**SELECTED TOPICS (Summer 2011 through Spring 2013)**

*Selected topics courses are academic credit-bearing courses in the Cal Poly catalog that provide a generic course vehicle to offer special topics on an "as needed basis." The most common selected topics courses, 270, 470, 471, 570, 571, are available to all academic programs, and have the same generic course description.*

*The specific topic title appears in the Class Schedule and on the students' transcripts*.

AERO 470 Interdisciplinary Senior Project I, II, III (1) (1) (1) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society, and ethical considerations.

AERO 471 Interdisciplinary Senior Project Lab I, II, III (2) (2) (2) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society, and ethical considerations.

ANT 470 Meaning, Gender, and Identity in Anthropological Theory (4) *Effective Spring 2013*

Exploration of the intersection of anthropological theory with meaning, gender/sexuality, and identity formations within and between cultural contexts. Situate and analyze anthropological discourses regarding social meanings and cultural identities as defined by oppositions of us and other, male and female, normal and abnormal, natural and unnatural. Provide a potential source of comparative cultural reflection and critique.

ARCH 470 Issues in Contemporary Professional Practice (4) *Effective Winter 2012*

A critical analysis of the roles and responsibilities of the architect in providing comprehensive services to the client from project acquisition and inception to project delivery and closeout and the process and requirements for internship development and attaining registration. Not open to students with credit in ARCH 443. 4 lectures. Prerequisite: ARCH 342, ARCH 353.

ARCH 471 Material Innovation Lab (4) *Effective Spring 2012*

Advanced applied design research laboratory that initiates, conceives, and executes full-scale material assemblies through industry/academic partnerships. Design of advanced building systems through environmental performance criteria. Direct and indirect fabrication techniques, including casting, thermo-forming, and cold-forming.

ASCI 471 Advanced Assisted Reproduction Technologies of Gametes and Embryos (2) *Effective Spring 2012*

Coverage of current resources, advanced techniques and methodologies of assisted reproduction of gamete and embryos involving in-vivo collection, in-vitro fertilization, culturing, cryopreservation and micromanipulation.

BIO 470 Marine Conservation and Policy (4) *Effective Winter 2012*

Examination of how government agencies apply science and policy to implement marine conservation and resource management. Topics covered will include endangered species, coastal management, fisheries, offshore energy, and climate change. Students will also learn the basics of researching management questions.
Prerequisite: BIO 325, BIO 327, BIO 328, BIO 401, BIO 444, BOT 326, or NR 306.

BIO 470/471 Entomology and Lab (4) *Effective Winter 2012*

Introduction to the study of insects. Biology, ecology, structure, and classification of insects and related arthropods; role of arthropods in natural systems; agricultural, medical, and forensic entomology. Anatomy, development, collection methods, and identification of arthropods important to California agriculture and as vectors of disease agents. Insect collection required. 3 lectures. Prerequisite: CHEM 110 or CHEM 111 or CHEM 127; BOT 121 or HCS 120 or BIO 160 or BIO 162. Concurrent: BIO 471. Not open for credit to students who have taken ZOO 335 or PPSC 311. Recommended: Junior standing.

BIO 470 Current Developments in Medical Science and Engineering (2) *Effective Spring 2012*

Multidisciplinary exploration of current developments in medical science and engineering, with a focus on advances in diagnosis, treatment, and clinical technologies. Team taught by faculty in engineering and the life sciences, with guest lectures by medical practitioners and experts in the development of medical technology.

BMED 470 Current Developments in Medical Science and Engineering (2) *Effective Spring 2012*

Multidisciplinary exploration of current developments in medical science and engineering, with a focus on advances in diagnosis, treatment, and clinical technologies. Team taught by faculty in engineering and the life sciences, with guest lectures by medical practitioners and experts in the development of medical technology.

BRAE 570 Ag Mechanics Curriculum Development for Ag Educators (3) *Effective Spring 2012*

Strategies for the development of student skills in agricultural mechanics. Project design and construction. Shop safety and management of learning facilities.

BUS 270 The Leadership Summit I (2) *Effective Winter 2012*

Preparation for leadership roles in the community and in professional life. Knowledge, skills, and foundation in leadership necessary to be effective in a variety of settings. Development of an understanding of the components that make leadership successful. Theoretical and practical skills necessary for success in both personal and professional life. Prerequisite: Open to undergraduate students and consent of instructor.

BUS 270 The Leadership Summit II (2) *Effective Winter 2012*

Leadership combination of learning about leadership through the review of literature introduced in Leadership Summit I, class discussion, and participation in a wide variety of "hands-on" exercises and case-study analyses. Literature and exercises are chosen to address leadership theory and place students in a real-world context in which they will be able to apply various skills and techniques deemed to be essential for successful leadership in the organizational and broader societal settings. Prerequisite: Open to undergraduate students and consent of instructor.

CE 470 Interdisciplinary Senior Project I, II, III (1) (1) (1) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society and ethical considerations.

CE 471 Interdisciplinary Senior Project Lab I, II, III (2) (2) (2) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society and ethical considerations.

CHEM 470 Neurochemistry (3) *Effective Spring 2012*

Basic neuroanatomy and neurophysiology with an emphasis on the biosynthesis and chemistry of major neurotransmitters. Topics will include the chemistry and/or neurocellular mechanisms involved in consciousness, natural induced alterations of consciousness, and chemicals that selectively alter consciousness. Recommended: BIO 161, CHEM 317, and CHEM 371.

CRP 470 Web Technologies for Planning (1) *Effective Winter 2013*

Application of the ten most important web technologies utilized by planners to plan, communicate planning concepts, and engage citizens in the planning process. Hands-on practice with each technology using free, widely-available tools, and resulting in a web-based student portfolio.

CRP 471 Sustainable Visions for the Future of Vietnam (3) *Effective Winter 2013*

Visioning challenge for Vietnam's first model green village in the Xanh Quy Nhon region. Designing a project bridging the local (fisheries, existing village, environment, culture) and the global (tourism, medical campus, university, techzone).

CSC 490 AJAX UI Design Using JavaScript/JQuery (2) *Effective Fall 2012*

Design and building of web user interfaces. In-depth coverage of JavaScript (JS) and JQuery, including closures, prototypal inheritance, and plug-in design.

CSC 570 Bioinformatics and Computational Molecular Biology (4) *Effective Fall 2011*

Study of algorithms and computational techniques used in the field of bioinformatics/computational biology. 4 seminars. Prerequisite: Graduate standing and evidence of satisfactory preparation in computer science.

EE 470 Principles of Systems Engineering (PoSE) (3) *Effective Winter 2013*

Systems engineering, its value, how it's done and by whom. Application of key systems engineering methodologies. Product development life cycle.

EE 470 Automotive Technologies for a Sustainable Future (3) *Effective Winter 2012*

Multi-disciplinary investigation of automotive renewable fuels and electric/hybrid vehicles. Topics include automotive electronics, combustion cycles, fuel and ignition systems, drivetrain controls, electric vehicle power systems, vehicle telematics and whole-cycle analysis of motive energy options.

EE 470 Interdisciplinary Senior Project I, II, III (1) (1) (1) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society and ethical considerations.

EE 471 Automotive Technologies for a Sustainable Future Laboratory (1) *Effective Winter 2012*

Multi-disciplinary investigation of automotive renewable fuels and electric/hybrid vehicles. Topics include automotive electronics, combustion cycles, fuel and ignition systems, drivetrain controls, electric vehicle power systems, vehicle telematics and whole-cycle analysis of motive energy options.

EE 471 Interdisciplinary Senior Project Lab I, II, III (2) (2) (2) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society and ethical considerations.

ERSC 471 Natural Resources Management and Environmental Sciences Careers (1) *Effective Winter 2013*

Networking opportunities for Natural Resources Management and Environmental Sciences students to discuss natural resources, forestry, soil science, earth sciences, and environmental management career opportunities with professionals. Includes a Saturday Career Fair.

FSN 470 Professional Practice in Nutrition and Dietetics (2) *Effective Fall 2012*

Application of strategic planning, critical thinking, written and oral communication skills to prepare for supervised practice and/or graduate school application and professional practice.

FSN 570 Journal Review (1) *Effective Fall 2012*

Presentation, review and discussion of current research in food science or nutrition.

GSB 570 Labor Law and Labor Relations for Managers (4) *Effective Fall 2011*

Examination of federal and state labor policy as expressed in common law, statutes, and executive orders from a managerial perspective, with specific focus on applied skills and analytics. In-depth exploration of effects upon, and appropriate actions necessary in relation to, employees, managers, protected groups, and the public. Applied managerial focus on risk management, compliance, and resolution of labor law disputes from the perspective of a manager. Simulated ADA accommodation review and analysis, sexual harassment investigation and report drafting, and advanced workplace investigations with focus on engaged, creative and complaint solution development. Managerial documentation of workplace compliance, as well as employee correspondence. 4 seminars. Prerequisite: OCOB graduate standing or approval from the Associate Dean.

GSB 570 Debt Instruments, Bonds and Other Fixed Income Securities (4) *Effective Spring 2012*

Theoretical and practical analysis of the markets for money, bonds, and other fixed income instruments. Topics include money market instruments, duration and convexity of bonds, yields, default risk, the term structure of interest rates, interest rate volatility, principle erosion, financial risk management of bond portfolios, and securitization. Prerequisite: OCOB graduate standing and GSB 531 or approval from the Associate Dean.

GSB 570 Distribution Packaging for Business Managers (4) *Effective Fall 2012*

Physical properties of distribution packaging. Students are required to integrate substantive packaging knowledge to solve actual distribution packaging problems in modern business, with a view towards financially efficient and environmentally sustainable solutions.

HCS 470/471 Entomology and Lab (4) *Effective Winter 2012*

Introduction to the study of insects. Biology, ecology, structure, and classification of insects and related arthropods; role of arthropods in natural systems; agricultural, medical, and forensic entomology. Anatomy, development, collection methods, and identification of arthropods important to California agriculture and as vectors of disease agents. Insect collection required. 3 lectures. Prerequisite: CHEM 110 or CHEM 111 or CHEM 127; BOT 121 or HCS 120 or BIO 160 or BIO 162. Concurrent: BIO 471. Not open for credit to students who have taken ZOO 335 or PPSC 311. Recommended: Junior standing.

HIST 470 Farmer's Market Oral History Project (2) *Effective Fall 2011*

Introduction to the principles and practice of doing local, oral history. Project-based course culminates in student-team interviews with farmers, downtown business owners, and other area residents pertaining to the history of the San Luis Obispo Farmer's Market.

HNRS 470 Farmer's Market Oral History Project (2) *Effective Fall 2011*

Introduction to the principles and practice of doing local, oral history. Project-based course culminates in student-team interviews with farmers, downtown business owners, and other area residents pertaining to the history of the San Luis Obispo Farmer's Market.

IME 470 Interdisciplinary Senior Project I, II, III (1) (1) (1) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society, and ethical considerations.

IME 471 Interdisciplinary Senior Project Lab I, II, III (2) (2) (2) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society, and ethical considerations.

IT 570 Review of Life Cycle Inventory Analysis for Retail Packages (4) *Effective Spring 2012*

Exploration of the interactions between packaging materials and their environments. Life Cycle Inventory Analysis (LCI) is one phase within the Life Cycle Assessment (LCA) methodology used to determine the environmental impact of a product system. Understanding of the theory and analytical tools implemented to perform 'Life Cycle Inventory' analysis to generate valuable scientific information, which can be adopted by government officials, industries, or society to evaluate a product's environmental impact.

IT 570 Development of Distribution Package Testing Protocols (4) *Effective Fall 2012*

Simulation of field hazards related to distribution of packaged goods in a laboratory environment is a common practice. Although numerous such "standardized" testing protocols currently exist, they consistently need to be reevaluated for efficacy. This course allows students to investigate the current standards and propose revisions that may be adopted by the industry. Standards include ASTM, ISTA and TAPPI.

IT 570 Shock Transmissibility of Palletized Loads (4) *Effective Fall 2011*

Exploration of the transmissibility of shocks experienced by palletized loads during handling in distribution. Transmissibility of these shocks incurred by various modes and at various locations on the palletized load. Topics include distribution hazards, structural package design, and the ASTM and ISTA testing protocols. 4 lectures. Prerequisite: OCOB graduate standing or approval from the Associate Dean.

IT 570 Single-use Cold Chain Packaging and Logistics for Temperature Sensitive Products (4) *Effective Winter 2012*

Exploration of numerous solutions available for shipping temperature sensitive products that include a variety of packaging materials as well as refrigerants. Temperature profiles for factors such as the different densities for a given thickness of packaging material, wall thicknesses, and distribution environments.

IT 570 Development of Sample Cutter for Paper Based Testing (4) *Effective Winter 2012*

Exploration of paper based packaging materials in designing protective packaging based upon the testing of several standardized samples. Testing involves sample cutters that are typically very expensive and only intended to cut one type of each sample. Investigation of current sample cutters and design. Validation of a pneumatic all-in-one sample cutter that allows for standardized test samples to be prepared. Distribution hazards, structural package design, and TAPPI testing protocols.

IT 571 Air Flow and Cooling of Fresh Produce (4) *Effective Fall 2011*

This course explores the development of scaled prototypes of palletized loads based on geometric, kinematic and dynamic similitude as well as forced air cooling operation towards measuring and comparing the air flow and cooling for the system. 4 laboratories. Prerequisite: OCOB graduate standing or approval from the Associate Dean.

IT 571 Alternative Packaging for Fresh Cut Produce (4) *Effective Winter 2013*

Interactions between alternative packaging materials for fresh cut produce and their environments. Exploration of advanced packaging dynamic theory and laboratory tools implemented to assess package performance as affected by handling, storage, and the distribution environment. Data analysis and interpretation to generate valuable scientific information, which can be adopted by fresh produce and packaging industries, government, or society to evaluate product-package system performance.

IT 571 Distribution Packaging Design and Validation (4) *Effective Spring 2012*

Exploration of the numerous challenges faced by protective packaging in distribution. Survey of tests and procedures for packaging materials and packaging products following ASTM and ISTA standards. The testing procedures will include tests for shocks, vibration, drop, and impact, as prescribed for shipment by truck, rail, sea and air. Hands on product/package testing for quality control is involved.

IT 571 Pressure Differential Testing for the Distribution Environment (4) *Effective Fall 2012*

Exploration of pressure differential based challenges faced by packaging in distribution, including a survey of related tests and procedures for packaging materials and packaging products. Testing procedures including tests for shock, vibration, drop, and impact, as prescribed for shipment by truck, rail, sea, and air. Hands on product/package testing for quality control.

JOUR 470 Digital Copyright and Trademark (4) *Effective Spring 2013*

Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 2-4 lectures. Prerequisite: Consent of instructor; junior standing.

LA 470 Built Environment Design and Active Living (2) *Effective Spring 2012*

Influence of the built environment on human behaviors, lifestyles and health. Theoretical and empirical insights into the issues of physical inactivity, obesity, and automobile dependency. Focus on how the built environment can help address these issues. 2 lectures. Prerequisite: Consent of instructor.

MATE 270 Sustainability and Materials Introduction (1) *Effective Spring 2013*

Introduction to global sustainability of materials. Includes issues involving biophysical and sociopolitical considerations around materials, water, energy, population and sustainable development.

MATE 270 Sustainability and Materials (4) *Effective Spring 2013*

Development of systems thinking skills. Examination of questions of global sustainability of materials. Includes issues involving biophysical and sociopolitical considerations around materials, water, energy, population and sustainable development.

MATE 470 Thermodynamics of Materials (1-4) *Effective Winter 2013*

Thermodynamic concepts related to materials engineering: ideal gases, systems and surroundings, first through third laws of thermodynamics, phase equilibria, chemical reactions. Thermodynamics concepts related to materials engineering systems and processes: process flowsheets, mass and energy balances, Ellingham diagrams.

MATE 470 Current Developments in Medical Science and Engineering (2) *Effective Spring 2012*

Multidisciplinary exploration of current developments in medical science and engineering, with a focus on advances in diagnosis, treatment, and clinical technologies. Team taught by faculty in engineering and the life sciences, with guest lectures by medical practitioners and experts in the development of medical technology.

MATE 470 Interdisciplinary Senior Project I, II, III (1) (1) (1) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society and ethical considerations.

MATE 471 Interdisciplinary Senior Project Lab I, II, III (2) (2) (2) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society and ethical considerations.

MATE 471 Transport Phenomena I (1) *Effective Winter 2013*

Introduction to transport phenomena and models; focus on energy transport in solid material systems.

MATE 471 Transport Phenomena II (1) *Effective Spring 2013*

Fluid static and dynamic properties; focus on convective transport.

MATE 471 Transport Phenomena III (1) *Effective Fall 2013*

Thermal energy transport and exchange: Focus on radiative transfer and heat transfer involving phase changes.

MATE 570 Nanoscale Engineering (3) *Effective Fall 2011*

Development of an understanding of the properties of materials at the nanoscale and how to design devices that can take advantage of their uniqueness.

ME 270 Project Management and Teamwork Skills for Community Service Learning Projects (4) *Effective Winter 2012*

Management of projects in the community. Identification of stakeholders within and outside the project team. Introduction to tools used for project management. Teamwork theory and practice including motivation and conflict management. Specific client needs including report and deliverable management.

ME 470 Engineering Failure Analysis (4) *Effective Winter 2012*

A synthesis of course content from the entire undergraduate mechanical engineering curriculum by applying the technical skills acquired in Statics, Dynamics, Strength of Materials, Thermodynamics, Computer Science, Fluids, and Design to detailed analyses of engineering failures. Evaluation of a broad range of causes of engineering failures, including elastics, plastics, creep, fast fracture, and corrosion-caused failures, through a series of case studies.

ME 470 Interdisciplinary Senior Project I, II, III (1) (1) (1) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society and ethical considerations.

ME 471 Interdisciplinary Senior Project Lab I, II, III (2) (2) (2) *Effective Fall 2012*

Team based interdisciplinary senior design project. Identification of industry partner's needs and development of design solution. Test plan development to validate design meets user requirements. Communication of results to industry partner. Project management, cost analysis, intellectual property analysis, impact analysis on society and ethical considerations.

NR 470 The Social and Ecological Dimensions of California Agri-food and Fiber Systems (4) *Effective Summer 2011*

Introduction to California agriculture and its broad social and ecological contexts. An integrated interdisciplinary approach, drawing from agricultural, natural and social sciences. Students gain a multidimensional understanding of food systems through study on a demonstration farm, field trips to key food system sites, and interdisciplinary academic study and research. 4 lectures. Prerequisite: Consent of instructor.

NR 471 Natural Resources Management and Environmental Sciences Careers (1) *Effective Winter 2013*

Networking opportunities for Natural Resources Management and Environmental Sciences students to discuss natural resources, forestry, soil science, earth sciences, and environmental management career opportunities with professionals. Includes a Saturday Career Fair.

NR 471 The Social and Ecological Dimensions of California Agri-food and Fiber Systems (2) *Effective Summer 2011*

Introduction to California agriculture and its broad social and ecological contexts. An integrated interdisciplinary approach, drawing from agricultural, natural and social sciences. Students gain a multidimensional understanding of food systems through study on a demonstration farm, field trips to key food system sites, and interdisciplinary academic study and research. 2 laboratories. Prerequisite: Junior standing or consent of instructor.

POLS 470 Politics of Sustainable Development (4) *Winter 2012*

Key issues in political, social, historical and cultural aspects of sustainable development; issue areas include climate change, water, energy, food sustainability, pollution, and other areas of environmental governance. Theoretical issues such as emergence of environmental values, environmental policymaking, and experimental models of sustainable communities explored on national and international level.

RPTA 470 Advanced Concepts in Sustainable Events (3) *Effective Summer 2011*

Applying sustainable practices in event planning and management. Topics include areas of impact for both indoor and outdoor events, policy and best practices, green positioning, zero emissions energy, carbon offsetting, transportation, water uses and sourcing, vendors and suppliers, consumption and footprinting. Heavy emphasis on projects and the comparison of results obtained in class to real problems and events. 3 lectures. Prerequisite: RPTA 210, and RPTA 317 or RPTA 320 or RPTA 420; junior standing or consent of instructor.

SS 471 Natural Resources Management and Environmental Sciences Careers (1) *Effective Winter 2013*

Networking opportunities for Natural Resources Management and Environmental Sciences students to discuss natural resources, forestry, soil science, earth sciences, and environmental management career opportunities with professionals. Includes a Saturday Career Fair.

STAT 470 Statistics Education: Pedagogy, Content, Technology and Assessment (4) *Effective Spring 2013*

Issues related to content, pedagogy, technology, and assessment for teaching statistics in grades 6-16 in accordance with current standards and research on teaching statistics including the Common Core State Standards for Mathematics.