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2008

## Curriculum Change 2008-2009

Portland State University

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This list sub	mitted to OrAC	RAO on: 6	13/08				
PSU Curricu	ılar Change Cy	cle: Annual					
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Name & cor	tact info of per						
Effective Term	New (N) Modified (M) Deleted (D)	Prefix	# Course Title	Credits	Course Description	Type of Change (for modified classes only)	Comments
Fall 2008	N	Anth	520 Policy Paper	4	For students completing the policy track within the department's M.A. program. Preparing a graduate level paper, 25-30 pages in length, based on the student's internship experience and the relevant policy topic they are exploring. Student meets regularly with their faculty advisor. Prerequisite: Anth 504.		
Fall 2008	N	Arch	384 Architectural Design Focus Studio I	3	Studio investigations of architectural designs based on supporting human activities, structure and theory. Includes individual criticism, lectures and seminars. Prerequisite: Arch 380.		
Fall 2008	N	Arch	385 Architectural Design Focus Studio II	3	Studio investigations of architectural designs based on supporting human activities, structure and theory. Includes individual criticism, lectures and seminars. Prerequisite: Arch 380.		
Fall 2008	N	Art	112 Idea and Form	4	Introduces an interdisciplinary approach to understanding images and image systems, their history, and their intersection with the larger culture. With an emphasis on critical thinking and analysis, the course investigates the way social and cultural dynamics shape meaning and perception in art and design. Examples from art history, contemporary practice, popular culture and print/broadcast culture are examined through illustrated lectures, discussion, readings, writing assignments and studio projects. No prerequisite required. Open to non-majors.		
Fall 2008	М	Art	115 Foundation Studio I: 2-D Design	4	Introduces fundamental principles and their application through the concepts, processes and practices of two-dimensional design and color theory. Students investigate visual problems, develop a visual language for communicating ideas and explore basic materials and techniques. Methods for critical evaluation draw on examples of historical and contemporary art and design, aesthetics and concepts of visual culture. No prerequisite required. Open to non-majors.	Change course title and description.	
Fall 2008	N	Art	117 Foundation Studio II: 3-D Design	4	Introduces fundamental principles and their application through the concepts, processes and practices of three-dimensional design and continues the exploration of color theory. Students investigate physical properties of form, the interaction of forms in space, the inherent qualities of materials, basic methods of fabrication and methods for critically evaluating works of art and design. Illustrated lectures, reading, discussion and studio projects place the exploration within contemporary and art historical contexts. No prerequisite required. Open to non-majors.		

Fall 2008	N	Art		Foundation Studio III: Digital Media/Time Design	4	Introduction to concepts, tools, techniques, processes, and practices of digital and time-based media. Students survey and explore a range of digital media, including photographic imaging, illustration, visual narrative, video, and animation. Lectures, readings, discussion, and studio projects place the exploration within contemporary and art historical contexts. No prerequisite required. Open to non-majors.	
Fall 2008	N	Art	203	Making and Meaning	4	Explores the relationship of material, method and process to the construction of meaning in art practice. Students experiment with various research methods as a way to generate, inspire and inform projects that reflect current topics of interest in contemporary art and culture. Course focus depends on instructor; examples include personal narratives, time, the constructed body, self and ritual, history and memory, public space, concepts of beauty. Prerequisites: (required for art and art history majors; recommended for non-majors), Art 112 and 115. Maximum 4 credits. Open to non-majors with instructor's consent or departmental approval.	
Fall 2008	N	Art		Introduction to Art and Social Practices	4	Introduces an interdisciplinary approach to understanding and producing social practice art projects. Students will be encouraged to use a wide range of media and approaches in responding to various class assignments. Exploration of the PSU and Portland community will be an essential part of the class. The students will create work that responds to the dynamics of social spaces and public environments. Prerequisites: (required for art and art history majors; recommended for non-majors), Art 112. Maximum 4 credits. Open to non-majors with instructor's consent or departmental approval.	
Fall 2008	М	Art	230	Drawing Concepts	4	Develops drawing and compositional strategies, languages and methods that build on skills learned in foundation courses and embraces a transition from formal observational methods to abstract expressive modes of drawing. Students explore historical and contemporary strategies of visual analysis, surface and space as tools for creative exploration and employ analytical and verbal skills. Prerequisites: ART 112, 115, 131 & 132. Open to non-majors with instructor's consent or departmental approval.	Change course title, description and prerequisites.
Fall 2008	М	Art	250	Life Drawing	4	Developing skills for drawing the human figure from observation in a variety of poses and media. This is the first of a sequence of three classes. Develops, skills in observation and perception. Later, analytic skills are combined with personal expression and invention. A variety of media is used to explore the implications of line and modeled form to explore the figure in compositional environments. The skeleton and muscles will be studied in relationship to the model poses. Open to nonmajors with instructor's consent or departmental approval. Prerequisites. (for art and art history majors only) Art 115, Art 131.	Change course number, title, description and prerequisites.

Fall 2008		Art	295 Sculpture-The Figure	4	A studio art course that studies sculptural forms and volumes through observation of the human body. The focus of this course will be a study of the human figure in form and gesture and an exploration of the methods and materials appropriate to that study. Observation and perception, proportion, analysis of the human skeleton and musculature, and figurative abstraction will be addressed. Prerequisites: (required for art and art history majors; recommended for non-majors), Art 112 and 117. Maximum 4 credits. Open to non-majors with instructor's consent or departmental approval.		
Fall 2008	M	Art	312 Art in the Elementary School	4	This course is designed to give the elementary educator knowledge, skills, methodologies and resources that encourage the incorporation of art education as a regular, ongoing and sequential part of the core curriculum. Based on contemporary theory and practice focused exclusively on the teaching of art at K-5 levels. Required for all students seeking a general multi-subject teaching license at the elementary level. General objectives include establishing a theoretical and methodological foundation that enables the student to teach age appropriate art lessons that engage children not only in art production activities but also to address the areas of art history, criticism and aesthetics. Open to Non-majors. Maximum 4 credits.	Change description and credit hours.	
Fall 2008	N	Art	327 Intermediate Art and Social Practices	4	Students will choose a department on campus other than the art department and will become "artists in residence" for that dept during the quarter. They will work with people in their selected departments to create projects that respond to the department's qualities, needs and interests. Students will document their process and projects, and will be graded on engagement in class and with their departments, journals, and projects. Prerequisites: Art 227 or consent of instructor.		
Fall 2008	N	Art	330 Critical Theories in Art I	4	After a brief look at art of the 1960s and 1970s, this class will explore major theoretical and philosophical developments in the art world over the last quarter-century. Various themes and forms of art and individual artists will be examined as manifestations of specific theories and philosophies that have emerged during the past 25 years. Particular emphasis will be on art of the post-9/11 era. Material will be covered through readings, slide lectures and films as well as frequent visits to the Portland Art Museum; we will also take advantage of gallery shows, lectures and other relevant local events. Assignments will include critical response and research papers, group presentations. Prerequisites: (required for art majors); Art 112, 115 and ARH 206. Maximum 4 credits. Open to non-majors with instructor's consent or departmental approval.		
Fall 2008	М	Art	350 Life Drawing II	4	This is the second class in the Life Drawing sequence. The course continues development of skills in drawing the human figure in a variety of poses working with a variety of materials with an emphasis on the muscular system. Prerequisite: Art 131, Art 250 or have equivalent experience drawing from a live model. The student should be able to state the figure quickly, economically and in proportion. Open to non-majors with instructor's consent Prerequisites. (for art and art history majors only) Art 131, Art 250.	Change title, description and prerequisites.	

Fall 2008	М	Art	391	Drawing Concepts II	4		Change course title.
Fall 2008	N	Art	427	Advanced Art and Social Practices	4	Students work outside of the PSU campus. The class will select a particular area of Portland, or a specific institution like a high school or senior center. The students will then become "artists-in-residence" in that area or institution. The students will keep journals documenting information presented in the class, personal project ideas. General class engagement and journal writing will form the basis for grades. Prerequisites: Art 327 or consent of instructor.	
Fall 2008	N	Art	430/ 530	Critical Art Theories II	4	Artwork and artists of the 21st century are examined within the context of contemporary art theory. A thematic rather than a chronological approach is used when examining theoretical, philosophical and socio-cultural aspects. Material presented through in-class instruction and field trips. Prerequisite: Art 330 and non-majors must have departmental or instructor's consent.	
Fall 2008	М	Art	450	Life Drawing III	4	The third course in the life drawing sequence. If students have had the preparation of prior classes in learning to draw the figure accurately from observation and have learned a little about basic anatomy then they will continue to develop skills in drawing the human figure in a variety of poses with the addition of compositions dealing with two or more figures when possible. Emphasis on compositional and expressive means Use of variety of materials. Prerequisites (required for art and art history majors): Art 350. Recommended that it be taken in sequence. Open to non-majors with instructor's consent.	Change course number, title, description and prerequisites.
Fall 2008	N	Art	498	BFA Thesis Exhibition	2	This is a tutorial and directed study in studio production with assigned supervising faculty members. Preparation and production of a cohesive body of work culminating in an end of the program BFA thesis exhibition. In-depth discussions and assessment of student's studio work in relation to subject matter, materials, content, presentation, contemporary art practices and criticism, technical and formal concerns and/or related interdisciplinary interests. This course should be taken in the last quarter of the BFA Program before graduation. Directed assignments and course of study will be given as appropriate. An oral defense of the final project will take place at the time of the final exhibition. Required for all BFA students. Prerequisites: Acceptance into the BFA program and Senior Standing.	

Fall 2008	М	Art	Art Methods for Secondary School Teachers	4,4	Methods and materials for teaching and coordination of art programs in grades 5-12, with an emphasis on organizing historical, aesthetic, critical and studio demonstrations, lectures, and classroom/model presentations. Translating theory(ies) into practice(s) will be a continuing and ongoing focus of the classes in lessons, research and readings. Students will develop Art lessons and programs that reflect current state and national standards. Art 514 is an introduction to the history of Art Education, the methods of instruction, philosophy of art education, and organization of art materials and tools. Art 515 explores the current best practices and issues in Art Education, technology (media-computer) application to art, continuing research/issues in art education, Practical and contemporary issues in public/private education. Prerequisite: Admission into the Art Education GTEP program. Open to non-majors with instructor's consent	Change course numbers, title, description, credits from 3 to 4, drop Art 516 from sequence.
Fall 2008	D	Art	Art in the Secondary Schools			
Fall 2008	N	Art	Studio Practices: Directed Studies	4	Tutorial and directed study in studio production with a supervising faculty member. In-depth discussions and assessment of graduate student's studio work-in-progress in relation to contemporary art practices and criticism, historical practices, technical and formal concerns and/or related interdisciplinary interests. Directed assignments and course of study will be given as appropriate. May be repeated for credit. Maximum credits 40. Required for MFA. Prerequisite: graduate standing.	
Fall 2008	N	Art	MFA Graduate Seminar I: Special Topics in Contemporary Art	2	Examines selected issues in contemporary art and culture. The given instructor's current research interests determine course material.  Examples of topics include: post-colonialism and Diaspora; issues in feminism; gender and queer studies; modernisms and modernity; new technologies and digital culture; autobiography and memoir; cultural production and censorship; globalism and new economies of art. Course format consists of assigned readings, discussion and a writing component. Field trips, student presentations, screenings and assigned lectures may also be included. May be repeated for credit. Maximum credits 4. Required for MFA. Prerequisite: graduate standing.	
Fall 2008	N	Art	 MFA Graduate Seminar II: Writing and Research	2	Explores the role of writing and research in contemporary art practice. Course materials include library research and developing bibliographies relevant to students' studio practice, discussion of methodologies and practices of contemporary art production. Preparatory course for written component of the MFA exhibition project: second-year students are expected to develop an abstract and outline for their exhibition project. May be repeated for credit. Maximum credits 4. Required for MFA. Prerequisite: graduate standing.	

Fall 2008	N	Art		MFA Graduate Seminar III: Teaching Visual Culture	2	Explores teaching at local and national institutions as preparation for teaching in higher ed. This seminar includes curriculum development, syllabi development, assessment, educational objectives reading and discussion of post-modern theory and other matters in the area of art education and visual culture. Required for MFA. Maximum credits 2. Prerequisite: graduate standing.	
Fall 2008	N	Art		Social Practice: Directed Studies	4	Tutorial and directed study in social practice production with a supervising faculty member. In-depth discussions and assessment of graduate student's work-in-progress in relation to contemporary art practices and criticism, historical practices, technical and formal concerns and/or related interdisciplinary interests. Directed assignments and course of study will be given as appropriate. May be repeated for credit. Maximum credits 20. Required for MFA. Prerequisite: graduate standing.	
Fall 2008	М	Art		MFA Graduate Seminar IV: Professional Practices	2	Explores practical issues of career development for professional artists including preparing a portfolio, grant writing, C.V. writing, applying for teaching positions and residencies, working with museums and galleries, working in and with public, nonprofit and community arts organizations. The course includes guest speakers and individual research projects. Required for MFA. Prerequisite: graduate standing in MFA.	Change title and description.
Fall 2008	N	Art		Visiting Artist Program/Group Critique	2	A critique-based course focusing on the studio production of the individuals enrolled. Students are expected to help foster and develop an environment for serious and sophisticated peer review. The work of visiting artists will be presented. Visiting artists participate in group critiques, as well as conduct individual studio critiques. May be repeated for credit. Maximum credits 12. Required for MFA. Prerequisite: graduate standing.	
Fall 2008	N	Art	587	Exhibition Project	4	Tutorials and directed study in developing a final MFA exhibition project. Conduct supporting research and studio production with approval of the students' individual MFA advisor, Exhibition committee chair and committee members. Required for MFA. Maximum credits 4. Prerequisite: graduate standing.	
Fall 2008	N	Art	598	Social Practice: Workshop	2	This course is a co-requisite to Art 584 Social Practice: Directed Studies. In this workshop the focus will be on the creative aspects involved in social practice rather than theory. Formulate and work on collaborative public projects, discuss the creative aspect and practical application of art and social practice. May be repeated for credit. Maximum credits 20. Required for MFA. Prerequisite: graduate standing.	
Fall 2008	N	Art	599	Exhibition Critique	2	Public presentation of MFA exhibition project and MFA exhibition lecture; production of written MFA exhibition statement with the student's individual MFA advisor, graduate faculty and graduate program coordinator. Required for MFA. Prerequisite: graduate standing. Maximum credits 2.	
Fall 2008	N	ASL	101	American Sign Language	4	Basic mastery of American Sign Language (ASL). Covers ASL vocabulary, grammatical structure, and elements of Deaf culture. Includes sign language practice in class and in the Deaf community.	

Fall 2008	N	ASL	102	American Sign Language	4	Continuation of American Sign Language with the goal of expanding the student's vocabulary and conversational skills. Students will also gain awareness of Deaf culture. Pre-requisite: ASL 101 or proficiency at 101 level. Placement interview may be required.	
Fall 2008	N	ASL		American Sign Language		Continuation of American Sign Language aimed at intermediate proficiency. Emphasizes enhanced vocabulary, expressive and receptive skills, and communication interactions in the language and culture of the Deaf. Pre-requisite: ASL 102 or proficiency at 102 level. Placement interview may be required.	
Fall 2008	N	ASL		Second Year American Sign Language	4,4,	Expansion and refinement of first-year comprehension and production skills; expansion of grammatical and lexical repertoires through task-based instruction in transactions such as asking/giving directions, making plans, describing and identifying people, places and things, giving simple instructions, and telling what happened. Prerequisite: ASL 103.	
Fall 2008	N	BA		Special Topics in Business	4	The courses offered under this number cover a range of specialized topics in business such as Product Design and Stewardship for Global Corporations, Sustainability Metrics in Business, Cross-Sector Partnerships for Sustainable Enterprise, Global Marketing Research, Marketing in Asia, Global Marketing, Global Human Resource Management, etc. Only open to graduate students of the School of Business Administration. May be repeated with different topics; maximum of 12 credits may be applied to the master's degree.	
Fall 2008	D	BA		Competitive and Strategic Analysis			
Fall 2008	D	Bi	162	Indoor Plants			
Fall 2008	М	Bi		Theory of Recombinant DNA Techniques	4		Change credit hours from 3 to 4.
Fall 2008	D	Bi	451/ 551, 452/ 552	Parasitology			
Fall 2008	D	Bi	591	Advances in Phycology			
Fall 2008	D	Bi		Cytogenetics			
Fall 2008	D	Bi		Cytogenetics Laboratory			
Fall 2008	M	CE	351	Transportation Systems: Planning and Design	4	A study of engineering problems associated with the planning and design of urban and intercity transportation with emphasis on systems approach to problems definition and solution. Vehicle operation characteristics and traffic control devices for land, air, and water, data collection methods and development of transportation models for the establishment of design criteria for transportation structures. Prerequisites: Stat 451 and junior standing in engineering.	Change prerequisites.
Fall 2008	М	CE		Structural Steel Design - LRFD Method	4	Design of components of steel structures based on load and resistance factor design method. Prerequisites: CE 321, CE 325.	Change prerequisites.

Fall 2008	М	CE	433/ 533	Cold-Formed Steel Design	4	Design of cold-formed steel beams, columns, beam-columns, cylindrical tubular members, and connections based on allowable stress design (ASD) and the load and resistance factor design (LRFD) methods of the AISI specification. Prerequisite: CE 432/532.	Change prerequisites.
Fall 2008	М	CE		Design of Composite Structures	4	Design of composite steel-concrete members based on load and resistance factor design method. Prerequisite: CE 432/532.	Change description and prerequisites.
Fall 2008	М	CE	539/ 639	Advanced Steel Design	4	Analysis and design of metal structures including connections, plate girders, design loads, structural systems, and bracing. Prerequisite: CE 432/532.	Change prerequisites.
Fall 2008	N	CE	668	Advanced Methods in Hydrologic Systems Analysis	4	Principles in analysis of dynamic systems with specific emphasis on hydrologic model building. Variety of techniques in hydrologic system analysis with mathematical formulation, development and use of computer-based models for solving scientific and engineering problems are discussed. Among the topics presented will be the discussion of optimization theory, artificial intelligence, model calibration (parameter estimation), ensemble (probabilistic) forecasting, data assimilation and uncertainty analysis. Recommended prerequisites: CE 465/565 or similar course.	
Fall 2008	N	CFS		Parent and Family Education	4	Introduction to parenting rights, responsibilities, practices, processes, parent/child relationships, changing parenting roles and general philosophy/broad principles of family life education. Planning, observing, and evaluating family life education programs will be included through a community based experience. Recommended prerequisite: junior status.	
Fall 2008	D	Ch	160	Physical Science			
Fall 2008		Ch		Physical Science Laboratory			
Fall 2008	D	Ch	355	Biochemistry of Women			
Fall 2008	D	Ch	620	Selected Topics in Analytical Chemistry			
Fall 2008	D	Ch	622	Trace Metal Analysis			
Fall 2008	D	Ch	666	Solution Thermodynamics			
Fall 2008	D	Chn	306	Business Chinese			
Fall 2008		CI	476/	Equity and Cultural Diversity in Early Childhood Education	3	Explore developmental early childhood education practices, emphasizing developmentally and culturally appropriate objectives as well as anti-bias learning goals. Develop awareness of quality teaching practices by exploring personal cultural history, gaining insights into living examples of difference, witnessing the effects of bias, and learning to support fairness and issues of equity in a classroom.	
Fall 2008	D	CI		Advanced Educational Psychology			

Fall 2008	М	CI	573	Assessment and Technology in Early Childhood Education	3	Study of and experience with a range of developmentally appropriate assessment and technology strategies for use in diagnostic, formative, and summative evaluation of growth and development of young children and for appropriate educational decisions in early childhood education settings. Prerequisite: Undergraduate early childhood education coursework or teaching experience with young children.	Change title and description.	
Fall 2008	М	CI	590	Action Research Proposal	3	Designed to help educators see themselves as researchers so that they can conduct research in educational settings that contribute to the improvement of education. Knowledge of accessing and using research literature, the range of educational research paradigms and using appropriate research methods included. Students will develop a proposal for an action research project related to improving educational outcomes for all learners.	Change course number, title and description.	
Fall 2008	N	CI	591	Action Research Implementation	3	Implementation of action research project designed in CI 590. Discuss issues related to implementation of action research project designed in CI 590. Learn skills to analyze data collected during implementation of action research proposal from surveys, interviews, focus groups, observation, journaling writing and concept maps. Develop critical thinking abilities to analyze, synthesize and evaluate research results. Present final project in written paper. Prerequisite: CI 590 Action Research project.		
Fall 2008	N	Coun	430/ 530	Abnormal Personality	3	Covers the causation, criteria, diagnosis and classification of the major psychiatric disorders. Emphasis is placed on both the traditional medical model and on the psychosocial model of diagnosis. Developmental aspects associated with normal and abnormal personalities will also be discussed. Prerequisite for the Counselor Education graduate programs and will not be credited toward the completion of the degrees. Recommended prerequisite: Psy 311.		
Fall 2008	M	Coun		Contemporary Couples, Marriage and Family Systems	3		Change credits from 2 to 3.	
Fall 2008	М	Coun	574	Family Life Cycle and Transitions	3		Change credits from 2 to 3.	
Fall 2008	М	Coun		Advanced Systemic Interventions: Couples and Families	3		Change credits from 2 to 3.	
Fall 2008	М	CS	311	Computational Structures	4	Introduces the foundations of computing. Regular languages and finite automata. Context-free languages and pushdown automata. Turing machines and equivalent models of computation. Computability. Introduction to complexity. An appropriate programming language is used for programming experiments. Prerequisite: CS 251.	Change description.	

Fall 2008	N	CS		Fucntional Logic Programming	3	Introduction to functional logic programming. Foundations and basic principles of this paradigm will be explained in some depth and complemented by encoding practical problems in a functional logic language using a leading compiler/interpreter. Focus on non-determinism and computations with incomplete information. Implementation techniques will be briefly discussed. Prerequisite: CS 558 Programming Languages.	
Fall 2008	N	CS	669	Scholarship Skills for Computer Science and Engineering	3	The purpose of this course is to make participants better scholars in Computer Science. In particular it attempts to help students become better researchers, better writers, better presenters, and better reviewers. It concentrates on reading, writing and composition skills: on the production and consumption of the "media" used by computer scientists to communicate professionally. At the completion of the course, students should be familiar with the tasks and activities of modern scholars in computer science. Prerequisite: admission into a Ph.D. program within MCECS.	
Fall 2008	N	CS		Programming Language Semantics	3	Introduction to the formal mathematical study of program meaning (semantics), using one or more approaches such as operational semantics, denotational semantics, or programming logics. Emphasis on rigorous mathematical development and formal proof techniques. Language features to be studied may include types and type safety, purity and imperative effects, functional and modular abstraction, polymorphism, higher-order functions, and object-oriented features. Recommended prerequisites: CS 558 and/or CS 557.	
Fall 2008	N	CS		Principles of Database Systems	3	This course explores the foundations of database systems, with a focus on data models and query languages. It will show how formal methods are applied to issues in database design and processing. Topics may include query formalisms and their equivalence, query transformation, semi-structured data models, dependencies and normal forms, logic and deductive databases, data language complexity, treatment of incomplete information, complex-value models, semantic models and classification, and temporal databases. Recommended prerequisites: CS 386 or CS 586 or equivalent course; familiarity with discrete math and logic that could be satisfied by CS 250/CS 251 or by Mth 356.	
Fall 2008	N	Ec	380	Introduction to Mathematical Economics	4	Economic concepts are explored using mathematical methods. Applications are drawn from a wide range of fields in economics including microeconomics, macroeconomics, economic growth, international trade, international finance, labor and environmental economics, industrial organization and development economics. Mathematical methods utilized include equations, functions, sets, total and partial differentiation, and linear algebra. Prerequisites: Mth 251, Ec 201, Ec 202.	
Fall 2008	М	Ec	480/ 580	Mathematical Economics	4		Change prerequisites.

Fall 2008	N	ECE	514	Electronics Packaging for Electrical and Computer Engineers	4	Introduction to electronics packaging; electrical aspects of package design, (signal and power integrity and EMC, electromagnetic modeling;) basic concepts in mechanical and thermal package design, (elastic, plastic, and visco-elastic properties, thermo-mechanical stress, fracture, conduction and convection;) packaging materials, (solders, polymers;) package reliability, (theory, testing, failure mechanisms, and the Physics of Failure approach to design;) current packaging research topics, (e.g. ECAs.) Prerequisites: Senior or graduate standing in ECE.
Fall 2008	М	ECE		Electrical Energy Systems Components	4	Introduces the following topics: three-phase power, per unit system calculations, impedance and reactance diagrams, nodal equations, bus admittance and impedance matrices, transformer and synchronous generator modeling, transmission lines parameters, steady state operation, generation models, basic power flow. Prerequisite: ECE 332.
Fall 2008	М	ECE		Electrical Energy Systems Protection and Control	4	Introduces the following topics: symmetrical components, fault studies, system protection fundamentals, numerical methods for symmetric and unsymmetrical operation, transmission line and system protection analysis, transmission line transient modeling, electromagnetic transients.  Prerequisite: ECE 332.
Fall 2008	N	ECE		Transmission Operation and Control	4	Introduces the following topics: state estimation, security analysis, contingency monitoring, optimal power flow, reliability, interchange of energy, market and pool operation. Prerequisite: ECE 441, 442, or consent of instructor.
Fall 2008	N	ECE		Generation Operation and Control	4	Introduces the following topics: power generation unit characteristics, economic dispatch, unit commitment, flow constraints and limited energy supply, automatic generation control, production cost models, interchange of power and energy, extended auction mechanisms and reliability.  Prerequisite: ECE 441, 442, or consent of Instructor.
Fall 2008	N	ECE		Energy Economic Systems	4	Introduces the following topics: Electric power industry, operation and information systems, optimization methods, information technologies, short-term electricity markets and locational marginal prices, risk management and financial derivatives, basics of public good economics, optimization methods. Prerequisite: ECE 441.
Fall 2008	N	ECE	548	Power System Protection	4	Introduces the following topics: relaying concepts & general philosophies, per unit calculations & symmetrical components, phasors, polarity and direction sensing, current/voltage transformers, protection fundamentals & basic design principles, system grounding principles, device protection, directional comparison, blocking & blocking pilot protection, line differential & phase comparison pilot protection, out of step tripping and blocking.  Prerequisite: ECE 442.
Fall 2008	N	ECE		Nanotechnology and Biosensors	4	Overview of basic materials and methods in developing "lab-on-a-chip" based devices. Materials section involves an analysis of silicon-based devices, polymer based devices and nanomaterial based devices.  Methods section covers the key features of micro fabrication, soft lithography, microfluidics, and nanofabrication. Applications section focuses on integration of micro and nanoscale structures for "lab-on-chip" devices. Prerequisites: Graduate Standing.

Fall 2008	N	ECE	641	Power System Planning	4	Introduces the following topics: regulatory issues, power quality, system design for reliability, transient and voltage considerations, distributed generation, information technology requirements, market implications, remedial action and contingency analysis, NERC requirements.  Prerequisites: ECE 441 and (one of ECE 541, ECE 542 or ECE 545).	
Fall 2008	N	ECE		Energy Systems Capital Budgeting	4	Introduces the following topics: decision analysis, frontier analysis, leontief industrial model, input/output model, financing decisions, strategy, dynamic simulation, portfolio theory, models and data, dynamics of asset models, forwards, futures and swaps, basic and advanced option theory, optimal portfolio theory, and general investment evaluation and management, profit at risk assessment and management. Prerequisite: ECE 545.	
Fall 2008	N	ECE		Sustainable Energy Systems	4	Introduces the following topics: alternative energy supplies, conservation, and environment issues of distributed power systems, solar, wind, tidal, geothermal, bio-fuel systems, and hybrid systems, impact of distributed generation and reliability as cogeneration, independent generation, or qualifying facility. Cogeneration considerations when electric energy is an alternative product by manufacturing companies. Prerequisite: ECE 545.	
Fall 2008	N	Ed	150	Teaching as a Career	2	Exploration of the challenges and privileges of teaching children and young adults in American public schools. Examines the purpose of schools and schooling, learning as a developmental process, and teaching as a skilled profession.	
Fall 2008	N	EMgt		Ethical Issues in Technology Management	4	Designed to meet the needs of engineers who are or will be moving into greater responsibility for management as they advance in the profession. Emphasizes the theory of ethical behavior as it relates to real world applications faced regularly in the business world today.	
Fall 2008	М	EMgt		Management of Engineering and Technology	4	Study of fundamental concepts of engineering and technology management to provide the students with an in-depth understanding of the underlying principles of this discipline. Innovation process, technological change, motivation and leadership theories applicable to engineers and scientists, technological entrepreneurship, strategic management of technology and system interfaces in existing and emerging technologies are discussed in the course. Ongoing engineering and technology management research is critically evaluated in classroom discussions. Case studies and team projects are included.	Change course description and prerequisites.
Fall 2008	М	EMgt		Communication and Team Building	4	Developing high performance teams for engineering- and technology-driven companies; fundamental concepts that make an effective team; building a high-performance team; the keys to high performance; converting risks into assets; the power of commitment and discipline, and constructive communication; getting results through team dynamics, creative problem solving, and interactive exercises. Prerequisite: graduate standing or consent of instructor.	Change course title, description and prerequisites.

Fall 2008	М	EMgt	525/ 625	Strategic Planning	4	Critical issues in shaping the competitive strategy for the engineering- and technology-driven companies in a turbulent business environment; key steps and end results of the planning process; corporate mission; Key Result Areas (KRAs) and situational analysis including strengths, weaknesses, opportunities, and threats in KRAs. Identifying planning assumptions, critical issues, setting objectives, formulating strategy. Leadership, organizational culture, and structure to support the implementation of a strategic plan as well as the strategic control systems. Case studies, presentations, term projects, teamwork, and interactive exercises. Prerequisite: graduate standing or consent of instructor.	Change title, description and prerequisites.
Fall 2008	N	EMgt		Strategic Management of Technology	4	Analyses of the structure and competitive dynamics of technology-driven industries; resource- and knowledge-based frameworks for competitive advantage, which are applied to technology-driven industries; as well as a discussion of corporate, international and global strategies for technology-driven ventures.	
Fall 2008	N	EMgt		Competitive Strategies in Technology Management		Provides perspectives, theories and methods used to analyze, formulate and implement competitive strategies in technology intensive industries. Provides a historical perspective on the evolution of competitive strategy theory and techniques including their foundations with key concepts and issues from strategic management thought leaders and present examples of the application of those concepts in business situations. Covers frameworks and tools used for strategy analysis, development and implementation. Prerequisite: graduate standing or consent of instructor.	
Fall 2008	М	EMgt	530/ 630	Decision Making	4		Change title.
Fall 2008	N	EMgt	531/	Technology Assessment and Acquisition	4	Fundamental concepts of assessing technologies including evaluation attributes and methodologies, impacts and impact relationships, and technology diffusion from individual, organizational, technical and market perspectives. Case studies, professional and research articles, and guest speakers from local companies included.	
Fall 2008	N	EMgt	532/ 632	Technology Forecasting	4	Fundamental concepts of technology forecasting. Differences between ordinary forecasting and technology forecasting, objectives of technology forecasting, tools and methods and their applications, selection of the right forecasting methodology, planning for technology forecasting, identifying attributes for forecasting, and managing technology forecasting. Topics are discussed through case studies, professional and research articles, guest speakers from local companies, and recently published books.	
Fall 2008	N	EMgt	533/ 633	Technology Transfer	4	Fundamental concepts of transferring technologies. Topics include university, industry and government collaboration for technology development, transfer of technologies from labs into product groups, research and development consortia, and international technology transfer. Case studies, professional and research articles, and guest speakers from local companies included.	

Fall 2008	М	EMgt		Advanced Engineering Economics	4	engineering management viewpoint. Time value of money, tax	Change title, description and prerequisites.	
Fall 2008	N	EMgt	536/ 636	RDM: R&D Management	4	Managerial aspects of Research and Development (R&D) including special issues in managing research at national labs, university settings, and industry labs. Reviews evaluation methods and multi objective analysis used for R&D project selection. Development analyzed across the following venues: Roadmap Development, Eco system Development, Platform Development, Product Development, Technology Development, Prototype Development, Initiative Development. Focus on integration of research and development functions; project management challenges resulting from the uncertain nature of R&D and the difficulties in measuring on-going R&D outputs.		
Fall 2008	M	EMgt		Benchmarking Using Data Envelopment Analysis	4		Change title, description and prerequisites.	
Fall 2008	N	EMgt	638	Decision Support Systems: Data Warehousing	4	Critical issues in developing data warehouse for decision support systems.  Examines when and why an organization needs a data warehouse for decision support systems; how to organize data in a data warehouse; complications in designing a data warehouse system; and identifying resources.		
Fall 2008	М	EMgt	540/ 640	Operations Research	4	engineering and technology management decisions. The primary	Change title, description and prerequisites.	

Fall 2008	N	EMgt		Organizational Project Management	4	Critical issues in organizational project management in technology-driven companies including characteristics and structure of organizational project management, linking competitive strategies with projects and project portfolios, and project culture. Includes: standardizing project management processes and project management maturity models, information systems, building a project office and developing organizational project metrics, behaviors and competencies of project managers, and the role of top management. Case discussions and term projects are included.	
Fall 2008	M	EMgt	545/ 645	Project Management	4	Critical issues in the management of engineering and high technology projects; analysis of time, cost, performance parameters from the organizational, people, and resource perspectives; project planning evaluation and selection, including project selection models; project and matrix organizations; project teams; scheduling and termination of projects. Case discussions and term project are included in the course. Prerequisites: EMgt 520/620 or consent of instructor.	Change title, description and prerequisites.
Fall 2008	M	EMgt		Project Management Tools	4	An in-depth study and review of the major problems and analytical techniques used in the planning and implementing of major industrial projects. Specific focus on three primary areas: (1) time management: network scheduling techniques, including CPM/PERT, Critical Chain, etc., (2) cost: earned value analysis, and (3) risk: management techniques such as Monte Carlo analysis. An emphasis is placed on the integration of the techniques in the areas. The contingency approach to designing project management toolbox based on the three areas of time, cost, and risk management is included. Prerequisites: EMgt 545/645 or project management experience.	Change title, description and prerequisites.
Fall 2008	N	EMgt		New Product Development	4	Examines complete product development process and key issues in new product development critical to developing profitable products in today's technology oriented companies. Topics include technology integration, disruptive technologies, concurrent engineering, and creating innovative environments. Review of cases and published articles addressing these issues. Students develop a plan for a new product including risk assessments in areas such as manufacturing, design, and test.	
Fall 2008	N	EMgt		Managing New Technology Introduction	4	Management procedures and key underlying concepts for effective planning, development, and introduction into volume production utilizing new technology. Emphasis on semiconductor technology and manufacturing but most principles and methodologies are generally applicable to both hardware and software.	
Fall 2008	N	EMgt		Management of Technology Innovation	4	Describes and explains phenomena pertaining to technological innovation. Focus on the interplay between engineering/technology and the economical, cultural, psychological, social and technical aspects of the engineering environment. Provides technology managers a toolkit to make engineering and technical innovations successful. Also covers how engineering and technology management enables technological innovation.	

Fall 2008	M	EMgt		Manufacturing Systems Management	4	Traditional and emerging techniques in manufacturing management; the evolution of concepts from EOQ to MRP and JIT including what has gone wrong with them. Other management level issues include aggregate production planning, enterprise requirements planning, and concurrent engineering. Prerequisite: Background in manufacturing at the level of EMgt 550/650, equivalent, or consent of instructor.	Change course description and prerequisites.	
Fall 2008	D	EMgt		Intelligent Manufacturing Systems				
Fall 2008	М	EMgt	553/	Manufacturing Systems Simulation	4	Introduction of discrete simulation techniques for the modeling of random processes and probabilistic events in the simulation of manufacturing systems; concepts of systems modeling with emphasis on the use of an animated simulation package throughout the course. Prerequisite: graduate standing or consent of instructor, basic knowledge of probability and statistics.	Change course description and prerequisites.	
Fall 2008	M	EMgt		Expert Systems in Engineering	4		Change course number to Emgt 571/671.	
Fall 2008	М	EMgt	555/ 655	Technology Marketing	4	This course is designed to introduce students to the special issues faced by managers marketing technological products in markets characterized by rapid environmental change. Topics include an examination of the marketing/engineering/manufacturing interface, product innovation strategies, value-based pricing, buyer behavior and strategic selling, competitive market analysis and positioning, and distribution strategies. Emphasis is placed on strategies for marketing technology products in industrial markets. Prerequisite: graduate standing or consent of instructor.	Change prerequisites.	
Fall 2008	М	EMgt	560/ 660	Total Quality Management	4	Critical principles and procedures of quality management in a competitive global environment; contemporary definitions of quality; quality in production/services; quality economics; quality philosophies; planning, organizing, and controlling for quality; human resource and improvement strategies and QC tools. Case studies, presentations, term projects, and teamwork. Prerequisite: graduate standing or consent of instructor.	Change course description and prerequisites.	
Fall 2008	N	EMgt		Technology Entrepreneurship	4	Examines how to start and grow a high technology company or high technology venture. Covers the complete venture creation process: key issues in high tech markets, startup finance, growth strategies and exit strategies. Guest lectures by practicing entrepreneurs, executives and financiers. Student teams create a technology startup business around technology that they develop, write a business plan and present their technology business idea to a financier.		
Fall 2008	N	EMgt	664	Probability and Statistics for Technology Management	4	Provides coverage of probability and statistics concepts with a balance of both engineering and managerial orientations with relevant applications. Topics include probability distributions, sampling, statistical inference, hypothesis testing, and regression. Technology management research papers using these approaches will be examined and a group project will apply these techniques to real world cases.		

Fall 2008	М	EMgt		Research Methods for Engineering and Technology Management	4	This course provides coverage of a range of techniques employed in technology management research and issues confronting new researchers. It is open to students enrolled in graduate programs or considering Ph.D. programs both in EMgt and from other departments. Statistical topics include a variety of statistical techniques including proper selection, use, and interpretation of parametric, nonparametric, and multivariate techniques. Additional topics covered include literature review methods and tools, hierarchy of research questions, survey design, research ethics, and visual display of quantitative information. Prerequisites: probability and statistics or consent of instructor.	Change title, description and prerequisites.	
Fall 2008	М	EMgt		Expert Systems in Engineering	4		Change course number from Emgt 554/654.	
Fall 2008	М	EMgt	590/ 690	Engineering and Technology Management Synthesis	4		Change title.	
Fall 2008	D	Eng	310	Literature and the Environment				
Fall 2008	N	Eng	325	Grammar and the Sentence	4	Focus on sentence-level discourse to cover issues of syntax, usage, and punctuation. ENG 325 provides background for WR 435/535 (Grammar for Writers) and ENG 425/525 (Practical Grammar).		
Fall 2008	N	Eng	331	Introduction to Rhetoric and Compositon Studies	4	Introduction to contemporary issues in rhetoric and composition studies by way of the rhetorical tradition of Greece, the rise of composition in the modern North American university, and their relation to the processoriented approach to composition which has dominated composition instruction since the 1960's. Focuses are on such perennial issues as the relationship between writing and the self, the link between writing and "content," the relationship of writing to speech and reading, the political dimensions of writing, and the role of the audience in composing.		
Fall 2008	M	Eng		African American Literature	4,4,	A study of African American literature from its oral and folk beginnings to the present.	Change description, remove prerequisites.	
Fall 2008	M	Eng	518	College Compositon Teaching	1	Introduces and develops the theoretical and practical expertise of the graduate teaching assistant in the area of college composition teaching. May be taken up to three times for credit. Prerequisite: appointment to teaching assistantship in English Department.	Change description and credit hours.	
Fall 2008	N	Eng		Advanced College Composition Teaching	1	Continues the development of the theoretical and practical expertise of the graduate teaching assistant in advanced areas of college composition teaching. May be repeated up to three times for credit. Required prerequisite: appointment to 2nd year teaching assistantship in English Department.		
Fall 2008	М	EPFA		Adult Learning and Motivation	4		Change title.	
Fall 2008	M	EPFA	522	Teaching Diverse Adult Learners	4		Change title.	

Fall 2008	M	EPFA				Change prefix from EPFA to ELP.	As of Fall 2008 all EPFA courses change their course prefix from EPFA to ELP - to reflect the new program and department name change to Educational Leadership and Policy.
Fall 2008	N	ESR	335 Introduction to Environmental Management	4	Focuses on environmental project management. Survey of agencies and entities that currently do management and under what authority. Introduction to general theory of environmental management and strategies that are being used. Case studies of local management project and issues. Prerequisite: ESR 222.		
Fall 2008	N	ESR	460/ Air Quality 560	4	An overview of urban air quality issues facing cities in the US and globally. Examine effects of air pollution on public health and environment, as well as technologies and regulatory practices. Review pollution measurement and modeling techniques. Recommended prerequisite: ESR 320.		
Fall 2008	N	ESR	480/ Coastal Marine Ecology 580	4	Introduces the relationships between marine species and their environment, intra- and inter-specific interactions, and factors structuring marine communities. Community structure and distribution presented in the context of both oceanography and coastal zone ecology. Marine conservation issues, including fisheries, addressed. A field trip required. Recommended prerequisite: ESR 321.		
Fall 2008	N	ESR	483/ Marine Conservation and 583 Management	4	Discussion of the state of the oceans, and ecological differences between marine and terrestrial/aquatic systems. Discussion of the major threats to ocean systems. Discussion with focus on solutions in terms of protected areas, management and policy strategies, and various aspects of the human dimension. Recommended prerequisite: ESR 335.		
Fall 2008	N	ESR	485/ Ecology and Management 585 of Bio-Invasions	4	Overview of invasive species biology, ecology and management with a strong focus on aquatic invasive species and invasive species in Portland. Builds upon the basic fundamentals of ecology and also addresses economics, ethics, policy, and management practices. Recommended prerequisite: ESR 321.		
Fall 2008	N	ESR	588 Environmental Sustainability	4	Sustainability in natural and human-influenced ecosystems, with a focus on processes of regeneration, maturity, collapse and renewal. Topic areas include natural provisioning of ecosystem services, processes of change in ecological systems, interactions among ecological and social systems, economic valuation of ecosystem services, and ecosystem management.		
Fall 2008	D	Fin	226 Legal Environment of Business				

Fall 2008	D	Fin	411	Laws of Real Estate, Personal Propoerty, Trusts, and Estates		
Fall 2008	D	Fin		Advanced Financial Management		
Fall 2008	N	FPA	101	Perspectives in the Arts	4	Foundational experience for the BA/BS in Arts Studies. Provides an introduction to fundamental methodologies and ways of thinking that give students the tools to analyze and deconstruct works of art for meaning, function, success and value. Composed of combinations of readings, activities and assignments, discussions, videos, slides and out of class performances, showings and exhibitions. Students will engage in the practice of making art as well as in exploring the relationships among the various art fields. [NEW, APPROVED LAST YEAR, NOT IN CATALOG]
Fall 2008	N	FPA	301	Creative Thinking in the Arts	4	Designed to introduce students to the theoretical context and practice of creative thinking. While affording freedom for discovery, this course will also offer a focused perspective to strengthen creative thinking, define personal process, construct effective strategies for collaboration, and develop a creative project. Each student works to identify, access and broaden individual creative abilities. Each session includes practical application of a variety of creative techniques, including artistic, expressive and interdisciplinary strategies; explorations in mind/body connection; sensory and visualization exercises; and activities which utilize multiple intelligences. Intellectual understanding emerges from both theory and historical context, but will be developed primarily through a regime of self-understanding and activity. Recommended: FPA 101 or similar coursework; upper division standing.
Fall 2008	N	FPA	445	Senior Project	4	Focuses on the body of coursework undertaken in the BA/BS Arts Studies curriculum in an original creative work or comparable experience. This work may take the form of a performance, (with the student as creator/producer and/or performer), or a written thesis, gallery exhibition, internship (including but not limited to teaching), media work, practicum, or some other acceptable format. Prerequisite: 40 credits completed in Arts Studies coursework or similar coursework; upper division standing.
Fall 2008	D	Fr	415/ 515	Business French		
Fall 2008	D	Fr	1	Nineteenth-century French Literature		
Fall 2008	D	Fr	434/	Twentieth-century French Literature		
Fall 2008	D	Fr	494/ 594	French Linguistics		
Fall 2008	D	Fr		Medieval Works in Translation		
Fall 2008	D	Fr	584	French Stylistics		
Fall 2008	D	G	437	Analytical Methods		

Fall 2008	D	G	492/ Topics in Geodynamics 592				
Fall 2008	М	Geog	331 Geography of Globalization	4	An introduction to theories and concepts related to global economic activities within agriculture, manufacturing, service and information industries. The course focuses on global processes and linkages between local and global economies. Includes geographic distributions, areal interaction among urban and regional economies, the processes of regional economic development, and international economic linkages. Recommended prerequisite: upper-division standing.	Change course title and description.	
Fall 2008	М	Geog	348 Cultural and Political Ecology	4	Introduction to geographic perspectives on cultural and political ecology. Investigates cultural adaptation and environmental change from an ecological perspective, focusing on biomes, cultural adaptations within them and the political structures that influence cultural adaptations. Particular attention to traditional societies and the impacts of development. Recommended prerequisite: upper-division standing.	Change course title and description.	
Fall 2008	М	Geog	488/ Geographic Information 588 Systems I: Introduction	4	Introduces the general principles and application of Geographic Information Systems (GIS). Topics include geographic data models, the nature of geographic data, databases, data collection, mapmaking, and spatial analysis techniques. Students will use GIS software to complete a series of computer lab exercises that demonstrate a variety of approaches to the analysis and display of spatial data. Students enrolling in this class also must register for a computer lab section. Also listed as USP 591. Prerequisite: Geog 380 or equivalent experience.	Change description.	
Fall 2008	N	Geog	493/ Digital Terrain Analysis 593	4	Introduction to the theory and methods of the generation, compilation, analysis, and applications of digital elevation data. Topics include GIS terrain data models, digital photogrammetry, LiDAR data processing, terrain surface analysis, terrain visualization, and watershed delineation. Computer lab included. Prerequisites: GEOG 488 or 588.		
Fall 2008	N	Hst	104, World History 105, 106	4,4,4	A survey of world history from earliest times to the present, combining both chronological and thematic approaches. HST 104: Origins to 1000 CE, HST 105: 1000 – 1600 CE, HST 106: 1500-present.		
Fall 2008	D	Intl	560 Political Development in Modern Turkey				
Fall 2008	D	ISQA	435 Business Research Design and Analysis				
Fall 2008	D	ISQA	461 Operations Research Techniques				
Fall 2008	D	ISQA	462 Decision Simulation				
Fall 2008		ISQA	463 Mathematical Modeling in Decision Making				
Fall 2008		ISQA	525 Database Desgin				
Fall 2008	D	ISQA	530 System Architectures				
Fall 2008							

Fall 2008	D	Jpn		Japanese Phonetics and Phonology			
Fall 2008	N	JSt	201	Introduction to Jews, Judaism, and Modernity	4	Provides a historical and conceptual account of the Jewish encounter with modernity. Primary emphasis on enlightenment and post-enlightenment transformations in western and eastern Europe, including emancipation, religious reform, Hasidism, and Zionism. Topics include the Holocaust, the rise of major Jewish centers in the United States and the State of Israel, and Sephardic and Middle Eastern Jewish encounters with modernity.	
Fall 2008	N	JSt	299	Special Studies	1-4		Credit to be arranged.
Fall 2008	N	JSt	399	Special Studies	1-4		Credit to be arranged.
Fall 2008	N	JSt	401	Research	1-8		Credit to be arranged.
Fall 2008	N	JSt	405	Reading and Conference	1-8		Credit to be arranged.
Fall 2008	N	JSt	409	Practicum	1-8		Credit to be arranged.
Fall 2008	N	JSt	410	Special Topics	1-4		Credit to be arranged.
Fall 2008		Lib		Student Teaching	6	Beginning student teaching in a library media center under the direction of a supervising library media teaching and university supervisor.  Observation and participation in teaching, administrative and other responsibilities of a library media specialist. Opportunities for involvement in student learning activities, development of teaching skills, basic skills in management and discipline of students. Prerequisites: admission to the program and approved application.	
Fall 2008	D	ME		Pneumatic and Hydraulic Systems			
Fall 2008	D	ME		Integrated Computer- aided Design			
Fall 2008	D	Mgmt	470/	American Business History			
Fall 2008	D	Mgmt		Business/Government Relations			