evaluation. Provides needs assessment, health education curriculum development, and presenting and evaluating a health education intervention with a client group.
Units: 3
PH 135. Introduction to Human Disease
Concepts and principles of disease and dysfunction of the human body. Detection, diagnosis, treatment, etiology, pathogenesis, and prevention.
Units: 3

PH 141. Applied Ergonomics
Studies the science of ergonomics as it relates to injury/illness prevention and the promotion of a quality work environment. Ergonomics is the evaluation of people and their tools, materials, and equipment in a work setting. (Formerly H S 166T)
Units: 3

PH 143. Occupational Safety
Application of safety and accident prevention measures that provide a basis for insight into the hazards of occupational and industrial situations.
Units: 3

PH 145. Occupational and Environmental Systems Management
Concepts and principles dealing with the problems, processes, evaluation, and solutions in the development, implementation, and management of an effective environmental health and occupational safety program.
Units: 3

PH 151. Health Law and Legislation
The theory and practice of managing inspection-based enforcement programs in health care and environmental health areas, with emphasis on legislation, procedure, and cases relating to public health.
Units: 3

PH 152T. Crossing Borders: Exploring Global Health in the Dominican Republic
This global health program is open to individuals who have basic Spanish skills and who are interested in field experience related to the UN Millenium Development goals while learning heritage, culture, health care delivery systems in the Dominican Republic. Class participants will assist in health education and health promotion activities which may include tutoring English to school children.
Units: 1-3

PH 153. Principles of Healthcare Finance
Principles of Healthcare Finance provides foundational instruction in the practices and responsibilities of the finance function in the healthcare organization and a beginning look at the managers role in the use of financial information.
Units: 3

PH 154. Health Care Administration
Organizational design and managerial principles as they apply to the private sector of health care.
Units: 3

PH 155. Utilization of Health Care Resources
Prerequisite: ECON 40. This course provides understanding of how healthcare systems operate in terms of financing and reimbursement using economic rationales. It introduces students to fundamental principles in health economics that serve as the foundation of the US healthcare system. (Formerly PH 152T)
Units: 3

PH 156. Health & Well-being in the San Joaquin Valley
Why does the San Joaquin Valley experience relatively worse life outcomes? What public policies can improve health and well-being for Valley residents? Historical and current research on the economic, political, environmental, and cultural factors. Application of social-epidemiology frameworks. (Formerly PH 152T)
Units: 3

PH 160. Principles of Toxicology
Basic principles and concepts of toxicology with a particular emphasis on the regulation of environmental and industrial toxicants for man/woman.
Units: 3

PH 161. Environment and Human Health
General principles of environmental health with a particular emphasis on the interaction between man/woman and the environment. Environmental epidemiology, water, wastewater, air, solid waste, ionizing radiation, and noise. Focuses on prevention and control disease and injury caused by chemicals, food protection, air/ water quality radiation, hazardous waste, et cetera.
Units: 3

PH 162. Environmental Health Concepts
Prerequisite: PH 161. Basic principles and concepts of environmental health with a particular emphasis on health hazards, communicable disease control, contamination control, food protection, rodent control, managing special environments, planned environments, and environmental health organizations.
PH 163. Public Health Administration
Principles of public health administration, fundamentals of organization, and administration in public health.
Units: 3
Course Typically Offered: Fall

PH 164. Vector Control
Role vectors of disease play in human health. Basic principles and concepts of vector control. Particular emphasis is given to diseases vectored by arthropods and rodents.
Units: 3

PH 166T. Hazardous Materials Management
Study of principles, applications and regulatory requirements of hazardous materials management. Topics covered include the types, sources, and characteristics of hazardous materials; laws and regulations governing such materials; general management methods and procedures; and hazardous waste minimization strategies. (Offered Spring 2020)
Units: 3

PH 166T. Topics in Environmental Health
Analysis and investigation of selected areas in environmental health with some topics including laboratory experiences.
Units: 1-3

PH 166T. REHS Exam Preparation
To prepare students in taking REHS exam that will allow students to work to improve the quality of life and health through environmental education, consultation, and enforcement. Some areas include food protection, land use, recreational swimming, onsite sewage disposal, drinking water, housing, vector control, disaster sanitation, and solid waste and hazardous materials management.
Units: 1

PH 167. Public Health Laboratory Techniques
Designed to provide training in the use of laboratory procedures and techniques of adjusting and operating monitoring equipment used in water quality, air pollution, noise pollution, food sanitation, radiological health, and toxic substances. (2 lecture, 2 lab hours) (Lab fee, $25)
Units: 3

PH 168A. Occupational Health Concepts
Concepts of occupational health as they pertain to appraising and controlling environmental health hazards; occupational diseases, chemical, biological, and physical agents that produce organic or systemic damage. Problems in toxicology, measurement instruments, and evaluating health hazards. (Formerly HS 168)
Units: 3
Course Typically Offered: Fall

PH 168B. Occupational Health Evaluation
Prerequisite: PH 168A. General principles of investigation for chemical and physical hazards commonly encountered in the occupational environment. Sampling strategies, quantitative analysis, combustible gases, organic vapors, and nonionizing radiation. (2 lecture, 2 lab hours) (Formerly HS 147)
Units: 3
Course Typically Offered: Spring

PH 169. Emergency & Disaster Management: Planning, Response, Recovery
Concepts of risk management, contingency planning and process development for public and private organizations. Topics include risk management issues relating to: biological, chemical, and physical threats, natural disasters, emergency planning and preparation and loss contingency plans.
Units: 3
Course Typically Offered: Spring

PH 170. Air Pollution and Health
A descriptive analysis of air pollutants encountered in the indoor and outdoor environments with an emphasis on assessment of risk, human health effects, and a review of federal and state regulations that apply.
Units: 3

PH 175I. Environmental Internship
Prerequisites: completion of 21 units of the health science major (Core and Environmental Option courses). Provides practical experience in environmental health. Requires a 3.0 GPA in Health Science coursework, or permission of the instructor. Permission numbers required. CR/NC grading only. (CSU liability insurance fee, $8)
Units: 1-4
Course Typically Offered: Fall, Spring

PH 182. Computers for the Health Professions
Introduction to the basic use and practical application of personal and mainframe computers in health-related professions. Laboratory use of computers covers word
processing, SPSS, data entry, data management, principles of programming, and use of on-line databases. (2 lecture, 2 lab hours)

Units: 3

PH 185FI. Fieldwork in Health
Repeatable to 3 units in any one area, maximum total 6. Prerequisite: completion of 24 units of the health science major (Core and Administration Option courses). Provides practical experience in a community work setting. Requires a 3.0 GPA in Health Science coursework, or permission of the instructor. Permission numbers required. CR/NC grading only. (CSU liability insurance fee, $8)

Units: 1-3
Course Typically Offered: Fall, Spring

PH 188I. Health Education Internship
Prerequisite: completion of 24 units of the health science major (Core and Community Health option courses). Provides practical experiences in a community work setting. Requires a 3.0 GPA in Health Science coursework, or permission of instructor. Permission numbers required. CR/NC grading only. (CSU liability insurance fee, $8)

Units: 1-3
Course Typically Offered: Fall, Spring

PH 190. Independent Study
See Academic Placement -- [-LINK-]. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

PH 202. Advanced Public Health Statistics
Prerequisite: PH 92 or equivalent. Theories and limitations of parametric testing: ANOVA, MANOVA, and regression. Focus on nonparametric testing and small samples including Kruskal Wallis, Median and Fischer tests. Preparation of data for computer analysis and interpretation of results. Resource issues related to data collection.

Units: 3

PH 203. Seminar in Community Health Organization
Prerequisite: PH 100. Individual research, analysis, and evaluation in relation to educational aspects of community health programs; group procedures; community organizations; selection, development, and use of media. Field assignments are required. (Formerly HS 203)

Units: 3

PH 206. Environment and Occupational Health
Application and evaluation of environmental health principles to air, land, water, waste, and occupational health with emphasis on contemporary issues.

Units: 3

PH 208. Health Promotion
Focuses on behavioral change techniques derived from many areas of applied research including behavior modification and social interaction theory. Information emphasizes the health relevant principles in each domain and shows how they can be used to understand or change public health problems.

Units: 3

PH 209. Advanced Concepts in Epidemiology
Prerequisites: PH 92, PH 109 or equivalents; computer statistics program competency. Advanced principles and methods of epidemiology. Includes methods of organizing surveillance data, defining cases, testing hypotheses, analyzing effectiveness of methods, summarizing studies. Advanced statistical methods will be utilized with emphasis on interpretation of results.

Units: 3

PH 210. Introduction to Health Policy
Prerequisite: PH 163 or equivalent. In-depth analysis of public health programs and policies with emphasis on skill development in health policy analysis. Group work will be required.

Units: 3

PH 213. Health Planning and Program Evaluation
In-depth analysis of the principles and practices in comprehensive health planning and program evaluation. Field assignments are required. (Formerly H S 213)

Units: 3

PH 223. Health Promotion and Policy Advocacy
Introduction to the fundamentals of the legislative process. Visits to and from local and state officials will be included. Information about the political process related to health promotion and policy will be the major focus of the course. Fieldwork assignments and travel may be required.

Units: 1

PH 225A. Foundation in Health Promotion
Prerequisite: PH 208. History and philosophy of health education. Psychological, sociological, economic, and political theories relevant to the mission and process of health education with special reference to schools and colleges.

Units: 3

PH 225B. Foundation in Health Promotion Part 2
Prerequisite: PH 208 and PH 225A. Application of theories, practices, and technology to health promotion programs.

Units: 3
PH 250, Social Factors in Public Health
Prerequisites: PH 202, PH 209 or equivalent. Advanced principles and methods of social epidemiology. Includes methods of describing how a range of social factors influence health outcomes, utilization and disparities. Expectation is that students will apply epidemiologic methods to study designs for policy analyses and research.
Units: 3

PH 251, Health Care Economics
Prerequisites: ECON 162 or equivalent. Topics include demand and supply in health services sector; implications of public and private financing alternatives; constraints on manpower training and entry; equity and distribution competition and regulation; issues of productivity measurements and utilization; and political economy of health care.
Units: 3

PH 252, Health Policy Development: Analysis and Process
Prerequisite: PH 210. Individual research, analysis and evaluation of health policy issues utilizing skills in evidence-based policy analysis. Special emphasis on assessing the efficacy and effectiveness of health program proposals, understanding the policy development process and developing strategies to influence policy outcomes.
Units: 3

PH 253, Management of Health Services
Prerequisites: PH 210. Focuses on the application of relevant management theory to diverse health care settings, with special emphasis on refining management skills. Course will be taught as a seminar using case methods to illustrate and practice critical management theories and skills.
Units: 3

PH 280, Seminar in Techniques of Health Research
Research methodology, identification of health research problems, use of library resources, data gathering, and processing; writing a research report. (Formerly H S 280)
Units: 3

PH 285, Internship in Public Health
Planning, implementation, participation, and evaluation in selected areas: safety, school health, community health, physical handicaps, occupational health, and environmental health. Approved for RP grading. CR/NC grading only.
Units: 1-4

PH 290, Independent Study
See Academic Placement. Approved for RP grading. (Formerly H S 290)
Units: 1-3

PH 298, Project
Prerequisite: advancement to candidacy for MPH degree in Health Science. A significant endeavor in health science that may include an educational booklet, audio visual presentation, evaluation of a health agency, or the development of an experimental device or piece of equipment. A narrative component is required which will follow a formal format an shall include a written abstract. Approved for RP grading. (Formerly HS 298)
Units: 2-4

PH 298C, Project Continuation
Pre-requisite: Project PH 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

PH 299, Thesis
Prerequisite: Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading. (Formerly H S 299)
Units: 2-4

PH 299C, Thesis Cont
Pre-requisite: Thesis PH 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

PSYCHOLOGY

PSYCH 10, Introduction to Psychology
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Not open to students with more than 6 units in psychology. Introduction to psychology as an empirical science; biological and social bases of behavior; scientific principles of psychology in perception, learning, motivation, intelligence, and personality. G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall, SpringGE Area: D3

PSYCH 36, Biological Psychology
An introduction to the role of the nervous system in psychological processes, including the basis of nerve conduction, the role of neurotransmitters, and basic neuroanatomy. The course also addresses the neurophysiology underlying sensory processes, motivation, emotion, sleep and
dreaming, language, learning and memory, addiction, and mental disorders.

Units: 3
Course Typically Offered: Fall, Spring

PSYCH 40T. Topics in Research Design and Statistics
Introductory research methods and statistics in psychology. Introduction to scientific procedures and empirical research. Participation in research, data analysis, and APA research report writing. (May include lab hours)

Units: 2-8

PSYCH 42. Introductory Statistics
Basic statistical methods for analysis of data; parametric tests of significance; linear regression and correlation; analysis of variance; introduction to non-parametric techniques.

Units: 4

PSYCH 60T. Psychology as a Behavioral Science
Current topics in psychology that are not covered in other courses. (May include lab hours).

Units: 1-5

PSYCH 60T. Behavior Technician Training
This training program is based on the RBT Task List and is designed to meet the 40-hour training requirement for the RBT credential. Specifically, students will learn foundational knowledge in ASD, applied behavior analysis, measuring and analyzing behavior, determining the function(s) of behavior, discussing and teaching verbal behavior, targeting behavioral deficits and excesses, providing documentation of services and identifying ethical dilemmas. Students will experience a combination of lectures, group discussions and activities and short-take home assignments. This class does not qualify for Area H of the major requirements. (Offered Spring 2020)

Units: 3

PSYCH 61. Personal Adjustment
Not open to students with credit in PSYCH 171. General adjustment behavior with regard to health, social, academic, and emotional problems; application of principles for prevention of health, social, academic, and emotional problems. G.E. Breadth E1.

Units: 3
Course Typically Offered: Fall, Spring

GE Area: E1

PSYCH 63. Introduction to the Psychology Major
Preparation for success as a psychology student: explores the nature of the science and practice of psychology, contrasts a variety of career options in psychology and related fields, and highlights strategies for pursuing those careers.

Units: 2

PSYCH 66. Abnormal Psychology
Study of the origins, symptoms, and treatments of behavioral and personality disturbances from childhood through senescence; application of current DSM. (Formerly PSYCH 166).

Units: 3
Course Typically Offered: Fall, Spring

PSYCH 101. Child Psychology
Not open to students with credit in PSYCH 155. The dynamics of infant and child development and adjustment.

Units: 3
Course Typically Offered: Fall, Spring

PSYCH 102. Adolescent Psychology
Adjustment of youth to self and society.

Units: 3

PSYCH 103. Psychology of Aging
(GERON 103 same as PSYCH 103.) Psychological study of maturity and old age; physiological and sociological considerations.

Units: 3

PSYCH 120T. Topics in Cognition, Perception & Behavioral Neuroscience
Prerequisite: psychology major or minor status or permission of instructor. Empirical evidence and theoretical issues in learning, motivation, cognition, language, perception, sensory, and physiological processes. Section may be limited to animal or human studies; research and reporting. (May include lab hours)

Units: 2-5

PSYCH 121. Learning and Memory
Prerequisites: Psychology major or minor status, or permission of instructor. Combined survey of (1) principles from the
human and animal laboratory with theoretical interpretations and applications; and (2) principles of operation of the human memory system with theoretical interpretations.

Units: 4

**PSYCH 122. Motivation**
Psychology Major or Minor status or permission of the instructor. Initiation and continuation of behavior, acquisition, and modification of motives.

Units: 4

**PSYCH 123. Developmental Psychobiology**
Psychology major or minor status or permission of instructor. Biological and psychological foundations of behavioral development. Topics include issues in developing systems, genetics and evolution of behavioral development, behavioral embryology, comparative development of nervous systems, development of cognitive and effective behaviors, and ecological and multicultural influences on biobehavioral development. (Formerly PSYCH 120T)

Units: 4

**PSYCH 124. Sensation and Perception**
Prerequisites: Psychology Major or Minor status or permission of instructor. Study of sensory and perceptual processes in vision, touch, and hearing. Emphasis is placed on how basic perceptual principles operate in everyday life as well as in lab settings.

Units: 4

**PSYCH 125. Behavioral Neuroscience**
Prerequisites: Psychology Major or Minor status or permission of instructor. (PSYCH 36 is recommended.) An in-depth look at the neuroanatomical, endocrine, molecular, and neurophysiological mechanisms that mediate behavior and the technologies used to study them. Emphasis is placed on the integration and critical analysis of original neuroscience literature. (May include lab hours)

Units: 4

**PSYCH 126. Cognitive Neuroscience**
Biological mechanisms which mediate cognitive processes. Topics include the nervous system substrates for perception memory, language, cerebral lateralization and specialization, attention, and consciousness.

Units: 3

**PSYCH 127. Forensic Cognitive Science**
Prerequisite: Psychology major or minor status or CRIM-FBS majors or permission of instructor. Study of cognitive psychology and cognitive neuroscience in police and forensic psychology. Reviews basic principles and their application in tactical, investigative, and courtroom contexts. (Formerly PSYCH 120T)

Units: 4

Course Typically Offered: Fall, Spring

**PSYCH 128. Cognitive Psychology**
Prerequisites: psychology major or minor status or permission of instructor. An introduction to theory and research in human information processing. Topics include attention, memory, neurocognition, mental representation, imagery, problem solving, reasoning, language, and other higher mental processes.

Units: 4

**PSYCH 132. Psychology of Sexuality**
Prerequisite: upper-division standing. Psychological aspects of human sexual behavior: influence on personality, various behavioral manifestations and pathologies.

Units: 3

**PSYCH 136. Human Learning and Behavior**
Introduction to learning principles as they interact with perception, cognition, and motivation. Relevance of these principles in understanding human adaptation to school, home, and social environments.

Units: 3

**PSYCH 140T. Topics in Psychological Methods**
Prerequisite: PSYCH 10. Research methods and statistics in psychology: introduction to scientific procedures, experimental research, survey research, and qualitative research. Participation in research, data analysis and APA research report writing. (May include lab hours)

Units: 4, Repeatable up to 8 units

**PSYCH 143. Intermediate Computer-based Statistical Analysis**
Prerequisites: Psychology Major or Minor or permission of instructor. Intensive study of analysis of variance with research emphasis. Topics include single and multifactor designs both with and without repeated measures, multiple comparisons, trend tests, analysis of covariance and multivariate analysis of variance. (May include lab hours)

Units: 4

**PSYCH 144. Research Designs and Experimental Methods**
Prerequisite: PSYCH 10 and PSYCH 42. Basic course in experimental psychology: research design and inferential statistics; introduction to scientific procedures and methods in psychology; participation in research, data analysis, and report writing. (May include lab hours)

Units: 5
Course Typically Offered: Fall, Spring

PSYCH 145. Computer and Information Skills in Psychology
A survey of computer and information skills in the behavioral sciences. Applications of information technology include use of word processors, electronic communications, spreadsheets, statistical packages, and other specialized computer programs for psychology. Emphasis will be on developing information competence including locating, gathering, organizing, and reporting computer-based information.

Units: 3

PSYCH 149. Psychological Testing
Prerequisites: Psychology major or minor status or permission of instructor. Theories of psychological testing stressing the logic and limits of measurement. Emphasis on technical and individual tests.

Units: 4

PSYCH 151. Health Psychology
Prerequisite for this course is psychology major status or permission of the instructor. This course provides a general introduction to the field of health psychology -- the application of psychological principles to health and the health care system. Both theoretical and applied perspectives are considered. Formerly PSYCH 150T.

Units: 3

PSYCH 152. Stereotypes, Prejudices and Discrimination
Prerequisite: Psychology major or minor status or permission of instructor. Cognitive and affective bases of stereotyping, prejudice, and discrimination. Includes past and present forms of prejudice, individual differences, the experience of discrimination, and reducing stereotyping, prejudice, and discrimination. (Formerly PSYCH 180T.)

Units: 4

Course Typically Offered: Fall, Spring

PSYCH 153. Research Methods
Prerequisites: CFS 31 or CFS 39 or PSYCH 101. Scientific approach to the study of children and families. Topics include sampling, measurement, study design, and statistics. Emphasizes understanding the process of scientific discovery, clearly distinguishing it from non-science and pseudoscience, and learning to accurately interpret and evaluate research.

Units: 3

Course Typically Offered: Fall, Spring

PSYCH 154. Personality
Prerequisites: Psychology Major or Minor status or permission of instructor. Major contemporary theories of personality; techniques for research in personality. (May include lab hours)

Units: 4

PSYCH 155. Developmental Psychology
Prerequisites: Psychology Major or Minor status or permission of instructor. Empirical and theoretical treatment of human development throughout the life span; genetic, phys-iological, and sociocultural influences upon development; physical, emotional, motivational, intellectual-cognitive, and social facets of development. (May include lab hours)

Units: 4

PSYCH 156. Social Psychology
Prerequisite: Psychology Major or Minor status or permission of instructor. Examination of the interaction between social environments and behavior. Application of social psychological theories and principles to interpersonal relationships, education, work, health, and the media. (Formerly PSYCH 134)

Units: 4

PSYCH 157. Evolutionary Psychology
Prerequisite: Psychology major or minor status or permission of instructor. Theories of natural and sexual selection applied to the understanding of human behavior. Topics include personality, mate selection, social status, war, morality, and religion. (Formerly Psych 150T.)

Units: 4

Course Typically Offered: Fall, Spring

PSYCH 160T. Topics in Clinical Processes
Prerequisite: Psychology Major or Minor status or permission of instructor. Examination of individual behavior and small-group processes; include such topics as clinical psychopathology, sensitivity training, and intragroup dynamics, consciousness, dreams, and imagination.

Units: 2-5

PSYCH 160T. Movies and Psychological Disorders
In this web-based course, students will review websites, research articles, instructor mini-lectures, and films to obtain knowledge about important issues related to psychological disorders so they will be able to recognize myths and stereotypes about the and their treatment. Outcomes will be evaluated via short quizzes, discussion board participation, and a multi-media file review. (Offered Fall 2019 and Spring 2020)

Units: 4

PSYCH 162. Introduction to Clinical Psychology
Overview of clinical psychology, including history, ethics, applied roles, conceptual and technical approaches to assessment and intervention, applying to graduate school, and anticipated future developments.

Units: 4
PSYCH 163. Multicultural Psychology
Prerequisites: Psychology major or minor status or permission of instructor. This course reviews the field of Multicultural Psychology and emphasizes the development of critical thinking, cultural sensitivity, and cultural self-awareness. Major topics include: world views, immigration and acculturation, stereotyping, prejudice, racism, privilege, cultural identity development, health disparities, and multicultural competence. Formerly PSYCH 160T.
Units: 4

PSYCH 169. Psychological Aspects of Physical Disability
Psychological theory and research pertaining to physical disability and disabled persons. Attitudes regarding disability and the impact of disability on individual behavior. Primarily deals with blindness, deafness, orthopedic handicap, and epilepsy, and secondarily with cardiovascular disease, cancer, and diabetes.
Units: 3

PSYCH 170T. Topics in Psychological Applications
Applications of psychology; human factors; clinical psychology, learning applications, clinical quantitative, learning, creativity, computer, and other applied topics. (May include lab hours)
Units: 2-5

PSYCH 170T. Selection Sciences
Four major selection systems will be covered in this course: culture, learned behavior and cognition, immune systems, and evolution. Selection occurs when the outcomes of the interactions result in the replication of particular units and not others. Understanding the basics of selection reveals the interactions among psychology, biology and cultural anthropology. Commonalities across levels of selection have been discussed for about 70 years in the life sciences. (Offered Spring 2020)
Units: 3

PSYCH 171S. Community Mental Health
Prerequisite: Psychology major or minor - Psych 10, 42, and 144 complete with a grade of C or higher; Non-Psychology Major permission of instructor. Treatment approaches and systems of support for substance use problems, mental health conditions, and trauma. Data based decision making to develop policies and evaluate programs. Students work in a community-based mental health organization. S sections include a service-learning requirement. (Formerly Psych 170T)
Units: 4

Course Typically Offered: Fall, Spring

PSYCH 172. Applied Behavior Analysis
Prerequisite: psychology major or minor status or permission of instructor. Introduction to the philosophy and research of applied behavior analysis. Includes the methods of research, basic principles, and applied techniques used in the field. Presents ethical and legal standards under which behavior analysts work. (Formerly Psych 170T)
Units: 4

PSYCH 173. Environmental Psychology
The scientific study of the effects of human behavior on the environment and the psychological effects of the environment on human behavior. Topics include issues related to overpopulation, pollution, urbanization, noise, and environmental disaster, as well as environmental policies and grass-roots movements worldwide.
Units: 3-4

PSYCH 174. Introduction to Counseling
(COUN 174 same as PSYCH 174.) An overview of basic counseling models, including psychoanalytic, behavioral, cognitive, and humanistic approaches. Includes a personal counseling experience.
Units: 3

PSYCH 175. Family Counseling
Theory and application of major counseling models. Family problems, relationships and systems. Application of child development principles, relevant communication theory and current research to therapy with couples, families, children, and groups.
Units: 3
Course Typically Offered: Fall, Spring

PSYCH 176. Industrial Psychology
Occupational assessment, training procedures, production efficiency, morale determinants, human engineering, decision processes, organization theory.
Units: 3

PSYCH 177. Behavioral and Cognitive Change Techniques
Prerequisites: Psychology major or minor status or permission of instructor. Introduction to learning principles and their applications to behavioral and cognitive change. Methods and techniques used for changing self, children, adolescents, and adults.
Units: 4

PSYCH 178S. Psychology of Special Populations
Prerequisites: Psychology major or minor status, or permission of instructor.
In depth exploration of the psychology of a specific group of people through a combination of classroom didactic learning and applied hands on experience providing service to a targeted population.

Units: 4
Course Typically Offered: Fall

**PSYCH 179I. Supervised Field Experience**

Prerequisites: Psychology major or minor status or permission of instructor. Supervised field experience in community settings. Placements may include schools, hospitals, institutions for the aged, community service agencies, and legal settings, depending on student interests. Regular class meetings.

Units: 4

**PSYCH 180T. Seminar in Psychology**

Prerequisites: 9 units in psychology, permission of instructor. Undergraduate seminar in specialized areas, new developments and synthesis of psychological processes, thought, and theory.

Units: 1-5

**PSYCH 182. History and Systems**

Prerequisite: Psychology Major or Minor status; senior standing or permission of instructor; 12 upper-division units in the major. Historical, philosophical, and scientific background in psychology; review and integration of theoretical issues and current systems in the field. Lecture and discussion.

Units: 4
Course Typically Offered: Fall, Spring

**PSYCH 183A. Honors Seminar**

Prerequisite: application and acceptance into the department's honors program. Advanced experience in psychology for selected majors that includes critical and creative thinking about topics in psychology, individualized research training, and exploration

Units: 1-3
Course Typically Offered: Fall

**PSYCH 183B. Honors Seminar**

Prerequisite: application and acceptance into the department's honors program. Advanced experience in psychology for selected majors that includes critical and creative thinking about topics in psychology, individualized research training, and exploration of options in psychology. (Formerly PSYCH 180T)

Units: 1-3
Course Typically Offered: Spring

**PSYCH 184A. Community Intervention & Behavior Support**

Prerequisites: One course in behavior analysis with a grade of B or higher. Meets content requirements for certification in applied behavior analysis at the associate level. Includes using and monitoring reinforcement systems; ethics and informed consent; training direct care workers; maintaining behavior change in natural settings; establishing support from agencies and professionals. Students work directly with clients. (Formerly PSYCH 170T)

Units: 3

**PSYCH 184B. Community Intervention & Behavior Support**

Prerequisites: one course in behavior analysis with a grade of B or higher. Meets content requirements for certification in applied behavior analysis at the associate level. Includes using and monitoring reinforcement systems; ethics and informed consent; training direct care workers; maintaining behavior change in natural settings; establishing support from agencies and professionals. Students work directly with clients. (Formerly PSYCH 170T)

Units: 3

**PSYCH 190. Independent Study**

See Academic Placement. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

**PSYCH 199. Senior Thesis**

Concentrated empirical or theoretical study of specific topic in psychology; emphasis on independent and creative activity. Copy of thesis required for Psychology Department file.

Units: 2-4

**PSYCH 200T. Seminar in Developmental Psychology**

May be repeated with different topics. Prerequisite: permission of instructor. Seminars in development and genetic psychology, special topics for particular age ranges and problem areas. (May include lab hours)

Units: 2-4

**PSYCH 200T. Immigrant Children and Families**

The US immigrant population is demonstrating steady growth and children of immigrants are the fastest growing group with over half having at least one foreign-born parent. This course will take a theoretical and empirical developmental psychological examination of various issues that are faced by immigrant children and families such as: the immigrant paradox; behavior and health outcomes across generations; the cultural adaptation process at both the individual and family level; and family and community factors affecting academic outcomes in this particular sector of the population. (Offered Spring 2020)

Units: 4

**PSYCH 201. First Semester Graduate Experience**

Introduction to graduate education for first semester MA students. Covers professional ethics, the culture of empiricism
in the psychological sciences, university resources, career paths and preparing for doctoral study in psychology.

Units: 1

**PSYCH 202. Second Semester Graduate Experience**
Development of a focused literature review that motivates a particular hypothesis. Computing and organizational skills related to development of proposals.

Units: 1

**PSYCH 204. Developmental Psychopathology**
This course is designed to provide students with an introduction to childhood psychopathology and clinical diagnoses. Students will learn to recognize and conceptualize developmental psychopathology. The course will cover research regarding effective treatment.

Units: 3, Repeatable up to 15 units

**PSYCH 205. Seminar in Child Development**
Prerequisite: a course in child or developmental psychology or permission of instructor. Advanced survey of current and classic research in child development. Examines issues such as nature/nurture, plasticity, direction-of-effect, continuity/discontinuity and content relevant to theoretical and applied areas of social and cognitive development.

Units: 4

**PSYCH 220T. Seminar in Learning and Related Problems**
Prerequisite: undergraduate core. Advanced current developments in learning, perception, language, memory, and cognitive psychology. (May include lab hours)

Units: 2-4

**PSYCH 220T. Applied Behavior Analysis for Organizations and Systems**
Applied Behavior Analysis extends to the level of analyzing and behavior of individuals in groups. This is highly relevant for business and organizational settings and overlaps with fields such as I/O psychology. This course will cover current literature and practice in Organizational Behavior Management as well as system analysis. Students will learn several models for consultation in businesses as well as special topics relevant to group level behavior analysis. (Offered Spring 2020)

Units: 4

**PSYCH 221. Advanced Learning and Behavior**
Prerequisites: core Psychology courses (PSYCH 10 PSYCH 42, and PSYCH 144). Recommended: PSYCH 136 or PSYCH 172. This course will examine a broad range of topics as they relate to the underlying principles of behavior. Topics will include mechanisms of learning, associative and non-associate processes, operant and respondent conditioning, schedules of reinforcement, and verbal processes.

Units: 4

**PSYCH 223. Verbal Behavior**
Verbal Behavior is a special topics seminar that will examine behavior analytic approaches to language, including Skinner's analysis of Verbal Behavior and Relational Frame Theory. We will discuss recent research, application, interactions, and controversies surrounding main approaches.

Units: 4

**PSYCH 225T. Seminar in Psychobiological Bases of Behavior**
Prerequisite: permission of instructor. Recent advances in psychophysiology, physiological psychology, psychopharmacology, behavior genetics, sensory processes and related topics. (May include lab hours)

Units: 2-4

**PSYCH 231. Ethics and Philosophy of Behaviorism**
This course will familiarize students with the ethical responsibilities for basic and applied behavior analysts required by leading organizations. The philosophical underpinnings of behavior analysis will be covered along with the larger concepts of researching and practicing as a behavior analyst, professional, and member of society.

Units: 3

**PSYCH 240T. Seminar in Quantitative Methods for Behavioral Research**
Prerequisite: PSYCH 143. Methods for analysis of multivariate data; factor analysis; multiple regression; advanced analysis of variance procedures. Computer applications and use of computers for analysis of data. (May include lab hours)

Units: 2-4

**PSYCH 240T. RDA Internship II**
This course provides students with support for professional experiences that develop research data analysis or similar skills. Students will work or volunteer a minimum of five hours per week at an internship site. (Offered Spring 2020)

Units: 2

**PSYCH 240T. RDA Computer Skills II**
Provides advanced training with large data sets and will continue to develop methods and skill associated with research analysis and database management. (Offered Spring 2020)

Units: 2

**PSYCH 244A. Measurement, Research Methods & Statistics**
Prerequisites: PSYCH 143 or permission of instructor. Examination of measurement, advanced research design and statistical techniques in behavioral research. Part of a two-semester sequence of PSYCH 244A and PSYCH 244B. (May include lab hours)
PSYCH 244B. Statistics and Analysis Tools Competency
Prerequisites: PSYCH 143 or permission of instructor. Examination of measurement, advanced research design and statistical techniques in behavioral research. Part of a two-semester sequence of PSYCH 244A and PSYCH 244B. (May include lab hours)
Units: 1

PSYCH 245. Research Methods in Behavior Analysis
Prerequisite: PSYCH 288. Single subject research designs and behavioral measurement techniques, assessment of graphed data; social validity.
Units: 4

PSYCH 250T. Seminar in Personality and Related Areas
Prerequisite: undergraduate core in psychology. In-depth examination of the recent developments in personality and clinical psychology. (May include lab hours)
Units: 2-4

PSYCH 250T. Role and Function of Research Data Analysis
This course will explore a variety of professional roles that require research and data analytic skills. During class meetings, students will meet professionals who are responsible for research and data analysis for use in data based decision making. (Offered Spring 2020)
Units: 2

PSYCH 255T. Seminar in Social Psychology and Related Areas
Prerequisite: permission of instructor. Theories and research about individual functioning in society; also includes such topics as environment psychology and the psychology of women. (May include lab hours)
Units: 2-4

PSYCH 267. Internship in School Psychology
Prerequisites: PSYCH 284, PSYCH 285, PSYCH 288, and permission of instructor. University and school-based supervised internship in school psychology.
Units: 3-6

PSYCH 268. Practicum in Applied Behavior Analysis
Prerequisite: PSYCH 288 and permission of instructor. University and site-based supervision of practica in applied behavior analysis. CR/NC grading only.
Units: 1, Repeatable up to 4 units

PSYCH 270T. Seminar in Applied Behavioral Science
Prerequisite: permission of instructor. Topics in applied behavioral research; conflict management, group dynamics, organization development, sensitivity training, and related processes. For students in the fields of business, communications, education, psychology, and the social sciences. (May include lab hours) CR/NC grading only.
Units: 1-6

PSYCH 271. Community Intervention & Behavior Support
This course is designed to give students hands-on experience in the application of principles used by behavior analysts to train direct care workers in clinical, school, and home settings.
Units: 3

PSYCH 272. Seminar in Lab Teaching
Enrollment restricted to and required of graduate students teaching discussion sections in psychology laboratories. Class discussion of teaching techniques and procedures used to demonstrate principles in introductory psychology. Course may be repeated for maximum of 4 units credit. CR/NC grading only.
Units: 1, Repeatable up to 4 units

PSYCH 274S. Multicultural Psychology
Examine diverse cultural aspects related to psychology and education. Students explore multiple aspects of culture and investigate how they are manifested in our society and in education settings through reading, writing, discussion and service to the local communities.
Units: 4

PSYCH 277. Role and Function of the School Psychologist
Prerequisites: graduate standing and admittance to School Psychology Program. State and federal education codes and court decisions related to the practice of school psychology; types of community resources and referral services. Includes supervised practicum experience in schools.
Units: 4

PSYCH 278. Intervention and Prevention in School Psychology
Prerequisite: PSYCH 277, PSYCH 279, PSYCH 282, and PSYCH 288. Roles and responsibilities of the school psychologist including prevention, individual and group techniques for early intervention, and strategies for modification of individual programs and educational environments. Includes supervised practicum experience.
Units: 4

PSYCH 279. Consultation and Supervision
Prerequisite: PSYCH 277 and PSYCH 288. Types of consultation services offered by school psychologists and variables which influence consultation effectiveness including organizational and systems issues. Emphasizes development of consultation and supervisory skills. Includes supervised practicum experience.
PSYCH 280. Counseling Techniques for School Psychologist
This course provides a foundation for basic counseling skills with children and youth in school settings. Primary foci include relevant child and adolescent development, building therapeutic relationships, learning and applying basic counseling models and skills with children and youth.
Units: 3

PSYCH 281. Group Counseling in Schools
This course will outline the basic issues, key concepts of group process and applications to working with children and adolescents. Students will explore professional and ethical issues involved in group counseling with minors. The course will cover typical application of group counseling in school such as social skills, study skills, anger management, and self-esteem counseling.
Units: 2, Repeatable up to 12 units
Course Typically Offered: Spring

PSYCH 282. Cognitive and Behavior Therapy
Prerequisites: a course in learning or behavior modification and permission of instructor. Historical and current trends, research issues, and designs. Application of the behavior approach in a variety of settings. Includes supervised practicum experience. (Class fee, $45)
Units: 4

PSYCH 283T. Topics in Clinical Intervention
Prerequisite: permission of instructor. Advanced study in specialized areas in psychotherapy. May include topics such as clinical hypnosis, health psychology, family therapy, group therapy, etc. Practicum training usually included. Topics may not be repeated. CR/NC grading only.
Units: 1-4

PSYCH 284. Assessment of Intellectual Abilities
Prerequisites: a course in psychological testing and permission of instructor. Review of theories of intelligence. Administration, scoring, and interpretation of individual and group measures of intelligence. Supervised practicum includes case studies. (Class fee, $130)
Units: 4

PSYCH 285. Assessment of Learning and Developmental Problems
Prerequisite: PSYCH 284. Administration, scoring, and interpreting measures of learning disorders, physical-motor development, psychomotor abilities, social maturity, tests, school achievement, and vocational selection. Supervised practicum emphasizing prescriptive and rehabilitative recommendations in case studies. (Course fee, $30)
Units: 4

PSYCH 286. Instructional Consultation and Intervention
This course will develop student's skills at using assessment data to target areas of need for students. Upon identifying student needs, skills in consulting with teachers about how to develop, implement, and evaluate instructional interventions will be discussed (e.g. materials, strategies, etc)
Units: 4

PSYCH 287. Practicum in School Psychology
Prerequisites: Enrollment in the Ed. S. in Psychology program. University and school based supervision of practice in school psychology. CR/NC grading only.
Units: 1-2

PSYCH 288. Advanced Applied Behavior Analysis
Prerequisite: PSYCH 177. Applied use of classical and operant conditioning and social learning theory as behavior change techniques. Emphasis will be on functional assessment of behavior, including structured observations and behavior rating instruments. Students will also learn to develop and evaluate single subject research designs. Includes supervised practicum experience.
Units: 4

PSYCH 289. Functional Assessment and Intervention
Prerequisite: PSYCH 288. Advanced strategies of functional behavioral assessment and intervention for adults and children across school, home, and community settings; ethical and procedural considerations of assessment and intervention; issues of system support and maintenance.
Units: 4

PSYCH 290. Independent Study
See Academic Placement. Approved for RP grading.
Units: 1-3

PSYCH 298. Project
Prerequisite: See Criteria for Thesis and Project. An individual scholarly investigation of an advanced topic in education or psychology as the culminating experience for the Ed.S. degree. Approved for RP grading.
Units: 3-6

PSYCH 299. Thesis
Prerequisite: Preparation, completion, and submission of an acceptable thesis for the master's degree in compliance with Psychology Department regulations. Approved for RP grading.
Units: 3-6

PSYCH 299C. Thesis Continuation
Pre-requisite: Thesis PSYCH 299. For continuous enrollment while completing the thesis. May enroll twice with department
RECREATION ADMINISTRATION

RA 55. Foundations and Careers in Recreation, Parks, and Tourism
Philosophical, theoretical, and historical basis for recreation service in contemporary American society; exploration of the various facets of recreation parks and tourism including public, nonprofit, therapeutic, and commercial recreation.
Units: 3
Course Typically Offered: Fall, Spring

RA 60. Technologies in Recreation, Parks and Tourism
The course emphasizes the basics of computer and social media technologies. Students will learn the basics of entering data and building organized workbooks through Microsoft Excel, budgeting and evaluation of RPT programs. An examination of proprietary program registration and league scheduling systems will be conducted.
Units: 1
Course Typically Offered: Fall, Spring

RA 70. Residential Life and Student Involvement Leadership
Exploration into principles and theories of leadership within residential life and student involvement. Focus is on personal decision-making, diversity, human and group development. Outcomes will be achieved through discussion, self-assessment, experiential exercises, and observation of leadership practice. (Formerly RA 192T)
Units: 2
Course Typically Offered: Spring

RA 73S. Leadership in Recreation, Parks, and Tourism
Course addresses leadership as a field of study and personal development with a focus on theory, technique, and direct service application in a recreation setting. A service learning component will be integrated to foster reflection and growth.
Units: 3
Course Typically Offered: Fall, Spring

RA 77S. Recreation, Parks, and Tourism Programming
Course covers the recreation program process including an introduction to activity plans, program design, delivery, and evaluation. Student will design and implement two recreation programs through service-learning projects to foster skill application and practice
Units: 3

RA 80. Lifelong Learning in the Natural Environment
Units: 3
Course Typically Offered: Fall, Spring

GE Area: E1

RA 101. Leisure and Human Behavior
Prerequisite: RA 55. Exploration of leisure as related to the individual and society. Forces and factors affecting its role on human behavior are examined within the context of current social issues. (Students may incur minimal expenses related to field trips.)
Units: 3
Course Typically Offered: Fall

RA 106. Challenge Course Facilitation
Facility-based adventure programming skills (e.g., ropes courses and climbing walls) taught on the E.D.G.E. Challenge Course. Students will learn specific sequencing, processing, debriefing, and leadership techniques for adventure education. Covers competencies established by the Association for Challenge Course Technology. (CSU liability insurance fee, $8)
Units: 3
Course Typically Offered: Spring

RA 107. Correctional Recreation Programming
This course reviews the development of recreation in the prison system and introduces the coordination of recreation programs in the prison. Students will gain knowledge and application to develop correctional recreation programs for inmate participation.
Units: 3
Course Typically Offered: Fall

RA 109. Correctional Recreation Administration
Correctional Recreation Supervisors manage, lead, train, counsel, and discipline. Supervisors develop and manage the recreation program in a correctional environment. Students will gain knowledge and skills to complete the duties and responsibilities for effective management.
Units: 3
Course Typically Offered: Fall

RA 113. Serving At-Risk Youths
Examination of the forces and factors that place youth at risk. Review of service models and leadership styles that affect
outcomes for at-risk youths with emphasis on agencies that have developed successful program approaches. (Formerly RLS 192T)

Units: 3
Course Typically Offered: Spring

RA 115. Community Placements in Leisure Settings
Prerequisite: Concurrent enrollment with RA 113 or RA 117 or RA 146 or RA 150. Service oriented course providing opportunities to observe, interact, and learn from community placement in leisure services. Hour requirements are supported through writing and discussion on issues and solutions. CR/NC grading only. (Formerly RLS 192T) (CSU liability insurance fee, $8)

Units: 1-3
Course Typically Offered: Fall, Spring

RA 117. Special Event Planning
Special techniques and requirements for planning and conducting large community functions such as street fairs, community festivals, major fund-raisers, corporate events, and joint sponsorship. Emphasis on community laws and regulations, activity selection and planning, advertising, and funding. Field trips and/or other off-campus experiences will be required. (Students may incur minimal expenses related to field trips.)

Units: 3
Course Typically Offered: Fall, Spring

RA 119. Conference, Convention, and Meeting Planning
As examination of the conference, convention, and meeting industry, inclusive of the design, budgeting, and programming principles utilized within the industry. Provide an essential understanding of the components involved in the operation of successful meetings, conventions, and conferences.

Units: 3
Course Typically Offered: Fall

RA 121. Community and Non-Profit Recreation Services
Prerequisite: RA 55 or concurrent (for RA majors only). Philosophical foundations and future outlook of non-profit and municipal recreation programs. Review of service providers including organization, service provision, legal base, funding profiles, and current trends analysis. (Field trips may be required.) (Formerly RA 121)

Units: 3
Course Typically Offered: Fall

RA 125. Diversity and Inclusive Practices in Recreation Therapy and Recreation
Prerequisite: RA 55 for RA majors. Introduction to diverse populations including terminology, etiology, legislation, facilities, trends, barriers, and relationship to leisure. Understanding alternative views of exceptionality and appreciating similarities and differences. Awareness of adaptations/strategies to maximize participation opportunities.

Units: 3
Course Typically Offered: Fall, Spring

RA 128. Legal and Financial Aspects of Recreation, Parks, and Tourism
Prerequisite: RA 55, RA 60 and RA 77S. Legal and financial aspects of recreation, parks, and tourism; funding sources, budget development and administration, legal issues, and risk management and their role in recreation administration.

Units: 4
Course Typically Offered: Fall

RA 130. International Tourism: Multicultural Issues and Impacts
Prerequisites: GE Foundation and Breadth Area D. Prepares students to live in an international multicultural world, as both a responsible tourist or gracious host who appreciates cultural differences, respects the environment, and understand the impacts of international tourism. Multicultural/International M/I.

Units: 3
Course Typically Offered: Fall, Spring

RA 131. Foundations of Special Events and Tourism
Prerequisite: RA 55. Historical and philosophical foundations of tourism, chamber of commerce, special events, downtown and main street organizations. Review of selected tourism and special event organizations including organizational structure, funding, legal base, and current trends.

Units: 3
Course Typically Offered: Fall

RA 133. Recreation and Parks Facilities Planning and Operations
Prerequisite: RA 77S. Emphasis will be on the planning, management, and operations of recreation and parks facilities. Facility layout for use in activity presentation, safety procedures, staffing, risk management, and maintenance. (Field trips may be required.) (Formerly RLS 133)

Units: 3
Course Typically Offered: Spring

RA 135. Recreation, Parks, and Tourism Marketing
Prerequisite: RA 77S for RA majors only. Analysis and development of marketing and promotion strategies for recreation, parks, and tourism programs and services, and an in-depth analysis of recreation feasibility plans.

Units: 3
Course Typically Offered: Fall

RA 139. Research and Evaluation in Recreation, Parks, and Tourism
Prerequisites or Co-requisites: RA 128 and completion of Upper Division Writing Requirement. Overview of research and evaluation methods as applied to recreation, parks and tourism services.
Units: 3

Course Typically Offered: Spring

RA 142. Foundations of Recreation Therapy
Prerequisites: RA 55 and RA 125. Historical review and future outlook of recreation therapy; identification of interventions used for specific population groups. Review etiology characteristics, terminology and support systems. Facility design, use, and adaptation. Practical experiences required.
Units: 3

RA 144A. Assessment and Documentation in Recreation Therapy
Prerequisite: RA 142. Application of recreation therapy methods including assessment, program design, documentation, and evaluation.
Units: 3

RA 144B. Facilitation Techniques in Recreation Therapy
Prerequisites: RA 142 passed with C grade; RA 144A (may be taken concurrently). Practical experiences in applying recreation therapy intervention methods.
Units: 3

RA 145. Environmental Interpretation
Philosophies, concepts, practical techniques for environmental interpretation. Introduces students, through lectures, class activities, and projects, to individuals and agencies involved in EI. Roles of environmental education and persuasive communication in promoting environmental attitudes and behaviors are emphasized. (Formerly RA 192T)
Units: 3

Course Typically Offered: Fall

RA 146. Adventure Based Programming
Prerequisite: RA 55 and RA 80 for RA majors. Explore adventure based programming skills through outdoor pursuits and experiential activities on the E.D.G.E. Challenge Course. (2 lecture, 2 lab hours) (Students will incur expenses related to required field trips)
Units: 3

Course Typically Offered: Fall

RA 148. Process and Principles in Recreation Therapy
Prerequisites: RA 144A, RA 144B passed with C grade; or may be taken concurrently.
Designing and evaluating recreation therapy programs for healthcare and community settings. Practical program experience required.
Units: 3

RA 149. Trends and Issues in Recreation Therapy
Prerequisites: RA 148 or concurrent. In-depth examination of contemporary professional issues and their relationship to current and future development of recreation therapy services.
Units: 3

RA 150. Sports and Entertainment Facility Management
Prerequisite: RA 55 is recommended for RA majors. Examination of the ownership & governance, function, programming, and management of sports and entertainment facilities including arenas, performing arts centers, stadiums, convention and conference centers. Economic impacts, professional associations, and career development in this industry are also covered.
Units: 3

Course Typically Offered: Fall

RA 152. Sports and Entertainment Facility Booking, Promotion and Box Office Operations
Prerequisites: RA 150; RA 135 or MKTG 100S, plus concurrent enrollment in RA 154. Booking, promotion and box office operations techniques for sports and entertainment facilities and their events.
Units: 3

Course Typically Offered: Spring

RA 154. Sports and Entertainment Facility Operations
Prerequisites: RA 150; RA 135 or MKTG 100S, plus concurrent enrollment in RA 152. Operations of sport and entertainment facilities including: set-up configurations, event staffing, event production, security & crowd control, merchandise, food & beverage, ADA, risk management, housekeeping and maintenance. Includes field trips (3 lecture, 2 lab hours)
Units: 4

Course Typically Offered: Spring

RA 179. Supervision and Administration in Recreation, Parks, and Tourism
Prerequisite: RA 73S. Preparation for a supervisory role in recreation, parks, and tourism agencies. Recruitment, motivation, performance evaluation, training and development, and other supervisory and management practices.
Units: 4
Units: 3
Course Typically Offered: Spring

RA 180. Professional Placement in Recreation, Parks, and Tourism
Prerequisite: may only be taken the semester prior to internship. Professionalism and internship search procedures in recreation, parks, and tourism.

Units: 1
Course Typically Offered: Fall, Spring

RA 184I. Internship in Recreation, Parks, and Tourism
Prerequisites: completion of all major, General Education, and university graduation requirements. Honors internship requires placement approval in RA 180. Directed supervisory experience with a nonprofit, public, or commercial recreation agency. Individual development in administration, supervision, program planning, and public relations. Reports and conferences required. (It is recommended before registering for internship that students have the equivalent of 1,000 hours of recreation related experience, either paid or volunteer, in a recreation service agency.) (CSU liability insurance fee, $8)

Units: 12
Course Typically Offered: Fall, Spring

RA 187I. Internship in Recreation Therapy
Prerequisites: completion of all major, General Education, and university graduation requirements. Honors internship requires placement approval in RA 180. Supervised, directed full-time experience in the field of recreation therapy; reports and conferences required. (It is recommended before internship registration that students have the equivalent of 1,000 hours of recreation related experience, either paid or volunteer, in the field of recreation service).

Units: 12
Course Typically Offered: Fall, Spring

RA 190. Independent Study
See Academic Placement -- [-LINK-]. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

RA 192T. Topics in Recreation, Parks, and Tourism
Prerequisite: permission of instructor. Investigation of selected topics related to: administration, supervision and leadership in public recreation; therapeutic recreation; camping; and workshops related to skills in leisure oriented activities.

Units: 1-3

RA 192T. Outdoor Recreation Management
Concepts and methods of outdoor recreation planning and management explored, with emphasis on the public sector. Current issues to recreation provision identified and debated. (Offered Spring 2020)

Units: 3

RA 192T. Introduction to Snowboarding
This course provides the student with the skills to safely learn and enjoy one of the nation's fastest growing sports, snowboarding. In a beautiful natural setting, students will learn techniques, equipment use, and safety procedures. Students will be placed in groups depending upon skill level (first-timers to advanced) for instruction based upon their ability level and interests. Environmental issues and ethics concerning natural resources use and management are also an important part of the experience. (Offered Spring 2020)

Units: 1

REC 74. Games for All Ages
Planning, design, and leadership techniques for a variety of games appropriate for diverse populations and age groups. CR/NC grading only.

Units: 1

REC 75. Adventure Ropes Course Experience
An experiential journey of self-awareness, esteem building, and group processing through initiative games and high ropes elements. CR/NC grading only. (Course fee, $45)

Units: 1

Course Typically Offered: Fall, Spring

REC 82. Wilderness Survival Skills
Backcountry skills for preventing or responding to emergency situations in the wilderness, such as fire and shelter building, signaling, and land navigation. Explores interpersonal and intrapersonal reactions to crisis situations. (Formerly RLS 192T) CR/NC grading only.

Units: 1

REC 83. Whitewater Rafting
Learn fundamental skills for traveling down America's streams and rivers. Topics include safety, levels and conditions, rescues, and river craft. The course will culminate in a whitewater rafting trip on the upper Kings river. (Course fee, $75) CR/NC grading only.

Units: 1

REC 84. Orienteering
Fundamental skills and knowledge for traveling outdoors by map and compass, and by knowledge of natural features. (Formerly RLS 192T) CR/NC grading only.
Units: 1

REC 86. Backpacking in the Sierra Mountains
Fundamental skills and knowledge for backpacking, carcamping, and hiking in the Sierra Mountains or similar settings. Includes skills for camping, hiking, basic navigation, trip planning, and outdoor cooking, plus safety and environmental issues. (Course fee, $40) CR/NC grading only.
Units: 1
Course Typically Offered: Spring

REC 87. A Yosemite Experience
A multidimensional Yosemite National Park experience including history, park planning, recreation uses, and natural resources and tourism management issues. Includes an overnight field trip with recreation activities (Course fee, $47) CR/NC grading only.
Units: 1
Course Typically Offered: Spring

REC 88. Rock Climbing
Basic skills and knowledge of rock climbing including history, trends, equipment, climbing technique, top roping, knot tying, rappelling, training, safety, and environmental issues. (Formerly RLS 192T) CR/NC grading only.
Units: 1
Course Typically Offered: Fall

REC 92. Discount Travel
Learn about the travel industry and how to get discounts for airfare, hotels, rental cars, tours, and other travel services for both domestic and international travel.
Units: 1

REC 178. Supervision in Recreation and Parks
Units: 3

REC 179. Problems in Recreation Parks
Units: 3

REC 181. Relations in Recreation and Park Services
Community and public relations in recreational agency work, and in recreation and park work.
Units: 3

RLS 73L. Recreation Leadership & Programming Laboratory
Concurrent enrollment with RLS 73. Practical leadership experience in classroom and supervised recreation settings. (CSU liability insurance fee, $8)
Units: 1

RLS 108. Advanced Challenge Course Facilitation
Focuses on advanced debriefing and processing techniques including frontloading and designing metaphors used in facility-based adventure programming such as ropes courses and portable initiative courses. Prior ropes course training or RLS 106 recommended. (Formerly RLS 192T)
Units: 1

SOCIAL SCIENCES INTERDISCIP

SSCI 16. Introduction to Global Studies
Introduction to a range of topics to enhance literacy for global awareness. Includes an interdisciplinary approach, concentration on human diversity, and attention to historic, political, legal, economic, sociological, anthropological, and geographic issues. Fulfills lower division requirement for Global Awareness Certificates.
Units: 3

SSCI 101H. Social Science Honors I
Prerequisite: 75 units completed, 3.5 major & cumulative GPA, completion of (or concurrent enrollment) in pre-approved research methods course with minimum B grade; admission to Honors Program, permission of instructor. This course guides students in designing a research proposal for a Bachelor's thesis to be completed in the spring semester. Students will be introduced to academic research in the social sciences through guest research lectures by various College faculty. (Formerly SSCI 150T)
Units: 3
Course Typically Offered: Fall

SSCI 102H. Social Science Honors II
Prerequisite: SSCI 101H completed with an A, 3.5 major & cum GPA, completion of approved research methods course with minimum B grade, permission of instructor. In this course, students write an Honors thesis based on an approved research proposal and present it in a public symposium. Time is allotted for independent research and writing, periodic classroom meetings, and one-on-one consultations with course instructor and mentor. (Formerly SSCI 150T)
Units: 3
Course Typically Offered: Spring

SSCI 110. California Studies
Prerequisites: G.E. Foundation and Breadth Area D. Origins and development of California as a unique cultural area; relationships over time among geography and natural resources, human populations and cultures, political institutions, economic pursuits, and land use practices; distinctive architecture, arts, and literature; and socio-economic patterns, processes, and trends. G.E. Integration ID.
SOCIAL WORK EDUCATION

SWRK 20. Introduction to Social Work
Social, economic, political, historical, and philosophic components in development of social welfare and social work in western society.

Units: 3
Course Typically Offered: Fall, Spring

SWRK 122T. Topics in Social Work
Topics in fields of social work practice, basic social work theories, and social work methods.

Units: 1-3

SWRK 123. Social Welfare Policies and Programs
Prerequisites/Corequisites: SWRK 20 passed with a C grade; SWRK 123 and 135 must be taken concurrently. Concurrent enrollment in SWRK 160 also required; 2.5 minimum cumulative GPA and completion of lower division GE. Basic policies and major programs in contemporary social welfare; consumption, income supports, job provision, housing, health, civil rights, consumer advocacy, population control, environmental standards; principles of social security, administration of social services, roles of government and citizen participation.

Units: 3
Course Typically Offered: Fall

SWRK 124. Social Welfare Policy Advocacy
A two-day course offered in March of the Spring semester at the state capital in Sacramento, California, providing beginning skill-building in advocacy and political action on current social welfare policy issues.

Units: 1

SWRK 125. Social Services for the Aging
(SWRK 125 same as GERON 125.) Students will be acquainted with the common bio-psycho social needs of the aging in the United States and the social services available to meet those needs. Within the context of social work values and problem-solving methods, attention will be given to issues of ethnicity, gender, and gaps in services.

Units: 3
Course Typically Offered: Spring

SWRK 126. Child Welfare
History, development, and provision of child welfare services in the United States. Meets State of California pre-licensure requirements for child abuse assessment and reporting content.

Units: 3
Course Typically Offered: Fall, Spring

SWRK 127. Treatment of Chemical Dependency
Intervention and treatment of the chemically dependent and of family members. Meets State of California requirements for Licensed Master Social Work through the California Board of Behavioral Sciences.

Units: 3

SWRK 128. Social Welfare Policy Advocacy
A two-day course offered in March of the Spring semester at the state capital in Sacramento, California, providing beginning skill-building in advocacy and political action on current social welfare policy issues.

Units: 1

SWRK 129. Social Services for the Aging
(SWRK 125 same as GERON 125.) Students will be acquainted with the common bio-psycho social needs of the aging in the United States and the social services available to meet those needs. Within the context of social work values and problem-solving methods, attention will be given to issues of ethnicity, gender, and gaps in services.

Units: 3
Course Typically Offered: Spring

SWRK 135. Human Behavior and the Social Environment
Prerequisites/Corequisites: SWRK 20 passed with a C grade; SWRK 123 and 135 must be taken concurrently. Concurrent enrollment in SWRK 160 also required; 2.5 minimum cumulative GPA and completion of lower division GE. A general systems approach focused on the interaction of biological, psychological, and cultural phenomena with individuals, small groups, complex organizations, and communities.

Units: 3
Course Typically Offered: Fall

SWRK 136. Cultural Diversity and Oppression
Prerequisite: SWRK 20 passed with C grade, and completion of Lower Division GE requirements for Social Work Undergraduate majors. No restrictions for any other majors. Cultural, economic, ethnic, social, and psychological
considerations for helping members of groups who suffer oppressed status in our heterogeneous society. Multicultural/International M/I.

Units: 3
Course Typically Offered: Fall, Spring

SWRK 137. Principles in Cross-Cultural Competence

Units: 3
Course Typically Offered: Fall, Spring

SWRK 152. Introduction to Mediation & Conflict Resolution for Human Service Professionals
To provide students a knowledge base in mediation as a method of conflict resolution and enable them in development of beginning level skills in mediating conflicts as a part of social work practice.

Units: 3

SWRK 160. Social Work Practice: Professional Identity
Prerequisites/Corequisites: SWRK 20 passed with C grade and SWRK 123 and SWRK 135 taken concurrently; 2.5 minimum cumulative GPA; completion of lower division GE passed with minimum C grade. Course reserved for Social Work Undergraduate majors The development of professional identity in generalist social work practice.

Units: 3
Course Typically Offered: Fall

SWRK 161. Social Work Processes
Prerequisites: SWRK 20, SWRK 123, SWRK 135 and SWRK 160. Foundation for generalist Social Work Practice. (Formerly SWRK 130.)

Units: 3
Course Typically Offered: Spring

SWRK 161S. Social Work Processes
Prerequisites: SWRK 20, SWRK 123, SWRK 135, and SWRK 160. Foundation for generalist social work practice. A service learning component will be integrated for further reflection and professional growth.

Units: 3

Prerequisites: SWRK 20, SWRK 123, SWRK 135, and SWRK 160. Introduction to social work research and quantitative methods. Focuses on the scientific methods, quantitative methods, data analysis, and presentation. (Formerly SWRK 127).

Units: 3
Course Typically Offered: Spring

SWRK 171. Qualitative Research in Social Work: Theory and Application
Prerequisite: SWRK 170 passed with a C grade. Introduction to the use of qualitative research methods. Focuses on an inductive approach to building knowledge for practice. Content includes development of research questions, study design, sampling, data collection, and data analysis. (Formerly 176)

Units: 3
Course Typically Offered: Fall

SWRK 180. Seminar in Macro Practice
Prerequisites: SWRK 20, SWRK 123, SWRK 135, SWRK 136, SWRK 160, SWRK 161 or SWRK 161S. Must be taken concurrently with SWRK 181I. Analysis of intervention strategies in large groups, organizations, and the community. In conjunction with field, this class represents the macro culminating experience in the social work major. (Formerly SWRK 139 and 141.)

Units: 3
Course Typically Offered: Fall

SWRK 181I. Field Instruction A
First semester Field internship. SWRK 20, SWRK 123, SWRK 135, SWRK 136, SWRK 160 and SWRK 161 or SWRK 161S passed with C grade. Concurrent enrollment in SWRK 180. Guided social work practice experience with individuals, groups, families and organizations. Liability insurance required during internship. CR/NC grading only. (CSU liability insurance fee, $8)

Units: 6
Course Typically Offered: Fall

SWRK 182I. Field Instruction B
Second semester field internship. Prerequisites: SWRK 180 and SWRK 181 with a CR grade; concurrent enrollment in SWRK 183. Guided social work practice experience with individuals, groups, families and organizations. Liability insurance required. CR/NC grading only. (Formerly SWRK 181, second semester), (CSU liability insurance fee, $8)

Units: 6
Course Typically Offered: Spring

SWRK 183. Seminar in Micro Practice
Prerequisite: SWRK 180 and SWRK 181 passed with a C or CR grade. Must be taken concurrently with SWRK 182. Acquisition of micro social work practice skills integrating human behavior and social environment theories, research, and social policy in interventions with individuals, families and small groups. With field, seminar represents the culminating experience in micro practice in the social work major. (Formerly SWRK 140.)
Units: 3
Course Typically Offered: Spring

SWRK 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

SWRK 200. Social Welfare Policy I
Philosophical and historical foundations of the profession of social work and the domain of social welfare. Includes review of major federally sponsored social policies and programs in the United States and the relationship between social problems, and programmatic professional responses.
Units: 3

SWRK 203. Social Welfare Policy II
Prerequisite: SWRK 200. Concurrent Enrollment in SWRK 272T, is recommend. Analysis of social welfare policies, including social, economic, cultural, political, legislative, administrative and legal dimensions. Comparison of various policy analysis frameworks. The role of social workers in the policy-making process.
Units: 3

SWRK 212. Human Behavior in the Social Environment: A Multisystems Approach
Provides knowledge of the theories that attempt to bring understanding to the behavior of people as individuals, members of families, groups, organizations and communities.
Units: 3

SWRK 213. Human Behavior and Social Environment: Cultural Diversity and Oppression
Prerequisite: SWRK 212. Theoretical knowledge-based implications for advanced social work practice with culturally diverse and oppressed populations. (Formerly SWRK 216).
Units: 3

SWRK 220. Seminar in Foundations for Social Work Practice I
Concurrent enrollment in SWRK 280 required. Seminar about the development of social work practice with an emphasis upon intervention with individuals, families, small groups, organizations and communities.
Units: 4

SWRK 221. Seminar in Foundations for Social Work Practice II
Prerequisite: SWRK 220 and concurrent enrollment SWRK 281. Analysis and application of the theories, principles and techniques of social work practice with individuals, families, groups, organizations, and communities.
Units: 4

SWRK 224. Seminar in Advanced Social Work Practice with Individuals
Prerequisites: SWRK 203, SWRK 213, SWRK 221, SWRK 261, SWRK 281 and concurrent enrollment in SWRK 282. Analysis and application of the theories, principles and techniques of social work practice with individuals from a strength-based, empowerment perspective.
Units: 3

SWRK 225. Seminar in Advanced Social Work Practice with Task and Treatment Groups
Prerequisites: SWRK 200, SWRK 203, SWRK 212, SWRK 213, SWRK 220, SWRK 221, SWRK 260, SWRK 261, SWRK 280, and SWRK 281. Concurrent enrollment in SWRK 224, SWRK 246, SWRK 282, SWRK 292. Analysis and application of the theories, principles and techniques of skills used in task and treatment groups.
Units: 3

SWRK 227. Seminar in Advanced Social Work Practice with Couples and Families
Prerequisites: SWRK 224, SWRK 225, SWRK 246, SWRK 282 and concurrent enrollment in SWRK 247 and SWRK 283. Analysis and application of theories, principles and techniques of social work practice with couples and families from a strength-based, empowerment perspective.
Units: 3

SWRK 246. Seminar in Advanced Social Work Practice with Formal Organizations
Prerequisite: SWRK 203, SWRK 213, SWRK 221, SWRK 261, SWRK 281 and concurrent enrollment in SWRK 224, SWRK 225, and SWRK 282. Theory and practice of the administration of formal social service organizations.
Units: 2

SWRK 247. Seminar in Advanced Social Work Practice with Communities
Prerequisite: SWRK 203, SWRK 213, SWRK 221, SWRK 261, SWRK 282, and concurrent enrollment in SWRK 227 and SWRK 283. Theory and practice of social work intervention with communities.
SWRK 260. Quantitative Social Work Research
Concurrent enrollment: SWRK 200 and SWRK 212. Foundation course on social work research and evaluation using quantitative methods that prepare students for the master's project/thesis: The nature of inquiry, scientific method, ethics, research designs, sampling strategies and data analysis and presentation.
Units: 3

SWRK 261. Qualitative Social Work Research
Prerequisite: SWRK 200, SWRK 212, SWRK 260. Foundation course on social work research and evaluation using qualitative methods that prepare students for the master's project/thesis: the nature of qualitative inquiry, ethics, topic selection, research approaches, methods of observation and data collection, and data analysis and presentation.
Units: 3

SWRK 269. Advanced Practice Public Mental Health Services I
Knowledge and skills for advanced graduate social work practice in public mental health. Content covers values/ethics, diversity, public policies, practice interventions, services organization and delivery. Required for CalSWEC Public Mental Health Stipend students. Prerequisite: Completion of foundation year course work.
Units: 3

SWRK 270. Advanced Practice Public Mental Health Services II
Advanced public mental health practice. Recovery Model, skills, and evidence-based practice. Required for CalSWEC Public Mental Health Stipend students. Prerequisites: Completion of foundation year course work and SWRK 269 PMHS I, or permission of instructor.
Units: 3

SWRK 271T. Seminar in Social Work Specializations
In-depth study of specific treatment modalities or methods, e.g., community or organization, community development, crisis intervention, personality adjustment.
Units: 1-3

SWRK 273. Advanced Social Work Practice and Sexuality
Units: 3

SWRK 274. Advanced Social Work Practice in Schools
Addresses the specific knowledge and skills for advanced social work practice in school settings. A requirement for the Pupil Personnel Services credential in school social work and child welfare and attendance.
Units: 3

SWRK 275. Advanced Social Work Practice in Schools II
Prerequisite: SWRK 274. Addresses specific target populations, strategies for intervention and evaluation of advanced social work practice in school settings. A requirement for the Pupil Personnel Services credential in school social work and child welfare and attendance.
Units: 3

SWRK 276. Psychosocial Assessment and Treatment Planning for Clinical Social Work
Pre-requisite: SWRK 224. Develop competence in clinical assessment, identify a collaborative treatment plan, and understand the part various mental, behavioral, and emotional problems play in assessment and treatment planning in clinical social work practice.
Units: 3

SWRK 277. Advanced Practice Seminar on Trauma and Abuse
Prerequisite: SWRK 220. Analysis of the effects of trauma and abuse on victims. Historical context of trauma and post-traumatic stress reactions. Effects of trauma and abuse on child and adult development and on individuals and families across cultures and nations. (Formerly SWRK 271T)
Units: 3

SWRK 278. Advanced Child Welfare Practice
Designed to assist students in development of practice skills (assessment, treatment, and intervention planning) in work with children and families involved within the child welfare system. Required for Title IV-E Child Welfare Program students. Meets State of California pre-licensure requirements for child abuse assessment and reporting content. (Formerly SWRK 271T)
Units: 3

SWRK 279. Seminar in Advanced Social Work Practice with Elders
Advanced multi-systems practice course focused on assessment and intervention with older adults and their families. Recommended prerequisite: SWRK 125. Course may be used to meet requirements for gerontology certification. Meets State of California requirements for licensure and continuing education.
Units: 3
SWRK 280. Field Instructed Practice I
Prerequisite: permission of field coordinator and concurrent enrollment in SWRK 220. First of two semesters applying foundation theories and concepts in field-instructed practice with individuals, groups, families, formal organizations, and communities. Approved for RP grading. CR/NC grading only.
Units: 2-3

SWRK 281. Field Instructed Practice II
Prerequisite: SWRK 280, concurrent enrollment in SWRK 221 and permission of Field Coordinator required. Second of two semesters applying foundation theories and concepts in field instructed practice experience with individuals, families, groups, formal organizations and communities. Approved for RP grading. CR/NC grading only. (Formerly SWRK 250) (CSU liability insurance fee, $8)
Units: 0

SWRK 282. Advanced Field Instructed Practice I
Prerequisites: SWRK 281; concurrent enrollment in SWRK 224, SWRK 225, and SWRK 246, and permission of Field Coordinator. First of two semesters applying advanced theories and concepts in field instructed practice with individuals, families, groups, formal organizations and communities. Approved for RP grading. CR/NC grading only. (Formerly SWRK 251). (CSU liability insurance fee, $8)
Units: 3

SWRK 283. Advanced Field Instructed Practice II
Prerequisites: SWRK 282; concurrent enrollment in SWRK 227 and SWRK 247 and permission of Field Coordinator. Second of two semesters applying advanced theories and concepts in field instructed practice with individuals, families, groups, formal organizations and communities. Approved for RP grading. CR/NC grading only. (Formerly SWRK 251). (CSU liability insurance fee, $8)
Units: 3

SWRK 290. Independent Study
See Academic Placement -- [-LINK-]. Approved for SP grading.
Units: 1-3

SWRK 292. Seminar in Thesis/Project
Prerequisite: SWRK 260 and SWRK 261. Seminar for developing and implementing thesis or project research that adds to social work practice and knowledge. (Formerly SWRK 272T).
Units: 2

SWRK 298. Project
Prerequisites: SWRK 292 with a C grade and Advancement to Candidacy. See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable project for the master's degree. Approved for RP grading.
Units: 2, Repeatable up to 4 units

SOCK 298C. Project Continuation
Pre-requisite: Project SWRK 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

SWRK 299. Thesis
Prerequisite: SWRK 292 and Advancement to Candidacy. See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.
Units: 2

SWRK 299C. Thesis Continuation
Pre-requisite: Thesis SWRK 299. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

SOCIOLOGY

SOC 1. Principles of Sociology
Introduction to the principles and theoretical perspectives of sociology and their application to the fundamental problems of social life. Discussion of sociological methods and findings in such areas as family, race relations, deviance. "S" sections (SOC 1S) include a Service-Learning requirement. For more information, visit www.fresnostate.edu/cesl. G.E. Breadth D3.
Units: 3
GE Area: D3

SOC 1S. Principles of Sociology
Introduction to the principles and theoretical perspectives of sociology and their application to problems of social life. Discussion of sociological methods and findings in such areas as family, race relations, deviance. S sections include a service-learning requirement (see page 45) G.E. Breadth D3.
Units: 3

SOC 3. Critical Thinking About Society
Introduction to the principles and theoretical perspectives of sociology and their application to problems of social life. Discussion of sociological methods and findings in such areas as family, race relations, deviance. S sections include a service-learning requirement (see page 45) G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall, Spring
GE Area: D3
Units: 3
Course Typically Offered: Fall, Spring

GE Area: A3

SOC 3S. Critical Thinking About Society
Prerequisite: grade of C or better in SOC 1 for sociology majors and minors. Theory and practice in basic skills of critical thinking and sociological analysis. Skills demonstrated by oral and written performance including analysis of computerized data sets. Topics covered and assignments vary with instructor. S sections include a service-learning requirement. G.E. Foundation A3

Units: 3
Course Typically Offered: Fall, Spring

SOC 111. Sociology of Race and Ethnicity
Prerequisites: G.E. Foundation and Breadth Area D. Dominant and minority group relations historically, cross-culturally, and in contemporary American society. Primarily, the bases examined are in terms of ethnicity-race, religion, nationality, country-of-origin, nativity, and language. Multicultural/International M/I.

Units: 3
Course Typically Offered: Fall, Spring, Summer

SOC 122. Social Movements
Theory of nonviolent direct action in the pursuit of social justice and social change. Discussion of goals, ideology, norms, organizational structure, leadership, strategy, tactics, and social roots of social movements.

Units: 3
Course Typically Offered: Spring - odd

SOC 125. Statistics for the Social Sciences
Prerequisite: completion of Math requirement in G.E. Foundation B4; grade of C or better in SOC 1 or SOC 1S and SOC 3 or SOC 3S; open only to Sociology majors and Sociology minors. Introduction to quantitative methods as an aid to the understanding of research in the social sciences. Application of basic descriptive and inductive statistics to the social sciences. (2 lecture, 2 lab hours)

Units: 4
Course Typically Offered: Fall, Spring

SOC 130W. Contemporary Social Issues
Prerequisite: satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement; grade of C or better in SOC 1 or SOC 1S and SOC 3 or SOC 3S for sociology majors and minors. Currently debated public issues are examined using a sociological perspective. Often, public issues involve present or proposed public policies; the impact of these policies on different segments of society is assessed. Meets upper-division writing skills graduation requirement. S sections include a service-learning requirement.

Units: 4
Course Typically Offered: Fall, Spring

SOC 130WS. Contemporary Social Issues
Prerequisites: satisfactory completion (C or better) of the ENGL 5B or ENGL 10 graduation requirement; grade of C or better in SOC 1 or SOC 1S and SOC 3 or SOC 3S for sociology majors and minors. Currently debated public issues are examined using a sociological perspective. Often, public issues involve present or proposed public policies; the impact of these policies on different segments of society is assessed. Meets upper-division writing skills graduation requirement. S sections include a service-learning requirement.

Units: 4
Course Typically Offered: Fall, Spring

SOC 131. Sociology of Sex and Gender
Prerequisites: G.E. Foundation and Breadth Area D. Introduces students to the sociological study of sex and gender. Looks at how men and women experience differently such social structures as work and the economy, family and courtship, and media. Examines the evidence for the persistence of gender differences and their importance. G.E. Integration ID.

Units: 3
GE Area: ID

SOC 132. Women and Work
(SOC 132 same as WS 132.) An examination of women and work in contemporary society including housework, labor force participation, employment in various occupations, and career planning.

Units: 3

SOC 132. Women and Work

SOC 142. Sociology of Popular Culture
Prerequisites: G.E. Foundation and Breadth Area D. Impact of popular culture on modern society. Includes movies, television, fiction, and other forms of popular culture. The meaning, the creation and production, and the future of popular culture. Multicultural/International M/I.

Units: 3

SOC 143. Deviance and Control
Prerequisites: G.E. Foundation and Breadth Area D. Rule-breaking behavior (such as crime, delinquency, mental illness) and responses to it. Examines deviance as a social phenomenon, its causes and consequences, and formal and informal social control activities. G.E. Integration ID.

Units: 3
GE Area: ID

SOC 144. Social Policy Analysis
Interdisciplinary social science methods for approaching local and national social problems. Analysis of selected public issues emphasizing evaluation of social costs and benefits of alternative policies.
Units: 3
Course Typically Offered: Fall

SOC 147. Medical Sociology
Political and economic organization of American medical health care system and cross-cultural comparisons. Analysis of social relations and interactions among members of the health professions affecting designations of persons as ill and their subsequent treatment.

Units: 3
Course Typically Offered: Fall, Spring

SOC 148. Sociology of Education
A sociological examination of education as an institution, including its social determinants, functions, and consequences.

Units: 3

SOC 150T. Special Topics Seminar
Prerequisite: permission of instructor. Topics include those areas of advanced theoretical and empirical studies that will orient the student to contemporary sociological endeavors.

Units: 1-3

SOC 150T. The Political Economy of Healthcare
This course will cover topics that include the significant health status disparities between income groups, sexes, and racial/ethnic groups in the U.S. Other topics to be covered include an overview of epidemiology, the structure and growth of the U.S. health care industry, and the interactions between health care providers, third-party payers, economics, and politics. Other developed countries health care systems will be compared to that of the U.S. (Offered Spring 2020)

Units: 1

SOC 150T. Engaging Special Populations as Volunteers
Planning for, facilitating and creating an organizational culture conducive to community engagement and volunteer participation requires a manager capable of working collaboratively to build projects that engages special populations-including PWD and formerly incarcerated individuals-in meaningful, goal directed work that address the organization's mission and meets identified needs. (Offered Spring 2020)

Units: 4
Course Typically Offered: Fall, Spring

SOC 151. Social Classes and Inequality
Prerequisites: Grade of C or better in Tier One and Tier Two courses (SOC 1 or 1S; SOC 3 or 3S; SOC 125; and SOC 130W/WS or UDWE); open only to Sociology majors and Sociology minors. Examines classical and contemporary theoretical approaches to the sociological study of socioeconomic inequality, including the social causes and consequences of stratification. This course will also address key policy debates, major research findings, and methodological approaches to the study of inequality.

Units: 4
Course Typically Offered: Fall, Spring

SOC 152. Classical Sociological Theory
Prerequisites: Grade of C or better in Tier One and Tier Two courses (SOC 1 or 1S; SOC 3 or 3S; SOC 125; and SOC 130W/WS or UDWE); open only to Sociology majors and Sociology minors. Evolution of classical sociological theories. Consideration of their origins in society and culture. Examination of such theorists as Marx, Weber, Durkheim, Simmel, Mead, and others

Units: 4
Course Typically Offered: Fall, Spring

SOC 153. Sociological Theory
Prerequisites: Grade of C or better in Tier One and Tier Two courses (SOC 1 or 1S; SOC 3 or 3S; SOC 125; and SOC 130W/WS or UDWE); open only to Sociology majors and Sociology minors. Survey of classical and contemporary sociological theoretical perspectives developed after the "classical" period. Theories covered may include: micro-sociological perspectives of phenomenology and symbolic interactionism, social behaviorism, structural-functionalism, neo-Marxian perspectives and critical theory, accounts of modernity and post-modernity, feminist theory, systems theories, and others

Units: 4
Course Typically Offered: Fall, Spring

SOC 157. Social Change
Analysis of directions, patterns, and processes of social and cultural change.

Units: 3
Course Typically Offered: Spring - even

SOC 161. Population Analysis
Population theories and history; demographic processes and variables in contemporary society. Analysis of census data.

Units: 3

SOC 162. Social Psychology
Prerequisites: Tier One courses (SOC 1, SOC 3, SOC 25, and SOC 130W or UDWE). Social factors affecting the
development of social personality, attitudes and behavior. Basic social processes involved in interpersonal interaction. Demonstrations and student observations to increase an understanding of social processes in everyday life

Units: 3
Course Typically Offered: Fall, Spring

**SOC 163. Urban Sociology**
Prerequisites: G.E. Foundation and Breadth Area D. The urban concept; form and development of urban areas; scientific study of urban places and populations; effect of urbanization on social institutions and social relations. G.E. Integration ID

Units: 3
Course Typically Offered: Fall, Spring

**GE Area: ID**

**SOC 165. The Family**
The family in historic and contemporary society, theoretical frameworks for analyzing the family, family dynamics; changes in family functions, structures, and roles.

Units: 3
Course Typically Offered: Fall

**SOC 167. Sociology of Childhood**
Analyzes the historical and contemporary social forces shaping perceptions of childhood as a distinct stage in the life course and children's social experiences. Focuses on agents of children's socialization, inequalities affecting childhood, and social problems facing children.

Units: 3

**SOC 168. Interpersonal Relationships**
Exploration of the basic elements of interpersonal relationships including listening, disclosure, feedback, empathy. (Formerly SOC 150T section)

Units: 3
Course Typically Offered: Fall

**SOC 169. Sociology of Religion**
Major sects, denominations, and churches; integrative and disintegrative processes in the United States; contemporary religious phenomena.

Units: 3
Course Typically Offered: Spring

**SOC 170T. Research Topics**
Content of course will vary from semester to semester. Topics include an introduction to computer data analysis, a more in-depth discussion of computer data analysis, survey research, observational techniques, measurement, sampling.

Units: 1-3

**SOC 170T. Visual Sociology**
This course on visual sociology will include the use of visual methods to document social life and the analysis of visual materials such as photographs, advertising, graphic novels, and film to understand a culture or society. In this class, students will use visual methods to understand themselves and topics or sociological significance. (Offered Spring 2020)

Units: 3

**SOC 170T. Demography**
This course will serve as an introduction to the growing filed of demography, population theories, and analysis. (Offered Spring 2020)

Units: 1

**SOC 172. Computer Applications**
No prior knowledge of computers is necessary. Introduction to computer applications in the social sciences, spreadsheets, database management, statistical applications, e-mail, data archives, Internet, Lexis-Nexis. (2 lecture, 2 lab hours)

Units: 3

**SOC 174. Computer Data Analysis**
Prerequisites: Soc 1/1s and Soc 125 for sociology majors and minors must be completed prior to enrollment. An introduction to the use of widely utilized computer packages for analyzing quantitative data (e.g., SPSS) and/or qualitative data (e.g., NVIVO) in the social sciences. Prepares students for academic and empirical research. No prior knowledge of computers is necessary.

Units: 3
Course Typically Offered: Fall

**SOC 175. Quantitative Research Methods in Sociology**
Prerequisites: Grade of C or better in Tier One and Tier Two courses (SOC 1 or 1S; SOC 3 or 3S; SOC 125; and SOC 130W/WS or UDWE); open only to Sociology majors and Sociology minors. The research process with special emphasis on measurement, sampling, data collection, data analysis, and report preparation. Basic assumptions and dilemmas of social science research.

Units: 4
Course Typically Offered: Fall, Spring

**SOC 176. Qualitative Research Methods in Sociology**
Prerequisites: Grade of C or better in Tier One and Tier Two courses (SOC 1 or 1S; SOC 3 or 3S; SOC 125; and SOC 130W/WS or UDWE); open only to Sociology majors and Sociology minors. Overview of qualitative research methods in sociology, including interviews, participant observation, historical research, and content analysis of print and audio/visual media. Examines qualitative theory, ethics, proposals,
choosing a site, informant relationships, collecting and analyzing data, writing reports, and disseminating research.

Units: 4
Course Typically Offered: Fall, Spring

SOC 183S. Philanthropy and Grant Making
Reviews the history and evolving role of philanthropy in American society. Students investigate local social problems, research community benefit organizations (CBOs) that address those issues, develop a request for proposals (RFP) to fund specific projects, and evaluate funding proposals.

Units: 3

SOC 184S. Grant Writing & Evaluation
Conceptual aspects of developing, writing, and evaluating a grant proposal in the context of fund development strategies for CBOs. Emphasizes researching and preparing grant proposals as well as reading, discussing, and writing critiques of grant proposals and evaluating grant-funded programs.

Units: 3

SOC 185I. Field Experience in Sociology
Prerequisite: 2.75 minimum cumulative GPA., Junior/Senior standing in Sociology and completion of Tier 1 courses. Individually-planned field experience relating sociology coursework with applied community-based experience. Hours TBA. CR/NC grading only. (Minimum of 3 field hours per week per credit unit.)

Units: 1-6
Course Typically Offered: Fall, Spring

SOC 186S. Governance, Administrative Principles, & Financial Literacy
Introduces standards of excellence for effective community benefit organizations, including governance, administration and steward leadership, and fiscal management and oversight; allows for application in community-based settings. Examines elements of becoming an independent consultant to CBOs, including client assessment, contracting, reporting, and approximately 35 hours of consulting with CBOs.

Units: 3
Course Typically Offered: Fall

SOC 187S. Entrepreneurial Approaches to Sustainable CBOS
Applies a team-centered, open-ended, problem-solving approach and assessment utilizing service-learning and entrepreneurial methodology to enhance the organizational capacity and long-term sustainability of community benefit organizations (CBOs), including approximately 35 hours of consulting with CBOs.

Units: 3

SOC 190. Independent Study
See Academic Placement --Independent Study. Approved for SP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

COMMUNICATION

COMM 3. Fundamentals of Public Communication
Theories of human communication and their function in contemporary public settings; experiences designed to enhance fundamental communication skills -- research, organization, reasoning, listening, and problem solving -- through a series of oral presentations. G.E. Foundation A1. (CAN SPCH 4)

Units: 3
Course Typically Offered: Fall, Spring

GE Area: A1

COMM 4. Introduction to Interpersonal Communication
Introduction to various theories of interpersonal communication; participation in experiences designed to enhance competence in interpersonal relationships. (CAN SPCH 8)

Units: 3
Course Typically Offered: Fall, Spring

COMM 5. Argumentation
Logical analysis, evidence, reasoning, and proof used in arriving at rational decisions as demonstrated through presentation of public speeches and debates. G.E. Foundation A3. (CAN SPCH 6)

Units: 3
Course Typically Offered: Fall, Spring

GE Area: A3

COMM 7. Persuasion
Analysis and practice of the use of persuasion as a social tool for resolving controversy and forming opinions from the perspectives of both the persuader and the persuaded. G.E. Foundation A1.

Units: 3
Course Typically Offered: Fall, Spring

GE Area: A1

COMM 8. Group Discussion

Units: 3
Course Typically Offered: Fall, Spring

COMM 10T. Topics in Communication
Contemporary problems and issues in communication; sections include such topics as freedom of speech, parliamentary
procedure, special communication skills, rhetoric of protest and response, and communication processes.

Units: 1-3

**COMM 15. Forensics Laboratory**
This course provides instruction and experience in competitive policy debate and public debate Course credit for tournament competition and public debate participation is available.

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

**COMM 100. Theories of Human Communication**
Survey of major theories of human communication, philosophical issues, and applications; theories include interpersonal, group, organizational, intercultural, linguistic, and persuasion. A grade of C or better is required for all Communication Majors.

Units: 3
Course Typically Offered: Fall, Spring

**COMM 103. Advanced Public Speaking**
Advanced principles of expository and persuasive speaking; development of skills through analysis, preparation, organization, and delivery of various types of speech.

Units: 3
Course Typically Offered: Spring

**COMM 105. Argumentation Theory**
Analysis of the theories and techniques of argumentation, including models of argument, relationships between persuasion and argumentation, and the effects of argumentative discourse.

Units: 3
Course Typically Offered: Fall

**COMM 108. Communication and the Small Group**
Analysis of group communication theories and their application to small group behavior in specific variables such as leadership, power, conflict-resolution, conformity, cohesiveness, and related group processes.

Units: 3
Course Typically Offered: Spring

**COMM 114. Communication and Learning**
(COMM 114 same as CI 158.) The nature of communication and its relationship to learning and instruction; management of oral communication strategies in the educational setting.

Units: 3
Course Typically Offered: Fall, Spring

**COMM 115. Advanced Forensics Laboratory**
This course provides advanced instruction and experience in competitive policy debate and public debate. Course credit for tournament competition and public debate participation is available.

Units: 3, Repeatable up to 6 units
Course Typically Offered: Fall, Spring

**COMM 116. Communication and Humor**
Develop your sense of humor and learn to incorporate humor into your world by examining humor theories, social and personal functions of humor. Focuses on (1) stand-up comedy, writing, and presentation, or (2) application of techniques for management, sales, marketing, teaching, and health related fields.

Units: 3

**COMM 120. Gender Communication**
Exploration of gender variables that affect human communication behaviors, focusing on behaviors that have some mythical or factual bases in sex similarities and differences.

Units: 3
Course Typically Offered: Fall

**COMM 140. Rhetorical Theory**
An examination and analysis of significant theories and theorists of rhetoric from the classical to the modern period. Emphasis on preparation of research papers reflecting rhetorical principles of communication. A grade of C or better is required for all Communication Majors.

Units: 3
Course Typically Offered: Fall, Spring

**COMM 142. Communication Criticism**
Examination of historical and contemporary communication events using principles of critical evaluation from rhetorical, artistic, and media perspectives. Written papers and presentations of analyses utilizing critical principles from these perspectives. A grade of C or better is required for all Communication Majors.

Units: 3
Course Typically Offered: Fall, Spring

**COMM 144. Rhetoric of Terrorism**
Examines the discourse of foreign policy officials, news media, pop culture, and terrorists to explore the relationships among these rhetorics, public perceptions of terrorism and weapons of mass destruction, and foreign policy in the "war on terrorism." (Formerly COMM 188T)

Units: 3

**COMM 148. American Public Address**
An examination of significant American speakers and speeches set in an environment of social and political history. The course is designed to acquaint students with the role of public address within the forces of American history.
COMM 149. Freedom of Speech
Examines the tradition of freedom of speech and expression in the American democracy. Focuses upon the First Amendment to the Constitution and major case laws which impact contemporary standards for public discourse, politics, broadcast, and journalism.
Units: 3
Course Typically Offered: Spring

COMM 150. Communication and Aging
(COMM 150 same as GERON 150.) Focusing on the communication aspects of the aging process, organized around the major communication components of intrapersonal, interpersonal, and mass communication with addition of such topics as attitudes, stereotypes, nonverbal, and the communication aspects of health care.
Units: 3
Course Typically Offered: Fall

COMM 152. The Dark Side of Close Relationships
Examine communication theory and research related to interactions in close relationships that are typically considered challenging, abusive, complicated, stressful, taboo, or unpleasant. Investigate the negative and potential positive consequences of these relational experiences. (Formerly COMM 188T)
Units: 3
Course Typically Offered: Spring

COMM 160. Meaning, Language, and Communication
A review and analysis of the various approaches to the study of human symbolic behavior, with focus on such theories as: General Semantics, Psycholinguistics, Sociolinguistics, Epistemology, and other philosophical and scientific enquiries into the nature of language and meaning.
Units: 3
Course Typically Offered: Fall

COMM 161. Family Communication
Examine communication theories and empirical findings related to interaction in relationships such as parent-child, sibling, romantic, and grandparent-grandchild. Coverage also includes blended and non-traditional family forms. Investigate positive and sub-optimal processes including conflict, relational dissolution, and abuse.
Units: 3
Course Typically Offered: Spring

COMM 162. Interpersonal Communication
An examination, analysis, and application of communication theories and variables involved in interpersonal contexts such as acquaintanceships, courtships, friendships, and families. Attention is given to communicative practices involved in the effective management of interpersonal relationships over time.
Units: 3
Course Typically Offered: Fall, Spring

COMM 163. Social Influence and Attitude Change
Seminar on the nature and effects of social influence, with special emphasis on attitude formation and change, conformity, behavior, "brain washing," prejudice, and propaganda as functions of communication.
Units: 3
Course Typically Offered: Fall, Spring

COMM 164. Intercultural Communication
Prerequisites: G.E. Foundation and Breadth Area D. Analysis of cultural variables and factors in the communication process and strategies for the resolution of intercultural problems; consideration of implications for education and programs necessarily involving intercultural communication. Multicultural/International M/I.
Units: 3
Course Typically Offered: Fall, Spring

COMM 165. Computer Applications in Communication
Survey of information technologies and computer applications in human communication professions, including word processing, spreadsheets, graphics, presentation visuals, email, and Internet. Advanced techniques for creating Web pages, reports, training, presentations, brochures, and newsletters.
Units: 3
Course Typically Offered: Fall, Spring

COMM 166. Communication Research Methods
Application of behavioral research principles to problems in quantification, design, and analysis of data in communication research. A grade of C or better is required for all Communication Majors.
Units: 3
Course Typically Offered: Fall, Spring

COMM 167. Leadership in Groups and Organizations
Theory and practice of selected leadership variables in groups and organizations; functions of leadership in formal and informal structures, understanding and analysis of role-playing techniques.
Units: 3
Course Typically Offered: Fall

COMM 168. Communication in Organizations
Examination of organizational communication from a multiple discipline perspective. Through the study of theory and experiential learning in simulations, students develop skills
necessary for planning, staffing, developing, decision-making, and problem-solving in organizations.

Units: 3
Course Typically Offered: Fall, Spring

COMM 169. Communication and Conflict
Examination of the role of communication in conflict in interpersonal, small groups, organizational, and societal settings. Through experiential learning, case study analyses, and practice of intervention skills, students address conflict styles, strategies, tactics, third-party intervention, and mediation techniques.

Units: 3
Course Typically Offered: Spring

COMM 170. Business and Professional Speaking
Development of communication skills necessary for success in business, government, and the professions. Includes theory and practice of interviewing, job instruction training, work group leadership, and proposal presentations. Class activities are adapted to students' career goals.

Units: 3
Course Typically Offered: Spring

COMM 171. Communication and Planning Change in the Social System
Provides students with an understanding of the communication processes involved in the evolution of social systems. Students will examine a full range of social settings (small groups, organizations, cultures, etc.) from a variety of theoretical and analytical perspectives.

Units: 3
Course Typically Offered: Fall

COMM 176. Communication Consulting and Training
Development of skills necessary for effective communication consulting in business, government, and the professions. Includes theory and practice of needs assessments, planning and conducting training activities, and evaluation of educational activities; topics relating to adult education and client-consultant relationships.

Units: 3
Course Typically Offered: Spring

COMM 179I. Internship
Prerequisites: major in communication, at least 75 units completed and permission of instructor. Supervised work experience in government, business, social agencies, or nonprofit organizations. CR/NC grading only.

Units: 1-6
Course Typically Offered: Fall, Spring

COMM 188T. Topics in Communication
Selected topics in communication.

Units: 1-3

COMM 188T. Communication of Science and Technology
This class will study the nature of Communicating About Science and Technology. The focus will be on the complex interplay of societal values, economic considerations, ethical implications, and public opinion that characterizes the nascent field of the science of science communication. Longstanding issues such as climate change, energy, and biotechnology will be discussed, as well as contemporary issues including space travel, driverless cars, and human gene editing. (Offered Spring 2020)

Units: 3

COMM 188T. Environmental Communication
Overview of the field of Environmental Communication. An examination and analysis of communication theories and principles that relate to discourse pertaining to the natural world. (Offered Spring 2020)

Units: 3

COMM 188T. Peach Blossom Leadership
This course is designed for students with 2 years experience working on the Peach Blossom committee. Students will develop strong leadership skills in event planning while working as a "Team Leader". As a Team Leader, they will be advising 3-5 new Peach Blossom committee members on a variety of different teams. During the course we will cover what it means to be a leader, roles, responsibilities, and conflict management. The course will conclude with students in supervisory roles helping to run the annual Peach Blossom Oral Interpretation Festival, which brings approximately 5,000 elementary students to Fresno State over the two-day event. (Offered Spring 2020)

Units: 3

COMM 189. Projects in Communication
Prerequisite: permission of instructor. Projects in communication. (4 hours activity)

Units: 1-3
Course Typically Offered: Fall, Spring

COMM 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

COMM 205. Seminar in Argumentation
Prerequisite: COMM 105, COMM 140, or permission of instructor. Examination of traditional and contemporary argumentation theory and research. Analysis of argument fields, theories of argument, argument as epistemic, argument and persuasion, argument and critical thinking.
COMM 210. Teaching Practicum
Instruction in the development of effective public speaking, including course/material design and instructional strategy. Supervision of graduate teaching associate preparation, classroom teaching, and assessment. Required for all first-semester graduate teaching associates.
Units: 3

COMM 214. Seminar in Instructional Communication
An examination of the relationships of learning theories to communication study and research. Research in instructional communication, teaching strategies in communication education, and techniques for applying these concepts in educational and training settings.
Units: 3

COMM 215. Seminar in Communication
Research and individually directed work within one area of specialization. Approved for RP grading.
Units: 3, Repeatable up to 9 units

COMM 241. Seminar in Rhetorical Theory
Prerequisite: COMM 140, equivalent, or permission of instructor. A seminar which deals with the development of specific principles by selected theorists.
Units: 3

COMM 242M. Seminar in Contemporary Criticism
Prerequisite: COMM 142, equivalent, or permission of instructor. The role of rhetorical criticism in contemporary society.
Units: 3

COMM 243. Seminar in Public and Strategic Discourse
A detailed study of the theory and practice of public discourse used to persuade audiences regarding the nature and resolution of political, social, religious, and economic problems.
Units: 3

COMM 262. Seminar in Communication Theory and Research
Prerequisite: COMM 100, equivalent, or permission of instructor. An examination and evaluation of mathematical, philosophical, sociological, psychological, and rhetorical theories of human communication. Emphasis upon the assumptions and implications of various theories, models, and constructs.
Units: 3

COMM 263. Seminar in Group Communication
Prerequisite: COMM 108, equivalent, or permission of instructor. A critical examination of the scientific research and theories in group communication including research variables and methodologies. Implications of research findings for contemporary communication problems.
Units: 3

COMM 264M. Seminar in Communication Research Methods
Prerequisite: Application of quantitative, qualitative, and/or critical methodologies to a variety of problems studied in human communication. Discussion of design, analysis, and interpretation of quantitative and/or experiences.
Units: 3

COMM 265. Seminar in Interpersonal Communication
Prerequisite: COMM 162, equivalent, or permission of instructor. An examination of current quantitative and qualitative theory and research in interpersonal communication. Implications and applications to various kinds of human relationships and various aspects of those relationships, e.g., stages, relational communication, attraction, conflict, self-disclosing. (Formerly SPCH 265)
Units: 3

COMM 266. Seminar in Communication and Culture
An examination of current critical, humanistic, and/or social scientific approaches to studying the communicative construction, negotiation, and performance of cultural identities and practices.
Units: 3

COMM 268. Seminar in Organizational Communication
Prerequisite: COMM 168, equivalent, or permission of instructor. Theory and application of organizational communication, including interpersonal and group communication in planning, staffing, development and decision making in complex organizations; organizational systems and environments; recognizing, diagnosing, and solving organizational problems.
Units: 3

COMM 275. Seminar in Applied Communication
An extended examination of theories, research methodologies, and professional practices regarding communication in a specific applied context (e.g., health communication, risk communication, legal communication, etc.).
Units: 3
COMM 276. Seminar in Communication Training and Development
Prerequisite: COMM 176, equivalent, or permission of instructor. In-depth view and application of approaches to training in communication skills in organizations including needs assessment for training, workshop and seminar development, and evaluation of interventions.
Units: 3

COMM 290. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.
Units: 1-3

COMM 298. Project
Prerequisite: prior advancement to candidacy, appropriate methodological tools (COMM 242M or COMM 264M), equivalent, or permission of student's committee. See Criteria for Thesis and Project. Preparation, design, conduct, and evaluation of project applying rhetorical and communication theories; e.g., communication campaign for public agency, communication audit of corporate organization, extensive consulting or training activities, etc. Requires scholarly report similar in format to thesis and final oral defense. Approved for RP grading.
Units: 2-6

COMM 298C. Project Continuation
Pre-requisite: Project 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

COMM 299. Thesis
Prerequisite: appropriate methodological tools (COMM 242M or COMM 264M), equivalent, or permission of student's committee. See Criteria for Thesis and Project. Preparation, completion, and submission of an acceptable thesis for the master's degree. Approved for RP grading.
Units: 2-6

COMM 299C. Thesis Continuation
Pre-requisite: Thesis 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

EHD 155B. Studt Tchg Spch
Prerequisites: admission to student teaching, EHD 155A, CI 161 (or concurrently, depending on major departmental policy); senior or post baccalaureate standing; approval of major department including subject matter competency approval; completion of the subject matter preparation program or passing the subject matter examination(s) designated by the California Commission on Teacher Credentialing. Supervised teaching in single subject classroom; assignment is for the full day; five days per week. CR/NC grading only.
Units: 5-10
Course Typically Offered: Fall, Spring

COMM SCIENCES AND DEAF STUDIES

CSDS 80. Introduction to Human Communication and Disorders
An overview of speech, language and hearing, and disorders of communication; interrelations between the causes of communication disorders and their psychological and sociological effects.
Units: 3

CSDS 90. Deaf American Literature
Introduction to major American Sign Language and English-language works composed by Deaf authors and artists in America. Addresses contexts in which literary and cultural texts were created, and how they reflect and shape American Deaf culture. Knowledge of Sign Language recommended but not required.
Units: 3

CSDS 91. American Sign Language I
Introduction to the appreciation, comprehension, and analysis of a language developed in a visual/gestural mode. American Sign Language, its cultural/historical background, the role it plays in the deaf community, and its growing influence in American mainstream society.
Units: 3
Course Typically Offered: Fall

CSDS 92. American Sign Language II
Prerequisite: G.E. Foundation A2; CSDS 91 or permission of instructor. Further appreciation, comprehension, and analysis of the uniqueness of a visual/gestural language, including its cultural/historical background and the role it has played in deaf communities in the United States and throughout the world. G. E. Breadth C2. (Formerly CSD 134)
Units: 3
Course Typically Offered: Fall, Spring
GE Area: C2

CSDS 93. American Sign Language III
Prerequisites: CSDS 92. Continued study of grammatical structure of the lexicon of American Sign Language related to its historical, artistic, and cultural influence in mainstream
society with emphasis on receptive/expressive conversational and cultural skills for communication. (Formerly CSD 93)

Units: 3
Course Typically Offered: Fall, Spring

CSDS 94S. American Sign Language IV
Prerequisites: CSDS 93. Full development of receptive/expressive conversational skills in a culturally appropriate and participatory fashion, using American Sign Language to converse, narrate, and engage in conversations with deaf children and adults from diverse backgrounds. (Formerly CDDS 94)

Units: 3
Course Typically Offered: Fall, Spring

CSDS 95. Introduction to Speech and Language Development
Study of normal verbal development; compilation of developmental milestones in speech and language acquisition.

Units: 3
Course Typically Offered: Fall, Spring

CSDS 96. Linguistics of American Sign Language
Prerequisites: CSDS 91, CSDS 92. This course includes an overview of basic morphology, phonology, syntax and sociolinguistics; a study of systems previously used to analyze American Sign Language; and comparison of the structure of American Sign Language to spoken languages. (Formerly CDDS 138)

Units: 3
Course Typically Offered: Fall

CSDS 98. Introduction to Hard of Hearing and Deaf People
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Introduces diversity among hard of hearing and deaf individuals, their backgrounds, their history, and their life experiences. Emphasis on understanding their minority status and appreciating communications and cross-cultural skills for interaction. G. E. Breadth D3.

Units: 3
Course Typically Offered: Fall, Spring

GE Area: D3

CSDS 101. Phonetics of American English
Perceptual and physiological characteristics of American English speech sounds; application of phonetics to the study of normal and abnormal speech patterns and regional dialects.

Units: 3
Course Typically Offered: Fall, Spring

CSDS 102. Anatomy and Physiology of the Speech Hearing Mechanisms
Anatomic and physiologic bases of the speech and hearing mechanisms.

Units: 3
Course Typically Offered: Fall, Spring

CSDS 103. Speech and Hearing Science
Physiological acoustics, psychoacoustics, acoustic phonetics, and perception of speech.

Units: 3
Course Typically Offered: Fall, Spring

CSDS 105. Speech Sound Disorders in Children
Prerequisites: A minimum 3.0 G.P.A.in CSDS 80, CSDS 95, CSDS 101, CSDS 102, with a grade of C or better in each course. Seminar on the assessment and treatment of articulation and phonological disorders.

Units: 3
Course Typically Offered: Fall, Spring

CSDS 106. Analysis of Language Acquisition by Deaf Children
Prerequisite: ENGL 5B or ENGL 10. Comparative analysis of the structure of written language of normally developing and deaf children and youth.

Units: 3
Course Typically Offered: Fall, Spring

CSDS 107. Observation in Communicative Disorders and Deaf Studies: Speech-Language Pathology
Prerequisites: CSDS 80, CSDS 95, CSDS 101, CSDS 102, CSDS 103, CSDS 105; corequisite: CSDS 110. Observation of assessment, treatment, parent counseling, and other clinical services in the University Speech and Hearing Clinic or at other professional settings. FS

Units: 1-3
Course Typically Offered: Fall, Spring

CSDS 109. Disorders of Language
Prerequisites: A minimum 3.0 G.P.A.in CSDS 80, CSDS 95, CSDS 101, CSDS 102, with a grade of C or better in each course. Seminar on language disorders in children; description of clinical subgroups; assessment and treatment.

Units: 3
Course Typically Offered: Spring

CSDS 110. Diagnostic Procedures
Prerequisites: CSDS 80, CSDS 95, CSDS 101, CSDS 102, CSDS 105. Corequisite: CSDS 107 (1 unit). Principles and procedures of diagnostic evaluation of communicative disorders. FS

Units: 3
Course Typically Offered: Fall, Spring

CSDS 114. Education of Exceptional Children
Characteristics of exceptional children; diagnostic and instructional programs; legal and certification issues; observation.
Units: 3

Course Typically Offered: Spring

CSDS 115. Disorders of Fluency and Voice
Prerequisites: A minimum 3.0 GPA in CSDS 80, CSDS 95, CSDS 101, CSDS 102 with a grade of C or better in each course. Normal and deviant vocal productions; introduction to assessment and treatment principles of analysis, measurement, and management of fluency disorders in children and adults.
Units: 3

Course Typically Offered: Fall

CSDS 116. Treatment Procedures in Communicative Disorders
Select one of the following prerequisites: CSDS 105, CSDS 109, or CSDS 115. Treatment procedures that apply across disorders of communication; developing client-specific treatment programs.
Units: 3

Course Typically Offered: Spring

CSDS 117. Behavioral Principles in Assessing and Treating Communicative Disorders
Prerequisites: A minimum 3.0 GPA in CSDS 80, CSDS 95, CSDS 101, CSDS 102 with a grade of C or better in each course. Introduction to the principles of behaviorism and applications to the assessment and treatment of communicative disorders.
Units: 3

Course Typically Offered: Spring

CSDS 121. Cochlear Implants and Deaf Children
Strategies for addressing academic, social, emotional, and audiological needs of children with cochlear implants in a variety of educational settings. Emphasis on communication skills, developing auditory skills, early literacy development, checking and troubleshooting equipment.
Units: 3

Course Typically Offered: Spring

CSDS 125. Audiometry and Audiology for School Nurses
Prepares students in obtaining certification as a School Audiometrician. Provides an introduction to the profession of Audiology, hearing loss and its medical aspects, the components of a hearing conservation program, basic assessment and management, and the fundamentals of interpretation.
Units: 3

Course Typically Offered: Fall

CSDS 128. Observation in Audiology
Prerequisites: CSDS 80, CSDS 95, CSDS 102; priority will be given to seniors; corequisite: CSDS 131. Observation of audioligic testing.
Units: 1-3

Course Typically Offered: Fall, Spring

CSDS 129. Observation in Audiology
Prerequisites: CSDS 80, CSDS 95, CSDS 102; priority will be given to seniors; corequisite: CSDS 128. Hearing loss and its medical aspects; introduction to hearing conservation; assessment of hearing loss; interpretation of diagnostic test results. (Formerly C D 131)
Units: 3

Course Typically Offered: Fall, Spring

CSDS 131. Principles of Audiology
Prerequisite: CSDS 80, CSDS 95, CSDS 102; priority will be given to seniors; corequisite: CSDS 128. Hearing loss and its medical aspects; introduction to hearing conservation; assessment of hearing loss; interpretation of diagnostic test results. (Formerly C D 131)
Units: 3

Course Typically Offered: Fall, Spring

CSDS 135. Sign Variations for Classroom Use
Prerequisites: CSDS 91, CSDS 92, CSDS 93. Focus on signing skills and different models/systems of communication used with deaf and hard-of-hearing students in a classroom.
Units: 3

Course Typically Offered: Spring

CSDS 136S. American Sign Language V with Service Learning
Prerequisites: CSDS 94S (with a grade of "C" or better) and CSDS 139. Focus primarily on building extensive specialized vocabularies essential for gaining sign language fluency and conversational competence for professionals working and communicating with deaf and hard-of-hearing children and adults.
Units: 3

Course Typically Offered: Spring

CSDS 137. American Sign Language V Lab
Prerequisite: CSDS 94S. Corequisite: CSDS 136S (3 units). Principles and linguistic features of American Sign Language. CR/NC grading only. (2 lab hours)
Units: 1

Course Typically Offered: Spring

CSDS 139. Deaf Culture
Prerequisites: G.E. Foundation and Breadth Area D. Experiences faced by deaf people, and their varying degrees of participation in deaf culture/deaf community; social, emotional, vocational, intellectual, and linguistic aspects of deaf culture; historical and current struggles to overcome problems experienced by deaf people in American and international cultures. Multicultural/ International MI. (Formerly HHS 139)
Units: 3
Course Typically Offered: Fall, Spring

CSDS 141. Education of Deaf Children and Their Parents
Units: 3

Course Typically Offered: Spring

CSDS 162. Speech for Deaf and Hard-of-Hearing Children and Youth
Prerequisites: CSDS 80, CSDS 91, CSDS 92, CSDS 95, CSDS 106; corequisite: CSDS 138. Seminar on techniques to develop speech in deaf and hard-of-hearing children and youth; observation, demonstration, and practice with deaf and hard-of-hearing children and youth. S
Units: 3

Course Typically Offered: Spring

CSDS 163. ASL and English Acquisition by Deaf Children and Youth
Prerequisites: CSDS 80, CSDS 91, CSDS 92, CSDS 95, CSDS 106, CSDS 138, CSDS 141. Teaching techniques to develop language in deaf and hard-of-hearing children and youth; construction of English sentences and grammar; comparative studies of various language curricula.
Units: 3

Course Typically Offered: Fall

CSDS 164. School Subjects for Deaf and Hard-of-Hearing Children and Youth
Prerequisites: CSDS 80, CSDS 91, CSDS 92, CSDS 95, CSDS 106, CSDS 138, CSDS 141; and permission of instructor. The process of teaching academic school subjects to deaf and hard-of-hearing children and youth; observation and demonstration. (2 lecture, 2 lab hours) (CSU liability insurance fee, $8)
Units: 3

Course Typically Offered: Fall

CSDS 166. Introduction to Interpreting
Corequisites: CSDS 93 and CSDS 139. Study of the theoretical foundations and technical skills needed to interpret in professional settings for deaf and hard-of-hearing children and adults. The roles, responsibilities, and ethics of interpreters providing interpreting services in various professional settings.
Units: 3

Course Typically Offered: Fall

CSDS 168S. Observations in Sign Language Studies
Prerequisite: CSDS 166. Co-requisite: CSDS 169 or CSDS 170. Development of practical interpreting skills in professional settings, such as: artistic, educational, health, legal, medical, mental health, rehabilitation, and social services settings. S sections include a service-learning requirement.
Units: 2

CSDS 169. Theory & Proc SL Interpreting
Prerequisites: grade of C or better in CSDS 136, CSDS 166, and CSDS 170. Emphasis on the development of the communication skills necessary for interpreting between spoken English and sign language in professional settings.
Units: 3

Course Typically Offered: Spring

CSDS 170. Comparative Linguistic Analysis in Sign Language Interpreting
Prerequisites: grade of C or better in CSDS 136, CSDS 166, and CSDS 169. Emphasis on the development of the communication skills to compare, analyze, and produce equivalent messages between sign language and spoken English in professional settings.
Units: 3

Course Typically Offered: Spring

CSDS 171. Professional Writing in Communicative Disorders and Deaf Studies
Select one of the following prerequisites: CSDS 105, CSDS 106, or CSDS 109. Principles of clinical and scientific writing in communicative disorders; exercises in writing professional and scientific reports.
Units: 3

Course Typically Offered: Fall

CSDS 172. Neural Bases of Speech, Language, and Hearing
Prerequisites: A minimum 3.0 GPA in CSDS 80, CSDS 95, CSDS 101, CSDS 102 with a grade of C or better in each course. Neuroanatomical and neurophysiological bases of speech, language, and hearing; clinical implications of neuropathology.
Units: 3

Course Typically Offered: Spring

CSDS 175I. Internship in Interpreting
Prerequisites: permission of instructor. CSDS 169 or CSDS 170. Interpreting under supervision in professional settings such as: artistic, educational, health, legal, medical, mental health, rehabilitation, and social services settings. CR/NC grading only. FS (Formerly CSD 175)
Units: 1-3

Course Typically Offered: Fall, Spring

CSDS 188T. Topics in Communicative Disorders and Deaf Studies
Special courses offered on various topics not included in the regular curricula in speech, language, and hearing sciences and disorders.
CSDS 188T. California Educators of the Deaf Conference in Fremont, CA
Course supplements DEPP federal grant to provide mentoring, community outreach, aid recruitment of students to Deaf education, and increase student participation in the Deaf Education community. Students will attend the California Educators of the Deaf and Hard of Hearing (CAL-ED) professional conference, March 20-22, 2020, meet Fresno State Deaf Education alumni and other professionals in the field, participate in mentoring opportunities, contribute volunteer community service hours, and assist in recruiting activities. (Offered Spring 2020)
Units: 1

CSDS 188T. Sport, Personification, and Academic ASL
The 1.5 days of workshop will cover topics necessary for interpreters in Educational settings, including vocabulary for sports and academics, and the ASL linguistic feature of personification. (Offered Spring 2020)
Units: 1

CSDS 190. Independent Study
See Academic Placement.
Units: 1-3
Course Typically Offered: Fall, Spring

CSDS 200. Graduate Studies and Research Methods in Communicative Disorders
Prerequisite: statistics (PH 92 or equivalent). Introduction to graduate studies and methods of research in communicative disorders; concepts and methods of science and clinical research designs; graduate level professional and scientific writing skills.
Units: 3

CSDS 201. Supporting Families with D/HH Children
Theory and practice in interviewing and counseling students and families related to specific language, speech, and hearing loss. Techniques for altering and modifying behaviors that affect maximum growth and potential students and their families.
Units: 3

CSDS 202. Aural Rehabilitation
Prerequisites: CSDS 128, CSDS 131. Habilitative and rehabilitative procedures to assist people with hearing loss: amplification, speech-reading, auditory training, speech and language training; psycho-socio-educational issues. (Formerly CDDS 202)
Units: 3

CSDS 203. Graduate Studies and Research Methods in Deaf Studies
Prerequisites: statistics (PH 92 or equivalent). Introduction to graduate studies and methods of research in deaf studies; concepts and methods of science and research designs; graduate level professional and scientific writing skills. (Formerly CDDS 200).
Units: 3

CSDS 204. Seminar in Stuttering
Prerequisite: permission of instructor. Research on stuttering in children and adults; assessment and treatment procedures.
Units: 3

CSDS 206. Audiology for Teachers of D/HH Students
Prerequisites: CSDS 128, CSDS 131. Habilitative and rehabilitative procedures to assist students with hearing loss: amplification, speech-reading, auditory training, speech and language training; psycho-socio-educational issues.
Units: 3

CSDS 207. Seminar in Neurogenic Language Disorders
Prerequisite: CSDS 172. Demography, etiology, and symptomatology of aphasia, traumatic brain injury, and dementia; medical and communication assessment; treatment and treatment efficacy research.
Units: 3

CSDS 209. Professional Issues in Communicative Disorders
Corequisite: CSDS 257. Seminar in professional issues in communicative disorders; the Code of Ethics and Scope of Practice; trends in professional practice; license, certification, and credentialing requirements; advanced certifications; local, state, and national regulations and policies relevant to professional practice.
Units: 1

CSDS 210. Seminar in Communicative Disorders with Orofacial Anomalies
Prerequisite: permission of instructor. Etiology and symptomatology of cleft palate and other orofacial syndromes in children; medical and communication assessment and treatment procedures.
Units: 3

CSDS 213. Seminar in Motor Speech Disorders
Prerequisites: CSDS 102, CSDS 172. Etiology and symptomatology of apraxia, and dysarthria; assessment and treatment.
Units: 3
CSDS 214. Seminar in Child Language Disorders
Prerequisites: CSDS 95, CSDS 109. Etiology, symptomatology, assessment, and habilitation of language disorders in infants, children and adolescents.
Units: 3

CSDS 215. Graduate Seminar in Speech Sound Disorders in Children
Units: 3

CSDS 216. Seminar in Voice Disorders
Information addressing significant clinical, theoretical, and scientific issues in the study, diagnosis, and treatment of voice disorders in children and adults. Presentation of case studies. Analysis of current research.
Units: 3

CSDS 218. Autism Spectrum Disorders and Augmentative or Alternative Communication
Characteristics and possible etiologies of autism spectrum disorders, their assessment, diagnosis, and treatment. The design, selection, and use of augmentative and alternative methods of communication; the populations for which they are appropriate; and issues related to the assessment and treatment.
Units: 3

CSDS 220. Introduction to Dysphagia and Traumatic Brain Injury
Introduction to assessment and treatment of dysphagia and cognitive and communicative disorders associated with traumatic brain injury (TBI). Anatomy and physiology as it relates to normal and disordered swallowing, consequences of TBI, and recovery from TBI.
Units: 3

CSDS 221. Seminar in Advanced Clinical Methods for Dysphagia and Traumatic Brain Injury
Prerequisite: CSDS 220. Assessment and treatment of dysphagia and cognitive-communication problems associated with traumatic brain injury (TBI) in the following populations: pediatrics, combat veterans with TBI/PTSD, and medically complex or tracheostomized patients. Numerous opportunities to evaluate MBSS, review case studies, develop treatment plans, and create therapy materials.
Units: 3

CSDS 230. Advanced Clinical Practice in Speech-Language Pathology
Prerequisites: Graduate standing in CSDS. Supervised clinical practice in the diagnosis and treatment of communicative disorders; development of treatment programs, parent counseling; referrals; on- and off-campus clinical sites. CR/NC grading only. (Lab Fee $10)
Units: 1-6

CSDS 250. Advanced Clinical Practice: Audiology
Prerequisites: Supervised clinical practice in diagnosis and management of hearing problems. CR/NC grading only. No enrollment after any two semesters with a grade of NC unless approved by department Chair.(Lab fee, $10)
Units: 1-6

CSDS 255. Assessment of D/HH Students
Prerequisite: permission of instructor. In-depth examination of psychological, achievement, language, communication, and diagnostic assessment tools and unique administration procedures used with deaf children and youth, including an extensive independent child/ youth study and evaluation, shared through discussions, student presentations, and written form.
Units: 3

CSDS 257. Student Teaching: Speech-Language Pathology
Prerequisites: 5-15 units of CSDS 230; admission to the credential program; corequisite: CSDS 209. Directed observation, participation, and clinical practice (100 hours minimum) under supervision. CR/NC grading only. No enrollment after any two semesters with a grade of NC unless approved by department Chair. (Formerly AS 164A; CD 164A; CSD 164A) (CSU liability insurance fee, $8)
Units: 1-9

CSDS 258. Student Teaching: Deaf and Hard-of-Hearing
Prerequisites: CSDS 206, CSDS 255, CSDS 262, CSDS 263, CSDS 264, 2-12 units of CSDS 248, permission of instructor; CSET must be taken and passed. Teaching under supervision in a class for deaf or hard-of-hearing children and youth. Directed observation, participation, and weekly conference with university supervisor. CR/NC grading only. (Formerly CD 164B; CSD 164B) (CSU liability insurance fee, $8)
Units: 6-12

CSDS 260. Advanced Clinical Practice: Deaf Education
Prerequisites: CSDS 138, CSDS 162, CSDS 163, CSDS 164. Supervised clinical participation and practice in teaching deaf and hard-of-hearing children and youth; parent counseling; on- and off-campus clinical sites. CR/NC grading only. (Lab fee, $10) (CSU liability insurance fee, $8)
Units: 1-6
CSDS 262. Spoken Language Development for Teachers of D/HH Students
Prerequisites: CSDS 206, permission of instructor. Methods to develop oral communication for deaf and hard-of-hearing students; demonstration and off-campus practicum. (2 lecture, 2 lab hours)
Units: 3

CSDS 263. Seminar in Language Development and Instruction for D/HH Students
Prerequisites: CSDS 248, permission of instructor. Language problems of deaf and hard-of-hearing children and youth; techniques of remediation; use of specialized equipment and development of teaching materials. (2 lecture, 2 lab hours)
Units: 3

CSDS 264. Curriculum and Instruction for D/HH Students
Prerequisites: CSDS 248 and permission of instructor. Special problems and techniques of adapting pre-K-12 school curriculum and instruction to the needs of deaf and hard-of-hearing children and youth; demonstration and practice. Project required.
Units: 3

CSDS 267. Externship in Speech-Language Pathology
Prerequisites: 5-15 units of CSDS 230 and permission of instructor. Supervised externship in speech-language pathology; diagnosis and management of communicative disorders. CR/NC grading only. No enrollment after any two semesters with a grade of NC unless approved by department Chair. (CSU liability insurance fee, $8)
Units: 1-9

CSDS 268. Externship with Deaf Children and Youth
Prerequisites: CSDS 202, CSDS 255, CSDS 258, CSDS 262, CSDS 263, CSDS 264, 2-12 units of CSDS 260, permission of instructor; CSET must be taken and passed. Supervised externship in a residential school for deaf children and youth. Full time in residence for 8 weeks. CR/NC grading only. (CSU liability insurance fee, $8)
Units: 6

CSDS 278. Application of Theory into Practice in Deaf Education
Supervised field experience workign with deaf and hard-of-hearing students with an emphasis on the intergration of applied research and theorory into practice. Development of an induction plan will include the candidate, university supervisor, and school district representative where the candidate is employed. CR/NC grading only.
Units: 3

CSDS 279. Induction Plan-based Field Experience in Deaf Education
Prerequisites: CSDS 278. Final supervised field experience working with deaf and hard-of-hearing students with an emphasis on self-assessment, goal-setting, and other induction plan components. Support is provided through collaboration between university and school district personnel.
Units: 3

CSDS 290. Independent Study
See Academic Placement. Approved for RP grading.
Units: 1-3

CSDS 292. Seminar in Advanced Clinical Methods in Communicative Disorders
Prerequisites: Completion of CSDS 200 and two graduate seminars. Advanced review of clinical methods, research trends, and recent developments in assessment and treatment procedures with emphasis on language disorders in adolescents and young adults. Required for non-thesis/project SLP graduate students.
Units: 3

CSDS 298. Individual Research Project
Prerequisite: consent of advisory committee. A written report on an individual or group research project for the master's degree. Approved for RP grading. (Formerly C D 298)
Units: 1-6

CSDS 298C. Project Continuation
Pre-requisite: Project CSDS 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

CSDS 299. Thesis
Prerequisite: Preparation and submission of a thesis. Approved for RP grading.
Units: 2-6

CSDS 299C. Thesis Continuation
Pre-requisite: Thesis CSDS 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0


VITICULTURE & ENOLOGY

ENOL 15. Introduction to Enology
History and development of the wine industry; mechanics of various processes and factors affecting wine quality and consumer acceptance.
Units: 3
Course Typically Offered: Fall, Spring

ENOL 45. Wine Evaluation Techniques
Parameters that determine sensory quality in wines. Wine appreciation. Critical evaluation of wines including premium varietals. Must be 21 years of age - State law. (1 lecture, 2 lab hours) (Course fee: $50) (Formerly ENOL 25)
Units: 2
Course Typically Offered: Fall, Spring

ENOL 105. Advanced Sensory Evaluation of Wines
Prerequisites: ENOL 45, ENOL 110. Factors affecting the quality of wines in terms of growing region, grape maturity, harvesting, vinification, cellaring, blending, and storage practices; attributes and defects in premium varietals. Statistical concepts. (2 lecture, 2 lab hours) (Course fee: $40)
Units: 3
Course Typically Offered: Fall, Spring

ENOL 110. Grape and Wine Chemistry
Prerequisite: CHEM 150 or taken concurrently. Biosynthesis of grape-based compounds through fundamental chemical concepts of wine production and aging. Chemical processes that contribute to final wine composition, how grape and wine production practices can be used to manage composition.
Units: 3
Course Typically Offered: Spring

ENOL 115. Analytical Methods for Wine I
Corequisite: ENOL 164; prerequisite: ENOL 110 and CHEM 105 (may be taken concurrently) or permission of instructor. Fundamental principles and practices of methods of analysis for grape juice and wine during crush. Emphasis on practical laboratory procedures (2 lecture, 4 lab hours)
Units: 4
Course Typically Offered: Fall

ENOL 125. Wine Microbiology
Prerequisites: ENOL 15, ENOL 110; CHEM 150. Identification, physiology, and biochemistry of bacteria and yeasts involved in winemaking and spoilage of wines. Vinous and malo-lactic fermentations. Sherry organisms and other film yeasts. (2 lecture, 6 lab hours)
Units: 4

ENOL 140. Regulations: Wine and Brandy
Prerequisites: ENOL 15. Rules and regulations concerning wine and brandy licensing; recordkeeping; production; taxation; enological practices; rule making; labeling. Interstate and international commerce. Export requirements.
Units: 2
Course Typically Offered: Spring

ENOL 151. Winery Equipment
Prerequisites: ENOL 15, ENOL 110; CHEM 150. Identification, physiology, and biochemistry of bacteria and yeasts involved in winemaking and spoilage of wines. Vinous and malo-lactic fermentations. Sherry organisms and other film yeasts. (2 lecture, 6 lab hours)
Units: 2
Course Typically Offered: Spring

ENOL 162T. Topics in Enology and Fermentation Science
Prerequisite: ENOL 15. Topics in winemaking and fermentation science. Some topics may include labs.
Units: 1-4

ENOL 162T. Plant and Yeast Biochemistry
Introductory concepts of biochemical macromolecules and structures related to the function of grape vines, yeast, and winemaking. (Offered Spring 2020)
Units: 3

ENOL 163. Fermentation
Prerequisite: ENOL 15 (may be taken concurrently). Vinification/Fermentation Laboratory practice at the university's Enology Pilot Plant and Ag Lab Winery. Individual winemaking. Students must supply their own grapes. (1 lecture, 5 lab hours)
Units: 3

ENOL 164. Wine Analysis and Production
Corequisite: ENOL 115. Prerequisites: CHEM 105; ENOL 110; ENOL 151; ENOL 163. Only open to Enology and viticulture students. Laboratory and winery experience in winemaking operations, including harvest, scheduling, crushing, fermentation, safety, sanitation procedures, record keeping, analysis, and operation of enology facility equipment. Safety equipment required. (2 lecture, 6 lab hours)
Units: 4

ENOL 166. Cellar Operations
Prerequisite: ENOL 115, ENOL 164 (must be taken the previous semester). Survey of cellaring operations and equipment. Analytical methods, blending, fining, ion exchange, finishing, and bottling. (2 lecture, 3 lab hours; local field trips)
Units: 3
Course Typically Offered: Spring

ENOL 170. Wine Business
Prerequisite: AGBS 1. Theory and practice of wine business practices. Develop understanding of the following areas: business plan development, organizational structure, human resources, entrepreneurship, family business, government regulation, management of technology, financial management and social responsibility. (2 lecture, 2 activity hours)

Units: 3
Course Typically Offered: Spring

ENOL 173. Wine Marketing
Prerequisites: ENOL 45. Marketing principles as applied to wine. Role of wholesalers, distributors, retailers, cooperatives. Advertising. Regulations. Interstate and international trade. (2 lecture, 2 activity hours)

Units: 3

ENOL 175. Winery Management
Prerequisites: ENOL 15 and permission of instructor. Physical properties of a winery; administrative organizational set-up; personnel; purchasing, packaging and shipping; local, state, and federal regulatory statutes.

Units: 3
Course Typically Offered: Spring

ENOL 180. Undergraduate Research
Prerequisite: ENOL 164. Open to juniors or seniors with permission of instructor. Exploratory work on a suitable agricultural problem in enology. Approved for RP grading.

Units: 1-4
Course Typically Offered: Fall, Spring

ENOL 190. Independent Study
See Academic Placement -- Independent Study. Approved for RP grading.

Units: 1-3
Course Typically Offered: Fall, Spring

ENOL 194I. Wine Industry Internship
Prerequisite: permission of instructor. Field experience in a career specialty that integrates with classroom instruction. Requires written reports of knowledge and experience gained. CR/NC grading only.

Units: 2-4
Course Typically Offered: Fall

ENOL 199. Undergraduate Seminar
Oral presentations of topics of current interest in enology, wine grapes, and fermentation science.

Units: 1, Repeatable up to 2 units

Course Typically Offered: Fall

VEN 210. Grape and Wine Chemistry
Prerequisite: CHEM 150. Mechanistic basis for the chemistry and biochemistry of vines, grapes, yeast and bacteria used in winemaking, wine spoilage, and health issues of alcohol and wine. Critical evaluation of the literature pertaining to the above subjects.

Units: 4

VEN 229. Graduate Seminar
Prerequisite: permission of the instructor. Oral presentation on topics of current interest in viticulture and enology. Develops skills in critical review and analysis of current literature and recent advances.

Units: 1, Repeatable up to 2 units

VEN 250T. Topics in Viticulture and Enology
Prerequisites: Admission to a graduate program in the College of Agriculture Sciences and Technology and permission of the instructor. Advanced studies of current topics in viticulture and enology selected by instructor. Students will be required to prepare oral and written presentations demonstrating an in-depth understanding of the chosen topic(s). Participation in classroom discussion will be required as part of the grade.

Units: 1-3

VEN 250T. Data Analysis and Predictive Modeling in R
Data analysis and predictive modeling in R for agricultural sciences. (Offered Spring 2020)

Units: 2

VEN 280. Research in Viticulture and Enology
Prerequisite: AGRI 200 and AGRI 220. History, current trends, and modern methodology for research in Viticulture and Enology. Exposure to funding opportunities and dissemination of research results in the grape and wine industry. This course will also involve critical evaluation of published literature on grape and wine research.

Units: 2

VEN 290. Independent Study
See Academic Placement - Independent Study. Approved for RP grading.

Units: 1-3

VEN 299. Thesis

Units: 4
VEN 299C. Thesis Continuation
Pre-requisite: Thesis 298. For continuous enrollment while completing the thesis. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

VIT 1. World Viticulture
Origin and distribution of European (Old World) grapevines and their "New World" relatives. The use of grape and grape products in various regions of the world. Not open to viticulture or enology majors. S
Units: 3
Course Typically Offered: Spring

VIT 101. General Viticulture I
Prerequisite: BIOL 11 and BIOL 161. Current status and future of the grape industry. Characteristics and identification of leading raisin, table, wine and rootstock varieties. Growth and physiology of the grapevine. Climatic and soil requirements for grape growing. Principles and practices of grapevine nutrition. (2 lecture, 3 lab hours)
Units: 3
Course Typically Offered: Fall

VIT 102. General Viticulture II
Prerequisite: BIOL 11 and BIOL 161. Planning of new vineyards. Vine propagation, planting, training, and trellis systems. Recent developments in viticultural practices, with emphasis on raisin, table, and wine grape production. (2 lecture, 3 lab hours)
Units: 3
Course Typically Offered: Spring

VIT 103. Raisin Production and Processing
Prerequisite: VIT 101 and VIT 102. Principles and practices of raisin production; sun drying, mechanical dehydration, on-the-vine drying; new raisin processes to produce new products. (1 lecture, 3 lab hours) F
Units: 2
Course Typically Offered: Fall

VIT 105. Production and Marketing of Table Grapes
Prerequisite: VIT 101 and VIT 102. An overview of the table grape industry in California. Major table grape growing regions in the world, U.S., and California. Varietal adaptation to climate and soils. Cultural practices and vineyard management. Post-harvest technology and marketing strategies. Field trips. (1 lecture, 3 lab hours) S
Units: 2

VIT 106. Winegrape Production
Prerequisite: VIT 101 and VIT 102. Advanced viticulture course in the science of winegrape production. Covers the basics and advanced technology of winegrape growing for wine production. (1 lecture, 3 lab hours)
Units: 2
Course Typically Offered: Fall

VIT 160. Mechanized Viticulture
Prerequisite: MEAG 3 or equivalent (may be taken concurrently). Provides detailed description of the machinery used to establish vineyards, carry out cultural practices, and harvest grapes for production of wine grapes, raisins, and table grapes. Objective is to provide student with an understanding of machinery designed for grape production and the principles of machinery operation. (2 lecture, 3 lab hours) S
Units: 3
Course Typically Offered: Spring

VIT 162T. Topics in Viticulture
Prerequisite: junior standing. Oral presentations by invited speakers on topics of current interest in viticulture.
Units: 1-4

VIT 162T. Introduction to Viticulture
This course provides an introduction to viticulture, covering origin and distribution of grapevines; anatomy, morphology and phenology of grapevines; uses and products of grapes; grape production of the world, USA, and California; basics of cultivars, rootstocks, and cultural practices for producing wine grapes, table grapes, and raisins. (Offered Spring 2020)
Units: 3

VIT 162T. Management of Grape Diseases, Disorders, and Pests
This course provides an in-depth study of grapevine abnormalities. The identification of grapevines specific fungal diseases, bacterial infections, virus infections, grape pests and abnormalities related to environmental and physical conditions are covered. Deficiencies and toxicity of nutrients, herbicide damage and genetic mutations are discussed to help students identify pest and disease symptoms from environmental effects. California is used as an example to explain, plan and monitor the calendar of events for spray programs. Integrated Pest Management specific to wine, table and raisin grapes are covered. (Offered Spring 2020)
Units: 3

VIT 165. Grape Varieties and Rootstocks
Prerequisite: VIT 101 and VIT 102. Taxonomy and ampelography of the grapevine with emphasis on genus, species, varieties, and clones. Identification, viticultural
VIT 180. Undergraduate Research
Prerequisite: VIT 101 and VIT 102 or with permission of instructor. Open to juniors or seniors with permission of instructor. Exploratory work on a suitable agricultural problem in viticulture. Approved for RP grading.
Units: 1-4
Course Typically Offered: Fall, Spring

VIT 190. Independent Study
See Academic Placement-Independent Study. Approved for RP Grading
Units: 1-3
Course Typically Offered: Fall, Spring

VIT 194I. Grape and Wine Industry Internship
Prerequisite: Permission of instructor. Field experience in career specialty that integrates with classroom instruction. Written reports of knowledge and experience gained are required. CR/NC grading only.
Units: 2-4

VIT 196. Viticulture Projects
Prerequisite: MEAG 3 or MEAG 5; and VIT 101 and VIT 102. Knowledge gained from classroom instruction applied to vineyard conditions. Students will be assigned to a block in the university vineyard and participate in cultural practices and marketing the crop. This course must be taken twice to complete the project. Approved for RP grading and CR/NC grading only.
Units: 2, Repeatable up to 4 units
Course Typically Offered: Fall, Spring

VIT 199. Viticulture Seminar
Seminar format in which professionals in the grape and wine industry will make 30 to 40 minute presentations. Afterwards, there will be five to 10 minutes reserved for questions. The seminars are intended to elicit considerable interaction among participants. The setting is informal. (Formerly VIT 162T)
Units: 1, Repeatable up to 4 units
Course Typically Offered: Fall

WS 10. Introduction to Women's Studies
Prerequisite: GE Foundation A2 for students in English college-readiness Category III and IV. Interdisciplinary course designed to introduce students to the major social, cultural, economic, and political forces which define gender in society. G.E. Breadth D3.
Units: 3
Course Typically Offered: Fall, Spring

GE Area: D3

WS 12. Critical Thinking: Gender Issues
Theory and practice in basic skills of critical thinking using examples about the intersections of gender with race and class. Skills will be demonstrated and assessed through oral and written performance. G.E. Foundation A3.
Units: 3
Course Typically Offered: Fall, Spring

GE Area: A3

WS 18. Women and Aging
(WS 18 same as GERON 18.) Interdisciplinary course designed to facilitate the understanding of older women and the physiological, psychological, and social aspects of the aging process. G.E. Breadth E1. (Formerly WS 118)
Units: 3
Course Typically Offered: Fall

GE Area: E1

WS 55T. Topics in Women's Studies
Topics of current interest in the Women's Movement, covering a wide variety of issues. (See Schedule of Courses for specific topics.)
Units: 1-4

WS 101. Women in History
(HIST 101 same as WS 101) Prerequisite: G.E. Foundation and Breadth Area D. Historical survey of women's roles in history, with an emphasis on the emergence of the feminist movement. G.E. Integration ID
Units: 3
GE Area: ID

WS 102T. Jewish Women and U.S. Popular Culture
A study of representations of and texts by Jewish women in U.S. popular culture. (Offered Spring 2020)
Units: 3

WS 102T. Women and Revolution, Revolutionary Women
This course is an interdisciplinary exploration into the political theory and historical experience of the political concept of "revolution" through the lens of feminism and experiences of women. Using key historical moments as backdrop, topics include: the view of women in major strains of revolutionary theory; revolutionary theory written by women; women as political actors during revolutions; symbolic and media use

WS 102T. Topics in Women's History
(HIST 102T same as WS 102T.) (See Schedule of Courses for specific topics.)
Units: 3, Repeatable up to 6 units

WS 102T. Jewish Women and U.S. Popular Culture
A study of representations of and texts by Jewish women in U.S. popular culture. (Offered Spring 2020)
Units: 3

WS 102T. Women and Revolution, Revolutionary Women
This course is an interdisciplinary exploration into the political theory and historical experience of the political concept of "revolution" through the lens of feminism and experiences of women. Using key historical moments as backdrop, topics include: the view of women in major strains of revolutionary theory; revolutionary theory written by women; women as political actors during revolutions; symbolic and media use

WS 102T. Women and Revolution, Revolutionary Women
This course is an interdisciplinary exploration into the political theory and historical experience of the political concept of "revolution" through the lens of feminism and experiences of women. Using key historical moments as backdrop, topics include: the view of women in major strains of revolutionary theory; revolutionary theory written by women; women as political actors during revolutions; symbolic and media use
of women during revolutions; the impacts of revolutions on women; the salience and critique of the idea of revolution for feminism(s), both in the past and today. (Offered Spring 2020)

Units: 3

WS 103. History of Feminism
Survey of history of feminist thought and action from Middle Ages to present, with emphasis on nineteenth and twentieth centuries and major actors and debates.

Units: 3
Course Typically Offered: Spring

WS 107. Women in US Politics
(WS 107 same as PLSI 107). Prerequisites: at least one 3 unit WS or PLSI course. The course examines how women have shaped and been shaped by U.S. politics along with how gender impacts U.S. political thought, institutions, and practices.

Units: 3
Course Typically Offered: Spring

WS 108. Rape
An inquiry into the phenomenon of rape, myths about rape and rapists, treatment of rape victims, discussion of physical and psychological preparation for possibility of attack. Lecture, film, paper, speakers. An all-day workshop held on two consecutive Saturdays.

Units: 1
Course Typically Offered: Fall

WS 109. Incest
An exploration of the victim, the victimizer, and the family dynamics of incest, as well as the psychological and sociological implications of the family secret. An all-day workshop held on two consecutive Saturdays.

Units: 1
Course Typically Offered: Fall

WS 110. Representations of Women
Prerequisites: G.E. Foundation and Breadth Area D. Interdisciplinary course focusing on representations of women; how representations vary by class, race, ethnicity, and sexual orientation; and how these representations affect social, political, and economic behaviors and institutions. Multicultural/International M/I.

Units: 3
Course Typically Offered: Fall, Spring

WS 112. Assertiveness Training
Women's special needs in becoming assertive; blocks preventing assertion and methods of getting around them. An all-day workshop held on two consecutive Saturdays.

Units: 1

WS 114. Marriage and Family Politics
Examines contemporary and historical marriage and family formations, including the ways public policies, laws and a variety of social institutions regulate the domestic sphere. Explores how women resist and re-work dominant understandings of marriage and family.

Units: 3

WS 115. Women, Children & Alcohol
Covers impact of addiction on women and children using a systems perspective.

Units: 1

WS 116. Domestic Violence
An historical and cultural overview of the battered and battering spouse syndromes; the marriage contract as a license to abuse; the status of remedial legislation; and, the effect of parental battering on children. An all-day workshop held on two consecutive Saturdays.

Units: 1
Course Typically Offered: Spring

WS 120. Women of Color in the United States
Examines the role and status of U.S. women of color within the larger social structure. Women in varying family structures and cultural settings will be examined, with an emphasis on how social systems shape the roles of women and affect larger U.S. institutions. Multicultural/International M/I.

Units: 3
Course Typically Offered: Spring

WS 120S. Women of Color in the United States
Examines the role and status of U.S. women of color within the larger social structure. Women in varying family structures and cultural settings will be examined, with an emphasis on how social systems shape the roles of women and affect larger U.S. institutions. S sections include a service-learning requirement. Multicultural/International M/I.

Units: 3
Course Typically Offered: Spring

WS 125. Introduction to Lesbian/Gay Studies
Introduction to theory, questions, and topics in interdisciplinary lesbian and gay studies.

Units: 3
Course Typically Offered: Spring

WS 126. Women and Violence: Public Policy and the Law
(CRIM 126 same as WS 126.) Historical and contemporary issues in public policy responses to violence against women. Gender bias in the legal system and policing violence against women. Theory and research on problems in government policy and enforcement of the law.

Units: 3
Course Typically Offered: Fall
WS 127. Female Sexuality  
(PH 127 same as WS 127.) Studies on female sexuality which include past and present sexual roles, female sexual response patterns, and discussion of common problems encountered by women functioning as sexual beings.

Units: 3

Course Typically Offered: Spring

WS 130. Women's Health  
(PH 130 same as WS 130.) Examines current crises/controversies in women's health care. Includes conventional/alternatives approaches to treatment, management, and prevention with emphasis on self-care and promotion of optimum health.

Units: 3

WS 132. Women and Work  
(SOC 132 same as WS 132.) An examination of women and work in contemporary society including housework, labor force participation, employment in various occupations, and career planning.

Units: 3

WS 135. Women In Cross-Cultural Perspective  
Prerequisites: G.E. Foundation and Breadth Area D. Examines economic, social, political, and cultural roles as well as current status of women in one or more of the following: China, Southeast Asia, South Asia, Africa, Middle East, and Latin America. Prepares students to function in an international, multicultural world. Multicultural/International M/I.

Units: 3

Course Typically Offered: Fall, Spring

WS 136T. Topics in International Women's Studies  
Examines how global economic and cultural processes affect women. Investigates the interconnections between "first" and "third" worlds through topics such as international division of labor, work and gender ideologies, and women's organized resistance to changes in local economies. (Formerly WS 150T)

Units: 3, Repeatable up to 9 units

WS 136T. Intl Feminism

Units: 3

WS 137. African American Women  
(AFRS 137 same as WS 137.) An overview of the accomplishments of African American women in the United States; their contributions to American culture; African influence; African American women as defined by a dominant society vs. legitimate definition designed to encourage a positive self-concept.

Units: 3

WS 138. Asian American Women  
(ASAM 138 same as WS 138) Addresses race, ethnic, and class issues from the vantage point of Asian American women. For Asian American and Southeast Asian communities, the status of women has long been neglected. Yet women play an important role in the family and its economy even as they enter new roles in U.S. society. Helpful to students in sciences and applied fields.

Units: 3

WS 139. Chicana Women in a Changing Society  
(CLAS 162 same as WS 139) Focuses on current issues relevant to Chicana women in the workforce, the family, the health care system, and the educational system. The intersection of race, class, and gender will be the analytical context for examining both their historical and contemporary roles.

Units: 3

Course Typically Offered: Fall

WS 140. Politics of Latina Health and Size  
Introduction to the politics of Latina health and size, focusing on reproduction, fitness and fatness, and illness through the study of first person narratives, popular media, and health campaigns. (Formerly WS 150T)

Units: 3

WS 141. The Chicano Family  
(CLAS 141 same as WS 141.) Traditional and changing relationships in the family structure of the Chicano; interaction with wider institutional social system. (Formerly CLAS 152).

Units: 3

WS 143. Feminist Theory  
Review of major feminist theories of the twentieth and twenty-first centuries, analysis of assumptions underlying each, evaluation of strengths and weaknesses of each, and examination of relationship of various theories to various women's life experiences.

Units: 3

Course Typically Offered: Fall

WS 148. Women and Religion  
Seminar to explore many facets of women's religious experience, including history of women in institutional churches, theologies of liberation and oppression, women's religious experience, and feminist spirituality.

Units: 3

WS 149. Gender Law & Social Policy  
Prerequisites: G.E. Foundation and Breadth Area D. Survey of the impact of feminist legal theory, critical race feminism, and
queer theory on the law, the legal system, and social policy.
GS. Introduction to Women's Studies
(Formerly WS 150T)
Units: 3
Course Typically Offered: Fall
GE Area: ID

WS 150T. Topics in Women's Studies
Topics of current interest in the women's movement, covering
a wide variety of issues. (See Schedule of Courses for specific
topics.)
Units: 1-4

WS 151T. Topics in Lesbian/Gay Studies
Topics in lesbian and gay studies, drawing upon areas such as
history, sociology, literature, psychology, or interdisciplinary
fields.
Units: 1-3

WS 153. Feminist Research Methods
Pre-requisites: Either WS 10, WS 103, WS 110, WS
120, WS 135 or WS 143. Introduction to quantitative and
qualitative research methods. Hands-on practice of designing
and conducting a research project and writing a grant.
Units: 3
Course Typically Offered: Fall

WS 160. Feminist Issues in Counseling
Prerequisite: WS 10 or permission of instructor. Evaluates
counseling theories; individual and group counseling
methods; examines ethical issues and power structure in
therapeutic settings; surveys community resources; and
explores innovative and feminist perspectives concerning the
effective treatment of women.
Units: 3

WS 162. Community Service in Women's Studies
Prerequisite: 9 hours of WS courses and permission
of instructor and agency. Individual experience relating
classroom studies to experience in a women's community
service agency. CR/NC grading only. (Minimum of 3 field
hours per unit.)
Units: 1-3

WS 163. Consciousness Raising: Group Leader
Prerequisite: permission of instructor. Students learn skills
in facilitating group discussion of women's issues through
training and practicum. CR/NC grading only.
Units: 1, Repeatable up to 2 units

WS 168T. Women and Literature
(WS 168T same as ENGL 168T.) Prerequisite: ENGL 20.
Discussion and written analysis of literature by and about
women. Special emphasis on 19th and 20th Century authors
including the Brontes, George Eliot, Emily Dickinson, Edith
Wharton, Virginia Woolf, and contemporary writers.
Units: 4, Repeatable up to 8 units
Course Typically Offered: Spring

WS 170. Sex, Gender, Biology and Culture
(ANTH 118 same as WS 170.) A cross-cultural and
interdisciplinary analysis. Examines theories and frameworks
from across the five-fields of anthropology that explain
variations in the expression and human experience of sex,
gender, and sexuality, maturation, reproduction, and the life
cycle. Also explores how biology shapes culture and how
culture shapes biology.
Units: 3

WS 172. Transnational Feminisms: Histories, Foundations,
and Debates
Prerequisites: One of the following courses: WS 103, 125, 143,
153 or 175. Transnational Feminisms examines the histories,
foundations, and current debates among transnational feminists
globally. The course content examines transnational feminists
critiques of and responses to global expansion projects and
their local impacts on women, negatively racialized, and
gender non-conforming peoples.
Units: 3
Course Typically Offered: Fall

WS 175. Feminist Activism
Primarily for women's studies majors and minors. Prerequisite:
15 units in women's studies or permission of instructor. Course
investigates strategies and mechanics of feminist activism.
Students complete a variety of applied projects, including
service learning with a local feminist organization. S sections
include a service-learning requirement
Units: 3
WS 194T. Seminar in Women and Literature
(ENGL 194T same as WS 194T.) May be substituted for ENGL 193T in the English major; no more than 12 units of ENGL 193T-ENGL194T applicable to the major. Sections designated by topic. Individual projects; reading, discussion, and writing papers on individual women writers or some aspect of women in literature; for example, Doris Lessing, Myth and Archetypes of Women. ENGL 194T should ordinarily not be taken until 3 upper-division courses in English have been completed.
Units: 4, Repeatable up to 8 units

WS 195. Diversity in the United States: Race and Gender Issues
(See A I S 195, AF AM 195, ASAM 195, CLS 195.) This interdisciplinary course introduces students to theoretical perspectives concerning the historical development of class, race, and gender within the United States and the impact of these issues on contemporary U.S. society. Participation in a special class project is required.
Units: 3

GS 298C. Project Continuation
Pre-requisite: Project 298. For continuous enrollment while completing the project. May enroll twice with department approval. Additional enrollments must be approved by the Dean of Graduate Studies.
Units: 0

GSCC 220. The Community College as an Institution
This course will analyze the community college as an institution. Emphasis will be on faculty responsibilities in the area of curriculum content and institutional governance, including student support services and issues of retention and matriculation methods.
Units: 2

GSCC 221. The Community College Student
This course explores the cultural, sociological, economic and political factors that affect learning and success in the community college classroom. Participants learn to recognize the factors that affect student success and implement strategies to enhance cross-cultural understanding within classrooms.
Units: 2

GSCC 223. Effective Community College Teaching and Classroom Communication Strategies
This course will examine various instructional techniques specific to the community college. This course will also examine the unique characteristics of the classroom as a communication context. Participants will apply theory to practice of effective lecture, discussion and collaborative lessons.
Units: 2

GSCC 224. Curriculum, Instruction and Assessment at the Community College
This course introduces students to fundamental theories of curriculum, curriculum development and approval processes, transfer course curriculum and program review. Participants will learn to use and adapt assessment instruments to meet the needs of a diverse student population.
Units: 3

GSCC 225. Sponsored Experience at the Community College
The field experience promotes adherence to high standards of professional conduct, effective cooperation and professional development through self-assessment and collegial interactions with other members of the profession. Participants must complete all coursework prior to being approved for field placement.
Units: 3