



Educational Leadership

College of Education

COLLEGE OF EDUCATION DEAN

Claire C. Cavallaro

DEPARTMENT OF EDUCATIONAL LEADERSHIP

DEPARTMENT CHAIR

Dr. Louise Adler

DEPARTMENT OFFICE

Education Classroom Building 207

DEPARTMENT WEBSITE

<http://ed.fullerton.edu/edleadership>

PROGRAMS OFFERED

Master of Science in Education

Concentration in Educational
Administration

Preliminary Administrative Credential

Professional Administrative Credential

School Business Management

Certificate (University Extension)

Doctor of Education in Educational
Leadership

FACULTY

Louise Adler, Keni Cox, Joyce Lee, Ron
Oliver, Linda Orozco, Ken Stichter

MISSION

Our mission is to prepare school leaders who demonstrate strategic, instructional, organizational, political and community leadership; and to provide the community a source of scholarship and assistance in interpretation and application of scholarship.

GOALS OF THE DEPARTMENT

The goals of the department are to prepare educational leaders who demonstrate a wide array of knowledge, skills, attributes and commitment.

Strategic Leadership

Leadership requires the ability to develop with others vision and purpose, utilize information, frame problems, exercise leadership processes to achieve common goals, and act ethically for educational communities.¹

A school administrator is an educational leader who promotes the success of all students by facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared and supported by the school community.²

A school administrator is an educational leader who promotes the success of all students by modeling a personal code of ethics and developing professional leadership capacity.²

Instructional Leadership

Leadership requires the ability to design appropriate curricula and instructional programs, to develop learner-centered school cultures, to assess outcomes, to provide student personnel services, and to plan with faculty professional development activities aimed at improving instruction.¹

A school administrator is an educational leader who promotes the success of all students by advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning and staff professional growth.²

Organizational Leadership

Leadership requires the ability to understand, initiate and/or improve the organization, implement operational plans, manage financial resources, and apply effective management processes and procedures.¹

A school administrator is an educational leader who promotes the success of all students by ensuring management of the organization, operations, and resources for a safe, efficient, and effective learning environment.²

Political Leadership

Leadership requires the ability to act in accordance with legal provisions and statutory requirements, to apply regulatory standards, to develop and apply appropriate policies, to understand and act professionally regarding the ethical implications of policy initiatives and political actions, to regulate public policy initiatives to student welfare, to understand.¹

A school administrator is an educational leader who promotes the success of all students by understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context.²

Community Leadership

Leaders must collaborate with parents and community members; work with community agencies, foundations, and the private sector; respond to community interests and needs in performing administrative responsibilities; develop effective staff communications and public

relations programs; and act as mediators for the various groups and individuals who are part of the school community.¹

A school administrator is an educational leader who promotes the success of all students by collaborating with families and community members, responding to diverse community interests and needs, and mobilizing community resources.²

¹ NCATE-Approved Curriculum Guidelines for Advance Program in Educational Leadership 1995.

² California Professional Standards for Educational Leaders 2001.

PHILOSOPHY OF THE DEPARTMENT

Administration of schools for the 21st century demands that education leaders demonstrate:

- Commitment to high standards;
- Strong ethical values;
- Credible instructional leadership;
- Understanding of social and political trends and the changing role of education in our society;



- Problem solving ability and the skills necessary to promote and adapt to change and use collaboration to build a shared vision for schools;

- Capacity to collaborate effectively with a wide range of

non-school agencies and community organizations which can help schools achieve their mission;

- Commitment to lifelong learning which empowers students, staff, and themselves.

We believe that:

- Every child must achieve academic success in school.
- Every school must educate for an American democracy that values the norms and practices of diverse groups and at the same time celebrates shared community values;
- School leaders must be reflective practitioners;
- Knowledge is evolving and socially constructed and that learning is produced through an interaction of different perspectives that enable students to connect their education to their experiences.

Policies of the Department

Candidates for our programs will be selected on the basis of leadership potential and commitment to the improvement of education, and will engage in a rigorous course of study.

The department is committed to a continual effort to plan and revise programs in collaboration with university colleagues, our students, and the leaders of the schools in the communities we serve.

The courses offered by the department are arranged in a specific order, which must be followed by all students. Cohorts of students are formed and move through the courses as a group.

The department expects every student to use their university email address and check their university portal regularly. The university has computing facilities that can be used by students to email or access the web.

Credential Requirements

Students who wish to apply for credential programs must complete a separate applicant portfolio. The requirements and information are available at <http://ed.fullerton.edu/edleadership/admissions.htm>.

Students applying for the Preliminary Administrative Credential Program are required to have three years teaching experience when entering the program. Waiver requests for 1-2 years of experience are considered for those starting a second career or under unusual circumstances.

The minimum GPA required to be recommended for a certificate of eligibility or a credential is an average of 3.0 for all classes taken in the credential program.

Review at the End of the First and Second Semester

Any faculty member who may have concerns about the progress of a student in the program or their suitability to be recommended for administrative positions in the public schools may request a department review of the student's performance at the end of the student's first or second semester in the program. The issue will be considered at a department meeting.

Should the consensus of the faculty confirm the concerns, the department chair will provide specific written information to the student as to the nature of the concerns and the steps necessary to resolve the concerns. The chair will meet with the student and the cohort leader to discuss the concerns and necessary steps to resolve the concerns.

In situations where the continued participation of the student in the program is not recommended by the department, the policy and procedures for removing a student from the program will be followed.

ADMINISTRATIVE SERVICES CREDENTIAL

The Administrative Services Credential programs of the Department of Educational Leadership are approved by the California Commission on Teacher Credentialing. Because regulations governing these programs change, students should contact the department office for current information and requirements.

Preliminary Credential

The Preliminary Administrative Services Certificate/Credential is the "Tier I" administrative credential in California, requiring a total of 26-31 units of work (which may be incorporated into the master's degree program). Upon receipt of the Preliminary credential, one is eligible for employment as an administrator in California public schools. A master's degree is required for California State University to recommend a candidate for this credential.

Professional Credential

The Professional Administrative Services Credential is the "Tier II" administrative credential.

Candidates with strong administrative experience and a strong professional portfolio can complete the Demonstration of Mastery Program at CSUF in as little as one semester. Candidates must hold a Master's Degree in Educational Administration and/or completed an accredited Preliminary Administrative Credential Program.

Students enrolled in the Ed.D. program complete the standards-based program requiring a total of 26 semester hours. Please note that holding a job as administrator and the Preliminary Credential are prerequisites to entry to the program for the Professional Credential.

SCHOOL BUSINESS MANAGEMENT CERTIFICATE

This certificate is offered through Cal State Fullerton's University Extended Education program. It provides a 25-unit specialization for people who work in or want to move into the field of school business management. Classes reflect general skills and specific functions of school business management, capped by a practicum designed to demonstrate what has been gained in classroom study. The instructors are practitioners with successful experience as school business managers.

For further information on the program including program objectives, eligibility, and registration, please visit the University Extended Education website at <http://www.csufextension.org>.

MASTER OF SCIENCE IN EDUCATION (EDUCATIONAL ADMINISTRATION)

The principal objective of the curriculum is to prepare carefully selected individuals for leadership positions in public schools. The program is designed to help these individuals gain the technical knowledge and scholarship requisite to high achievement in these positions.

Application Deadlines

To assure full consideration, please complete the online applications before March 1st for the fall semester and October 1st for the spring semester (see <http://www.csumentor.edu>).

Application deadlines change depending on demand and enrollment allocations. Check with the department for current information.

Admission to Graduate Standing: Conditionally Classified

University requirements include: a baccalaureate degree from an accredited institution and a grade-point average of at least 3.0 in the last 60 semester units attempted (see "Graduate Regulations" section of this catalog for complete statement and procedures). In addition, an applicant should have a successful teaching experience in an elementary or secondary school. (If such experience is not available, other experience in related fields is an alternative if approved by a graduate adviser before starting the program.) A candidate portfolio is also required.

Graduate Standing: Classified

A student who meets the admission requirements and has a minimum 3.0 GPA in previous academic work may be granted classified graduate standing upon approval of a study plan.

Study Plan

The study plan must include 30 units of course work. Course requirements include field experience and a project.

No more than nine units of postgraduate work taken prior to classified standing may be applied to a student's master's degree program.

The adviser-approved 30 units (minimum) on the study plan will include:

Core Course Work (8 units)

- Ed Admin 503 Organizational Leadership (3)
- Ed Admin 505 Instructional Leadership (4)
- Ed Admin 510 Research Design (3)

Concentration Course Work (20 units)

- Ed Admin 561 Policy, Governance, Community Relations (3)
- Ed Admin 563 Human Resource Administration (2)
- Ed Admin 564 School Law and Regulatory Process (3)
- Ed Admin 565 School Finance (3)
- Ed Admin 566 Leadership in Public Schools (3)
- Ed Admin 567 Fieldwork (1-2,1-2,1-2)

Project (3 units)

- Ed Admin 597 Project (1,1,1)

For advisement and further information, consult the graduate program adviser, Dr. Ron Oliver (roliver@fullerton.edu).

Cohort Order of Classes

Once students are admitted to the Tier I/Preliminary Administrative Credential Program, they are required to take all of the courses in a prescribed order shown below.

FALL START	SPRING START
Fall 597	Spring 597*
Fall 505	Spring 505
Fall 567	Spring 567
Spring 510*	Summer 561
Spring 503	Summer 567
Summer 565	Summer 503
Summer 561	Fall 510*
Summer 597*	Fall 565
Fall 563	Spring 563
Fall 564	Spring 564
Fall 567	Spring 567
Spring 566	Summer 566
Spring 567	Summer 567
Spring 597*	Summer 597*

* May not be required of credential only students.

Prior approval is required from the cohort leader and department chair to change the order or timing of courses.

DOCTOR OF EDUCATION (ED.D.) IN EDUCATIONAL LEADERSHIP

The independent Ed.D. in Educational Leadership had received campus and CSU system approvals at the time this Catalog went to press. Full implementation awaits final approval by the university's accrediting organization (WASC), which is anticipated in June 2007. Check with the Department of Educational Leadership for a complete listing of updated program requirements, new curriculum additions, and course scheduling.

The mission of the Ed.D. Program at CSUF is to prepare educational leaders who ethically apply critical skills of evaluation, analysis, synthesis, and action to insure excellence and equity in educational practice as they serve as stewards to the education community. A distinguishing feature of the program is its emphasis on the integration of theory, research, and practice in preparing leaders to plan, initiate, and assess local reforms to improve educational programs and outcomes. Attention to field-based study of educational problems is intended to

improve linkages between graduate preparation, research, and practice and contribute to both the knowledge base in education and the improvement of public education.

The program prepares leaders for PreK-14 education who understand the critical changes educational institutions are facing; who can create, lead, and study innovative reforms; and who are committed to critical examination of educational practices and policies. It achieves this goal in large part through the active involvement of a distinguished and multi-disciplinary group of faculty a strong group of scholars committed to this innovative graduate program and its purpose of transforming educational institutions for the twenty-first century.

The distinctive features of the program are:

- Addressing regional needs through partnerships with PreK-12 and community college leaders in which the partners participate substantively in program design, candidate recruitment and admissions, teaching, and program assessment and evaluation.
- Using pedagogical practices that recognize needs and contributions of professionals enrolled in the program.
- Focus on problems of educational practice addressing important educational needs.
- Involvement of faculty with varied disciplinary perspectives and integration of different perspectives in examining field-based problems.
- Use of a range of research methods to focus on actions to improve educational outcomes for all students.
- Focus on addressing curricular, instructional, assessment, and governance reforms and the implications for diverse educational settings.

Admissions Requirements

Minimum requirements for admission include:

- A. an earned baccalaureate degree and master's degree from accredited institutions of higher education with a GPA in upper division and graduate study of 3.0 or above;
- B. sufficient preparation and experience pertinent to educational leadership to benefit from the program;
- C. submission of Graduate Record Examination (GRE) scores on the three GRE tests, taken within the last five years;
- D. demonstrated educational leadership potential and skills including successful experience in school, postsecondary, community, and/or policy leadership;
- E. demonstrated academic excellence, problem-solving ability, and an interest in critically assessing and bringing about improvements within current educational policies and practices;
- F. three confidential recommendations attesting to the leadership ability and scholarship of the candidate;
- G. a written statement of purpose reflecting understanding of the challenges facing the public schools or community colleges/institutions of higher education in California;
- H. professional resume;
- I. examples of professional writings;
- J. response to a writing prompt administered on-campus prior to the interview;
- K. a personal interview with the Admissions Committee.

Meeting the minimum requirements qualifies an individual for consideration, but does not guarantee admission to the Program. Admission will be granted on a competitive basis. The Ed.D. in Educational Leadership will not include a foreign language requirement.

Specializations

Two specializations will focus on the development of PreK-14 leaders: PreK-12 Educational Leadership and Community College Leadership. Pending WASC approval, the PreK-12 specialization will begin accepting students for the 2007-08 year. The Community College specialization curriculum is being developed with the expectation that applications will be accepted for 2009.

Program of Study

The program includes two summers and two complete academic years of course work, followed by a period during which the candidate advances to candidacy and undertakes the dissertation. Classes during the academic year will be held in the late afternoons and evenings and occasionally on weekends to accommodate the schedules of working professionals.

All candidates are required to be enrolled at CSUF for a minimum of six semesters.

The courses offered throughout the program are expected to be taken by individuals who also hold full-time positions. Their full-time employment is viewed as an asset and as providing important opportunities to apply theoretical and empirical material covered in their coursework. The program of study distributed over 12 months will facilitate (a) integration of graduate studies and practice, (b) periods of intensive study among candidates, and (c) opportunities to work with faculty from CSU Fullerton.

Dissertation

All students in the CSUF Ed.D. program will complete a rigorous research-based dissertation that integrates theory and research in the study of educational practice. The dissertation will include the results of the candidate's independent research and will typically focus on examination of (a) an educational problem, (b) a practice or program, or (c) an educational policy or reform. Most dissertations will be studies undertaken in the local context, having the potential to contribute to solutions of local educational problems. Dissertations will utilize a range of qualitative and quantitative research and evaluation methodologies. The dissertation will present the results of the candidate's independent investigation in a manner that contributes both to professional knowledge in education and to the improvement of educational practice. Examples might include studies examining and/or evaluating reforms in curriculum and instruction, professional development, assessment, and applications of technology.

Each Ed.D. student's dissertation must conform to the CSU regulations and specifications with regard to format and method of preparation as described in Manuscript Preparation: Standards and Procedures for Dissertations. Candidates in the program will be expected to attend information sessions in which procedures for dissertation manuscript preparation and filing are presented.

Defense of Dissertation

During a final oral examination the candidate defends the dissertation. The dissertation defense will address the theoretical and conceptual background, relevant literature, data collection techniques, data analysis strategies, and results and implications concerning the question(s) studied.

EDUCATIONAL ADMINISTRATION COURSES FOR M.S. AND PRELIMINARY CREDENTIAL

Courses are designated as EDAD in the class schedule.

Students who desire only isolated courses from the program are normally denied admission to such courses.

501A,B,C Collaborative Professional Portfolio Assessment of Competence for School Leaders (4)

Prerequisite: one year of experience as a school administrator. Comprehensive course for Professional Administrative Services (Tier II) credential candidates. Candidates will demonstrate mastery of fieldwork performance standards by preparing a professional portfolio of work-embedded artifacts, evidences and documentation. A collaborative assessment process (student, university faculty, mentor, colleagues in the course) will establish the candidate's competency in each of the California Standards for Educational Leaders adopted by the California Commission on Teacher Credentialing. Successful completion of the course provides for university-approval and recommendation to the CCTC for the full and clear Professional Administrative Services Credential (Tier II). This course is a post-master's credential course, offered credit/no credit only.

503 Organizational Leadership (3)

Prerequisite: admission to Preliminary Credential and/or master's program. The focus of this class is on using organizational theory and leadership studies to understand schools and how to bring about change in schools. The course includes study of the organization, structure, and cultural context of schools and the study of techniques used to guide, motivate, delegate, build consensus, and lead others in the achievement of goals.

505 Instructional Leadership (4)

Prerequisite: admission to credential and/or M.S. program. Study of approaches for advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning and professional growth.

510 Research Design (3)

Prerequisites: admission to Preliminary Credential and/or master's program and a grade of "B" (3.0) or better in Ed Admin 505. Introduces students to the major forms of both quantitative and qualitative research used in education. Students will learn how to select an appropriate research method and the characteristics of sound research. Stress will be placed on making reasoned judgments as consumers of research as well as selecting appropriate information collection strategies as school leaders.

561 Policy, Governance, Community Relations (3)

Prerequisite: Ed Admin 503. In this course students study the factors which determine public policy with regard to education, the roles of the various levels of government in controlling public education, how to identify various interest group, and how to communicate effectively about school programs.

563 Human Resource Administration (2)

Prerequisite: Ed Admin 503. This course focuses on the importance and dimensions of human resource administration and the need to attract, retain, develop, and motivate school personnel in ways that enhance learning and professional development and that lead to positive and productive school settings. Includes study of collective bargaining and employee evaluation in public schools.

564 School Law and Regulatory Process (3)

Prerequisite: Ed Admin 503. This course reviews the federal, state and local educational laws, regulations and other policies that govern schools and the requirements that administrators act in accordance with these laws and regulations in ways that are ethically and legally defensible.

565 School Finance (3)

Prerequisite: Ed Admin 503. Course reviews effective management of fiscal resources and business services. The course covers the sources of income to public schools: federal, state, local, and private (including grants and foundations). It also reviews sound budgetary and business procedures for schools.

566 Leadership in Public Schools (3)

The course focuses on the leadership roles of principals, co-administrators, and supervisors in public schools. Content includes leadership, reflective practice, human relations, the administrator's role in group process, site based decision-making, school climate change agent roles, and planning models. Violence and school safety issues such as gangs will be studied.

567 Fieldwork (1,2)

Prerequisite: admission to credential and/or master's program. Directed fieldwork in administrative areas in school. May be repeated for up to 3 units credit.

597 Project (1-2)

Prerequisites: Ed Admin 510. Individual research on a graduate project, with conferences with a faculty adviser, culminating in a project.

599 Independent Graduate Research (1-3)

Prerequisite: consent of instructor. Independent inquiry for qualified students.

EDUCATIONAL ADMINISTRATION AND LEADERSHIP DOCTORAL CLASSES

Courses designated EDD in the class schedule.

600 Organizational Theory and Challenges for Instructional Leadership (3)

Examines organizational theories and their application to the role of educational leaders. Also explores theories from leadership and management literatures, which predicate the conceptual development of the role of educational leadership. Explores implications of these theories for effective performance as educational leaders.

601 Methods of Research: Quantitatively Based Methods (3)

This course provides an introduction to the conceptual and methodological bases of quantitative analysis in educational leadership. Topics include issues of research design, measurement and statistical analysis.

602 Methods of Research: Qualitatively Based Methods (3)

Students acquire the knowledge, dispositions, and critical thinking skills necessary for conducting field research and apply these skills to designing and implementing applied research projects that create knowledge for solving dilemmas related educational leadership.

603A Research Elective: Specialization in Qualitatively Based Tools (3)

Prerequisite: ED.D. 602. Develops advanced skills in identifying, conducting, analyzing, and interpreting field research in education toward the purpose of improving education.

603B Research Elective: Specialization in Quantitatively Based Tools (3)

This course will discuss a collection of quantitative methods and applications related to institutional-based interventions studies. This includes methods such as multilevel modeling and value-added techniques, growth modeling techniques, and latent variable modeling. Applications include evaluation of reading achievement programs, growth modeling of school accountability, studies of high-school and college dropout, school- or college-based preventive programs related to conduct disorder, ADHD, suicide, alcohol abuse and dependence. Assignments will be both applied and analytical, involving reporting and discussions of currently ongoing and planned studies as well as computer analyses where students use packages such as SAS, SPSS, LISREL, and HLM. (Prerequisites: ED.D. 601).

604 Applications of Research: Forecasting and Planning (3)

Students investigate theories and methods that promote accurate forecasting of the impact of social, economic, political, cultural, academic, and demographic trends as they affect educational institutions. Emphasis is also placed on how these indicators can be used to engage effective planning.

605 Applications of Research: Collection and Analysis of Assessment Data in PreK-12 Education (3)

Methods of system-level data collection and analysis of outcomes of education are explored. Examines the complexity and efficacy of using various types of data for making judgments at the system level about the effectiveness of instruction across classrooms and schools.

620 Ethical and Legal Dimensions of Instructional Leadership (3)

Concepts of ethics (e.g., self-interest, free will, social responsibility, duty) are explored as the basis for legal standards (protection of individual rights, fair treatment, equality of opportunity, duty of care, public trust) through the study of education case law.

621A Leadership of Curricular and Instructional Practices in PreK-12 Education (3)

Examines current issues in curriculum design and implementation. Explores: forces affecting the curriculum; curriculum continuity and articulation; content trends in the subject areas; appropriate curriculum for students from diverse backgrounds; curriculum censorship; and effective instructional leadership for school curriculum improvement.

622A Human Dimensions of Education Change and Reform in PreK-12 Education (3)

To prepare effective change agents, this course examines issues associated with change. Topics include change as a sociopolitical process; sources and purpose of change; coping with multiple reform efforts; decision-making processes; implementation of reforms; problems of resistance to change in curriculum and instruction; and change as a continuous process.

623 The Politics of School Reform (3)

Prerequisite: Admission to Joint Doctoral Program and consent of program adviser are required. Explores the theoretical and practical aspects of school reform politics with particular attention to curricular and instructional reform. Topics include: history of school reform, role of city government in school reform, racial and ideological divisions over school reform, and the political challenge of building coalitions for sustainable reform.

624B Issues in Community College Leadership: Law, Finance, and Staffing (3)

Three distinct modules on law, finance, and collective bargaining and staff performance review taught by experts in the field. Applied project in one of these three areas with a focus on developing expertise in and implementing reform/improvements in these areas.

626A Transforming Teaching and Schools through Resource Optimization in PreK-12 Education (3)

Through a multidisciplinary approach, explores perspectives for how optimization of resources can transform education. Topics include identification of economic, social and political resources; innovative ways to develop new streams of resources; policies and procedures that increase highly productive ways to use resources.

627 Epistemology, History and Structure of Contemporary Education (3)

Analysis of the epistemological and historical trends that have shaped the structure of contemporary education. Review of the influence of major schools of thought such as rationalism, empiricism, pragmatism, behaviorism and constructivism and how modern education structure, curriculum and pedagogy have been influenced by these various perspectives.

637 Emerging Developments in Subject Areas (2)

This team-taught elective course focuses on cutting edge developments in reading/English language arts, math, science, and social studies curricula; the critical connection between staff development program and instructional leadership; and methods for engaging parents and the community in support of instructional improvements.

670A Linking Research to Problems of Practice (2)

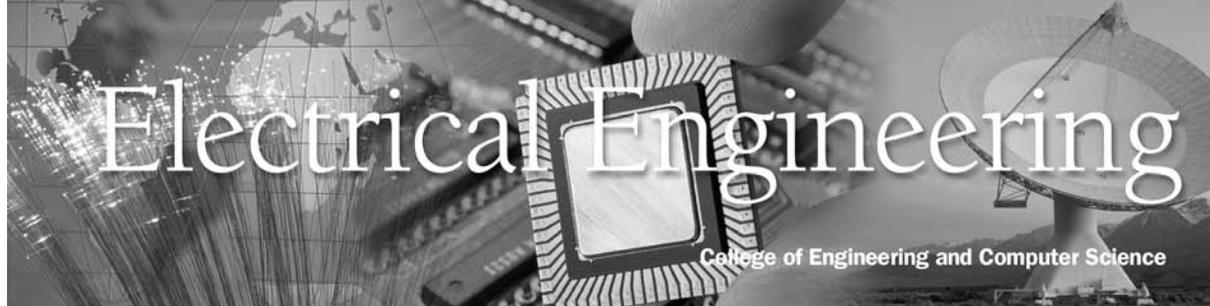
This seminar assists students to identify complex problems of educational practice appropriate for doctoral research. Small group instruction provides coaching that enables student to initiate the research cycle by linking research to problems of practices.

670B Connecting Research Questions to Scholarship in the Discipline (2)

This seminar assists students in writing a critical review of the professional literature pertaining to the research problem each has identified.

670C Written Qualifying Examination (2)

This seminar prepares students for the Ed.D. Qualifying Examination, which is a prerequisite for advancing to candidacy in the doctoral program.



DEPARTMENT CHAIR

Mostafa Shiva

DEPARTMENT OFFICE

Engineering 100A

DEPARTMENT WEBSITE

<http://www.fullerton.edu/ecs>

PROGRAMS OFFERED

Bachelor of Science in Electrical
Engineering

Master of Science in Electrical Engineering
Option in Systems Engineering

FACULTY

Maqsood Ahmed Chaudhry, David Cheng, John Clymer, George Cohn, Shahin Ghazanshahi, Mohinder Grewal, Karim Hamidian, Hassan Hamidi-Hashemi, Young Kwon, Chennareddy Reddy, Mostafa Shiva, Fleur Tehrani, Jesus Tuazon, Raman Unnikrishnan

ADVISERS

Undergraduate program adviser:
David Cheng

Graduate program coordinator:
Mohinder Grewal

Graduate admissions:
Mohinder Grewal

All department full-time faculty serve as advisers; see electrical engineering bulletin board for names, office hours and room numbers.

MISSION AND OBJECTIVES

Mission Statement

Consistent with the university's mission, learning is the first priority in the Department of Electrical Engineering.

To implement its mission the Electrical Engineering programs at CSUF provide the best qualities of teaching, scholarship and professional practice. The Department is committed to facilitate the education of both engineering undergraduate and graduate students for their entrance in, and significant contribution to, the engineering profession. Our students are actively engaged and work in collaboration with faculty and staff to acquire and expand knowledge. The objectives for our mission are further elaborated under "Department Educational Objectives."

Department Educational Objectives

The goals of the Department are as follows:

1. To provide the best of current practice, theory, research and intellectual study in the humanities to prepare students for challenging careers in engineering, strengthen relationships to their communities and contribute ethically and productively to society;
2. To educate students who, actively engaged with faculty and staff, work in collaboration to acquire and expand knowledge;
3. To provide service to the profession, the state of California, the country and to the worldwide development of engineering.

A critical focus of the education, research and service programs with the Department is to afford undergraduates of varying backgrounds and abilities every opportunity for achieving success in the engineering professions.

Program Educational Objectives (PEOs)

To achieve these goals, the faculty and students of the Department of Electrical Engineering, with input from other constituents, have established the following program educational objectives:

- A. To prepare students for successful careers in electrical engineering and related fields and for further studies;
- B. To train students thoroughly in methods of analysis including the mathematical and computational skills appropriate for electrical engineers to use when solving problems;
- C. To develop skills pertinent to the design process, including the students' ability to formulate problems, to think creatively, to communicate effectively, to synthesize information and to work collaboratively;
- D. To teach students to use current experimental and data analysis techniques for engineering application;
- E. To instill in students an understanding of their professional, social and ethical responsibilities and need for lifelong learning.

The level of achievement of PEOs is measured by analyzing the Program Outcomes.

Program Outcomes

- A. An ability to apply knowledge of mathematics, science, and engineering.
- B. An ability to design and conduct experiments, as well as to analyze and interpret data;
- C. An ability to design a system, component, or process to meet desired needs;

- D. An ability to function on multi-disciplinary teams;
- E. An ability to identify, formulate, and solve engineering problems;
- F. An understanding of professional and ethical responsibility;
- G. An ability to communicate technical material effectively;
- H. The broad education necessary to understand the impact of engineering solutions in a global and societal context;
- I. A recognition of the need for, and an ability to engage in, lifelong learning
- J. A knowledge of contemporary issues;
- K. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

2 + 2 Articulated Program with Community Colleges

The department has developed 2+2 articulation agreements with community colleges to provide students seamless transfer to the CSUF Electrical Engineering Program. This allows full-time students, taking the courses specified by the Electrical Engineering Department each semester, to graduate in two years following transfer to CSUF

INTRODUCTION

The Bachelor of Science degree in Electrical Engineering is accredited by the Accreditation Board for Engineering and Technology (ABET). The electrical engineering program provides the students with the knowledge of basic and advanced topics in the areas of design and

analysis of VLSI and electronic circuits, design and analysis of computer architecture, microprocessors, communication systems, signal processing, and control systems. This program develops an ability to apply design and analysis knowledge to the practice of electrical engineering

in an effective and professional manner. This knowledge can be applied to various engineering practices in aerospace, computer, electrical, electronics and other applied fields.

High School Preparation

The entering high school student should have a preparation which includes two years of algebra, geometry, trigonometry, and one year of physics or chemistry. Students deficient in mathematics must take special preparatory courses, i.e., Mathematics 125, which will not carry credit for the major. (See Mathematics Section for Entry Level Mathematics test and Math-Science Qualifying Examination requirements.)

Transfer Students

A transfer student shall complete a minimum of 30 units in residence of which at least 15 units shall be taken in upper-division engineering courses. Work taken at another college or university on which a grade of "D" (1.0) was earned may not be substituted for upper-division courses.

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

The undergraduate program requirements for the bachelor of science in electrical engineering are comprised of four major segments: foundation courses in mathematics and the physical sciences; general education courses in the arts, humanities, social sciences, biological sciences and other related areas; and a sequence of courses to fulfill the requirements of the Electrical Engineering degree.

Undergraduate students are required to meet with their academic adviser every semester during the first year and at least once a year thereafter. Students are strongly encouraged to see their academic advisers frequently. All courses taken in fulfillment of the requirements for the bachelor's degree must be taken for a letter grade, i.e., under grade Option 1. All mathematics and physical science courses required for the degree must be completed with at least a "C minus" (1.7) grade to count as prerequisite courses to engineering courses or as credit towards the degree. Graduate courses are not open to undergraduate students without approval of the program coordinator.

Mathematics and Science Courses (32)

Mathematics 150A Calculus (4)

Mathematics 150B Calculus (4)

Mathematics 250A Multivariate Calculus (4)

Mathematics 250B Introduction to Linear Algebra and Differential Equations (4)

Chemistry 115 Introductory General Chemistry (4)

Physics 225, 225L Fundamental Physics: Mechanics and Lab (4)

Physics 226, 226L Fundamental Physics: Electricity and Magnetism and Lab (4)

Physics 227, 227L Fundamental Physics: Waves, Optics, and Modern Physics and Lab (4)

General Education Courses

I. Core Competencies (9)

A. Oral Communication (3)

Honors 101B, Human Comm 100, or Human Comm 102

B. Written Communication (3)

English 101

C. Critical Thinking (3)

Honors 101A; Philosophy 105, 106; Psychology 110; Reading 290; or Human Comm 235

II. Historical and Cultural Foundations (9)

A. Development of World Civilization (3)

History 110A or 110B

B. American History, Institutions and Values (6)

1. American History (3)

Afro Ethnic Studies 190, American Studies 201, Chicano 190, History 180, 190, or Honors 201A

2. Government (3)

Poli Sci 100

III. Disciplinary Learning (26)

A. Mathematics and Natural Sciences (11)

1. Mathematics

Mathematics 150A (4)



2. Natural Sciences
 - a. Physical Science
Physics 225, 225L (4)
 - b. Earth and Astronomical Sciences
Not applicable for engineering majors
 - c. Life Science
Biology 101 (3)

B. Arts and Humanities (9)

1. Introduction to the Arts (3)
Art 101, 201A, 201B, 311, 312, Dance 101, Music 100, Theater 100
2. Introduction to the Humanities (3)
Any lower-division course in this category listed in the current class schedule
3. Implications, Explorations and Participatory Experience in the Arts and Humanities (3)
Any upper-division course in this category in the current class schedule

C. Social Sciences (6)

1. Introduction to the Social Sciences (3)
EGEE 401
2. Implications, Explorations and Participatory Experience in the Social Sciences (3)
Any upper-division course in this category listed in the current class schedule

IV. Lifelong Learning

This category is not applicable to engineering majors

V. Cultural Diversity

Take at least one star (*) course in Sections III.B.3 or III.C.2

Upper-Division Writing Requirement

In addition to the Examination in Writing Proficiency (EWP), all of the following courses are required to fulfill the upper-division English writing requirement:

- EGEE 303L Electronics Laboratory (1)
- EGEE 310L Electronic Circuits Laboratory (1)
- EGEE 313L Power Laboratory (1)
- EGEE 485 Electrical Engineering Design Projects Laboratory (3)
OR EGEE 407L Digital Computer Design Lab (3)

Written work for these courses must meet professional standards. All these courses must be passed with at least a "C" (2.0) grade.

Required Courses in Electrical Engineering (34 units)

Enrollment in these courses is limited to students who meet the prerequisites.

- CPSC 120 Introduction to Programming (3)
- EGEE 215 Solving Engineering Problems using MATLAB (1)
- EGEE 203 Electric Circuits (3)
- EGEE 203L Electric Circuits Lab (1)
- EGEE 245 Computer Logic & Architecture (3)
- EGEE 245L Computer Logic and Architecture Lab (1)

- EGEE 280 Microcontrollers (3)
- EGEE 281 Designing with VHDL (2)
- EGEE 303 Electronics (3)
- EGEE 303L Electronics Lab (1)
- EGEE 308 Engineering Analysis (3)
- EGEE 309 Network Analysis (3)
- EGEE 310 Electronic Circuits (3)
- EGEE 310L Electronic Circuits Lab (2)
- EGEE 311 Field Theory and Transmission Lines (3)
- EGEE 313 Introduction to Electromechanics (3)
- EGEE 313L Power Laboratory (1)
- EGEE 323 Engineering Probability and Statistics (3)
- EGEE 401 Engineering Economics and Professionalism (3)
- EGEE 407L Digital Computer Design Lab (3)
OR EGEE 485 Electrical Engineering Design Projects (3)
- EGEE 409 Introduction to Linear Systems (3)

Note: EGEE 303L, 310L, 313L, 485 and 407L must be passed with at least a "C" (2.0) grade. EGEE 203 and EGEE 303 must be passed with at least a "C minus" (1.7) grade.

Technical Electives in Electrical Engineering (11 units)

Before enrolling in any elective course, approval of the adviser must be obtained. At least 3-5 units of design content must be included. Senior project, EGEE 497 (1-3), and Independent Study, EGEE 499 (1-3), are elective courses; the student must complete a study application form and submit it for approval to the supervising faculty member and the department head prior to the semester in which the course work is to begin.

VLSI and Electronic Circuits

- EGEE 313 L Power Laboratory (1)
- EGEE 404 Intro to Microprocessors and Microcomputers (3)
- EGEE 404L Microprocessor Laboratory (1)
- EGEE 410 Electro-Optical Systems (3)
- EGEE 442 Electronic Circuits (3)
- EGEE 445 Digital Electronics (3)
- EGEE 448 Digital Systems Design with VHDL (3)
- EGEE 455 Microelectronics and Nano Devices (3)
- EGEE 465 Introduction to VLSI Design (3)

Communication Systems and Signal Processing

- EGEE 313L Power Laboratory (1)
- EGEE 404 Introduction to Microprocessors and Microcomputers (3)
- EGEE 410 Electro-Optical Systems (3)
- EGEE 420 Introduction to Digital Filtering (3)
- EGEE 442 Electronic Circuits (3)
- EGEE 443 Electronic Communication Systems (3)
- EGEE 448 Digital Systems Design with VHDL (3)
- EGEE 480 Optical Engineering and Communications (3)
- EGEE 483 Introduction to Global Positioning Systems (GPS) (3)

EGEE 483L Global Positioning Systems Lab (2)

Control Systems

EGEE 313L Power Laboratory (1)

EGEE 404 Introduction to Microprocessors and Microcomputers (3)

EGEE 416 Feedback Control Systems (3)

EGEE 420 Introduction to Digital Filtering (3)

EGEE 424 Computer Simulation of Continuous Systems (3)

EGEE 425 Introduction to Systems Engineering (3)

EGEE 483 Introduction to Global Positioning Systems (GPS) (3)

Computer Engineering

EGEE 313L Power Laboratory (1)

EGGN 403 Computer Methods in Numerical Analysis (3)

EGEE 404 Introduction to Microprocessors and Microcomputers (3)

EGEE 404L Microprocessor Lab (1)

EGEE 406 Design Applications with Microcontroller and FPGA (3)

EGEE 407 Digital Computer Architecture & Design I (3)

EGEE 407L Digital Computer Design Lab (3)

EGEE 412 Digital Computer Architecture and Design II (3)

EGEE 425 Introduction to Systems Engineering (3)

EGEE 445 Digital Electronics (3)

EGEE 448 Digital Systems Design with VHDL (3)

EGEE 455 Microelectronics and Nano Devices (3)

EGEE 465 Introduction to VLSI Design (3)

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING

To qualify for admission in conditionally classified standing, applicants must meet the following university and departmental requirements:

1. Bachelor's degree from a regionally accredited institution.
2. Bachelor's degree in an engineering program which is accredited by the Accreditation Board for Engineering and Technology (ABET).
3. Good standing at the last institution attended.
4. Minimum GPA of 2.75 in the last 60 semester units and 3.0 in the last 15 units of electrical engineering courses attempted.

Students with grade deficiencies, degrees from non-ABET accredited universities, or undergraduate majors other than Electrical Engineering may be considered for conditional admission. However, any deficiencies must be made up prior to advancing to classified standing and prior to beginning course work for the master's degree. Requirements for fulfilling deficiencies include a minimum of six units of adviser-approved course work. Deficiencies must be completed with minimum 2.5 GPA and with at least 2.75 GPA in the last nine deficiency units.

Each applicant file will be reviewed by the department graduate admissions adviser. Upon admission, the applicant is required to make an appointment with the graduate program coordinator. The program coordinator will assign a faculty adviser based on the student's areas of interest and career objectives.

Application Deadlines

The deadlines for completing online applications are March 1st for the fall semester and October 1st for the spring semester (see <http://www.csumentor.edu>).

Mailed applications need to be postmarked by the same deadlines. However, deadlines may be changed based upon enrollment projections. Check the university graduate studies website for current information at <http://www.fullerton.edu/graduate>.

Classified Standing

A student who meets the above requirements for admission to conditionally classified standing may be granted classified standing contingent upon:

1. Completion of all required deficiency course work.
2. Fulfillment of the university writing requirement. Students with degrees from American universities must show proof of meeting an upper division writing requirement, pass the EWP, or complete English 301 or 360. Students who have degrees from foreign universities must pass the Examination in Writing Proficiency (EWP) or complete English 301 or 360 with a grade of "C" (2.0) or better.
3. Development and approval of a study plan prior to completing nine units toward the 30-unit degree requirement.

Students must meet with a faculty adviser to set up a study plan. Classification is not granted until the study plan is approved by the faculty adviser, the department head, and the Office of Graduate Studies. Any subsequent changes to the study plan must have prior written approval by the faculty adviser and department head.

Study Plan

The study plan consists of a minimum of 30 units of adviser-approved upper-division and graduate-level course work which must be completed with an overall grade-point average of at least 3.0. At least half the units required for the degree must be in approved graduate (500-level) courses.

Required Courses (6 units)

- EGGN 403 Computer Methods in Numerical Analysis (3)
- Additional adviser-approved math-oriented course (3)

Concentration Courses (15 units)

A student is required to select a minimum of 15 units in Electrical Engineering. These units may be 400- and 500-level courses and are selected according to the student's area of interest. Course work may focus on the following areas: Communications Systems/Signal Processing, Computer Engineering, Control Systems, Microelectronics and Circuit Theory, Electromagnetic Field Theory and Optics and Systems Engineering. Graduate Project, EGEE 597 (1-3), and Thesis, EGEE 598 (6), are considered concentration courses.

Other Courses (9 units)

Elective units should be taken in Electrical Engineering or a related engineering field and are subject to adviser approval.

Exam/Thesis/Project Option

Subject to approval by the faculty adviser, students may select one of the following options for final review by the department graduate committee:

1. Satisfactory completion of a final oral comprehensive examination on coursework OR
2. Satisfactory completion of a formal project EGEE 597 (3 units) and a final oral comprehensive examination on coursework OR
3. Satisfactory completion and oral defense of a thesis EGEE 598 (6 units).

A typed draft of the thesis or project report must be submitted to the student's thesis or project committee no later than four weeks prior to the last day of the semester in which the oral defense of the thesis or project report is scheduled.

The thesis or project committee consists of a minimum of three members of the Electrical Engineering faculty. The thesis should cover original research and be prepared according to the university guidelines. Committee questions will be directed toward defense of the project report and include questions related to course work.

Guidelines for the preparation of theses and formal reports are available in the Electrical Engineering Department office and the university Graduate Studies office.

Students requesting Graduate Project (EGEE 597), Thesis (EGEE 598) or Independent Study (EGEE 599) must complete a study application form and submit it for approval to the supervising faculty member and department head prior to the semester in which the course work is to begin.

Advancement to Candidacy

Advancement to candidacy requires that the student file a graduation check prior to the beginning of the final semester (see class schedule for deadlines). Completion of requirements for the degree include a minimum GPA of 3.0 on all study plan course work, successful completion of a comprehensive examination or oral defense of a thesis or project, and recommendation by the Electrical Engineering faculty and Office of Graduate Studies.

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING OPTION IN SYSTEMS ENGINEERING

Students seeking this option must meet the same requirements as the program in Electrical Engineering. In addition students selecting the systems engineering option will be required to include the following five courses in their study plans:

EGEE 580 Analysis of Random Signals (3)

EGEE 581 Theory of Linear Systems (3)

EGEE 582 Linear Estimation Theory (3)

EGEE 585 Optimization Techniques in Systems Engineering (3)

EGEE 587 Operational Analysis Techniques in Systems Engineering (3)

The remainder of the systems engineering study plan will include other engineering courses with an emphasis in a particular field such as information systems, control theory, computer systems, civil or mechanical engineering applications. Students possessing a Bachelor of Science in Engineering may elect to include up to nine units from approved subjects offered by the College of Business Administration and Economics as a part of their study plan.

ENGINEERING COURSES

Courses are designated as EGEE in the class schedule.

203 Electric Circuits (3)

Prerequisites: Physics 226; Math 250A; corequisite: Computer Science 120. Units: Ohm's and Kirchhoff's laws; mesh and nodal analysis, superposition; Thevenin and Norton theorems; RL and RC transients; phasors and steady state sinusoidal analysis; response as a function of frequency; current, voltage, and power relationships; poly-phase circuits. (203=CAN ENGR 12; 203+203L=CAN ENGR 6)

203L Electric Circuits Laboratory (1)

Prerequisite or corequisite: EGEE 203. Simple resistive RL and RC circuits, electrical measurement techniques, verification of basic circuit laws through hard-wired breadboarding and CAD circuit simulation. (3 hours laboratory) (203+203L=CAN ENGR 6)

215 Solving Engineering Problems Using MATLAB (3)

Corequisite: Math 250B. Formulating, solving, verifying and reporting engineering problems such as control, signal processing, and communication systems and engineering, math, and physics problems such as engineering/scientific computations and operations research using the MATLAB/SIMULINK program. (3 hours laboratory)

241 Low-Level Language Systems (3)

(Same as Computer Science 241)

245 Computer Logic and Architecture (3)

Prerequisite: Computer Science 120. Logic design and organization of the major components of a computer, analysis and synthesis of combinational and sequential logics, analysis of the arithmetic, memory control and I/O units, concepts in computer control.

245L Computer Logic and Architecture Lab (1)

Prerequisite or corequisite: EGEE 245. Computer-Aided Design (CAD) of digital logic circuits including decoders, multiplexes, adders and subtractors, counters, shift registers and Arithmetic Logic Unit (ALU) of a computer. After verifying the CAD design through simulation, the circuits are built on a protoboard. (3 hours laboratory)

280 Microcontrollers (3)

(Same as Computer Engineering 280)

281 Designing with VHDL (2)

(Same as Computer Engineering 281)

303 Electronics (3)

Prerequisites: Physics 227 and EGEE 203. Corequisite: EGEE 203L. Characteristics and elementary applications of semiconductor diodes, field-effect transistors and bipolar-junction transistors, and operational amplifiers; mid-frequency small-signal analysis and design of transistors.

303L Electronics Laboratory (1)

Prerequisites: EGEE 203L, 323 and English 101. Corequisite: EGEE 303. Study of semiconductor diodes, transistors and elementary electronic circuits through hard-wired breadboarding, CAD electronic simulation and analysis. (3 hours laboratory)

308 Engineering Analysis (3)

(Same as EGCE/EGGN/EGME 308)

309 Network Analysis (3)

Prerequisites: EGEE 203 and EGGN 308. Prerequisite or corequisite: EGEE 203L. Performance of RLC circuits; complex frequency and the s-plane; frequency response and resonance; network topology; two-port network characterization; classical filter theory.

310 Electronic Circuits (3)

Prerequisites: EGEE 303 and 309. Continuation of 303, analysis and design of multistage and feedback amplifiers; frequency characteristics of amplifiers, frequency characteristics and stability of feedback amplifiers, differential amplifiers, design of IC circuit biasing, operational amplifiers and their applications.

310L Electronic Circuits Lab (1)

Prerequisite: EGEE 303L. Prerequisite or corequisite: EGEE 310. Computer-Aided Design (CAD) of electronic circuits including multistage feedback amplifiers; linear and integrated circuits; ADC and DAC and wireless design projects. After verifying the CAD design through simulation, the circuits are built on a protoboard. (3 hours laboratory)

311 Field Theory and Transmission Lines (3)

Prerequisites: EGEE 203, Physics 226 and Math 250B. Introduction to waves and phasors; analysis and design of transmission lines; electro-statics and magnetostatics; boundary value problems; Maxwell equations.

313 Introduction to Electromechanics (3)

Prerequisites: EGEE 309 and 311. Electromagnetic fields and circuits; transformers, saturation effects. Simple electro-mechanical systems. Circuit models, terminal characteristics and applications of DC and AC machines.

313L Power Laboratory (1)

Prerequisite: EGEE 303L. Prerequisite or corequisite: EGEE 313. Experiments in electromagnetic fields and circuits, transformers, and electromechanical systems such as AC and DC machines (3 hours laboratory)

323 Engineering Probability and Statistics (3)

Prerequisite: Math 250A or 270B. Set theory: axiomatic foundation of probability; random variables; probability distribution and density functions; joint, conditional, and marginal distributions; expected values; distribution of functions of random variables; central limit theorem; estimation.

401 Engineering Economics and Professionalism (3)

Prerequisites: Math 150A and junior or senior standing in Civil or Electrical Engineering. Development, evaluation and presentation of design alternatives for engineering systems and projects using principles of engineering economy and cost benefit analysis. Study of engineering profession, professional ethics and related topics. (Not available for use on graduate study plans.) (Same as Civil Engineering 401)

404 Introduction to Microprocessors and Microcomputers (3)

Prerequisite: EGEE 245L. Hardware and software concepts in microprocessors, processor family chips, system architecture, CPU, input/output devices, interrupts and DMA, memory (ROM, RAM), electrical and timing characteristics, assembly language programming.

404L Microprocessor Laboratory (1)

Prerequisite: EGEE 245L. Prerequisite or corequisite: EGEE 404. I/O interfacing with a microprocessor system; familiarization with the operating system, assembler, debugger and emulator; design of keyboard, LCO display, RS 232, D/A converter, A/D converter and floppy disk interfaces. (3 hours laboratory)

406 Design Applications with Microcontroller and FPGA (3)

Prerequisites: EGEE 245 and 245L. Digital system application design using microcontrollers, FPGAs and CPLDs including programming hardware interfacing, A/D conversion, CLB, logic arrays, interconnections, testing and simulations

407 Digital Computer Architecture and Design I (3)

Prerequisite: EGEE 245L. Organization and design of major components of a digital computer including arithmetic, memory, input, output and control units. Integration of units into a system and simulation by a computer design language.

407L Digital Computer Design Laboratory (3)

Prerequisites: EGEE 245, 303L, and 407. Design and implementation of a small digital computer; adders, arithmetic unit, control unit, memory control unit, memory unit and program unit. May be taken in lieu of EGEE 485. (1 hour lecture, 6 hours laboratory).

409 Introduction to Linear Systems (3)

Prerequisite: EGEE 309. Development of time and frequency domain models for physical systems. The linearization process and representation with block diagrams and signal flow graphs; discrete-time systems and digital signals including use of Z-transforms; stability theory of continuous and discrete time systems.

410 Electro-Optical Systems (3)

Prerequisite: EGEE 311. Introduction to electro-optics; optical radiation characteristics and sources; geometrical and physical optics; lasers and electro-optical modulation; quantum and thermal optical radiation detectors; detector performance analysis; electro-optical systems modeling and analysis; application examples.

412 Digital Computer Architecture and Design II (3)

Prerequisite: EGEE 307. Modern architectures of computer systems, their CPU structure, memory hierarchies and I/O processors; conventional and microprogrammed control; high-speed and pipelined ALU; cache, virtual and interleaved memories, DMA, interrupts and priority.

416 Feedback Control Systems (3)

Prerequisite: EGEE 409. Feedback control system characteristics; stability in the frequency and time domains; analysis and design of continuous-time systems using root-locus, Bode and Nyquist plots, Nichols chart and applications.

420 Introduction to Digital Filtering (3)

Prerequisite: EGEE 409. Discrete-time signals and systems; solution of difference equations; Fourier transform for a sequence; Z-transform; discrete Fourier transform; FIR and IIR realizations; design of digital filters.

424 Computer Simulation of Continuous Systems (3)

Prerequisites: EGGN 205 and 308. Use of the digital computer for simulation of physical systems modeled by ordinary differential equations; problem formulation, in-depth analysis of two integration methods, and the use of a general purpose system simulation program such as CSSL.

425 Introduction to Systems Engineering (3)

Prerequisites: EGEE 245, EGEE 323 or Computer Science 240 and Math 338 for Computer Science majors. Introduction to systems engineering analysis and the systems approach; introduction to modeling, optimization, design and control; systems requirements analysis; analytical and computational solution methods; information processing; integrated systems.

430 Fuzzy Logic and Control (3)

Prerequisite: EGEE 409. Fuzzy logic and systems; comparison of classical sets, relations, and operators with fuzzy sets, relations and operators; fuzzy arithmetic and transformations; classical predicate logic and reasoning versus fuzzy logic and approximate reasoning. Applications to rule-based systems and control systems.

442 Electronic Circuits (3)

Prerequisite: EGEE 310. Power amplifiers and tuned amplifiers; RF amplifiers; modulation and detection circuits; oscillators; and operational amplifier applications.

443 Electronic Communication Systems (3)

Prerequisites: EGEE 310 and 323 or equivalent. Principles of amplitude, angular and pulse modulation, representative communication systems, the effects of noise on system performance.

445 Digital Electronics (3)

Prerequisites: EGEE 245 and 303. RC circuits, attenuators, compensation and scope probe. Logic circuits: DTL, TTL, STTL, LSTTL and ECL. Fanout, noise-immunity, switching speed, power consumption, input-output characteristics. Design and analysis of MOS logic circuits; PMOS, NMOS and CMOS gates, flip-flops, shift registers and memory circuits.

448 Digital Systems Design with VHDL (3)

Prerequisites: EGEE 245 and 303. Basic concepts and characteristics of digital systems, traditional logic design, LSI/VLSI logic design with VHDL, combinational and sequential logic, and their applications; timing and control, race conditions and noise, microcomputers, computer-aided programming, development systems, microcomputer system hardware design, input/output devices.

455 Microelectronics and Nano Devices (3)

Prerequisites: EGEE 303 and 311. Quantum mechanical principles, crystal structure, energy band, carrier transport, carrier generation and recombination, p-n junction, bipolar transistor, MOSFET, MEFET and related devices, basic microwave and optoelectronic technology, crystal growth and fabrication, introduction to nano structure, nano devices and technology.

460 Introduction to Cellular Mobile Communications Systems (3)

Prerequisite: EGEE 443. Introduction to wireless mobile telecommunications, description and analysis of cellular radio systems, co-channel interference reduction, channel capacity and digital cellular systems

465 Introduction to VLSI Design (3)

Prerequisites: EGEE 245 and 303. Computer-aided design of VLSI circuits. MOS device structure, design rules, layout examples, CMOS standard cells. Speed power trade off, scaling, device and circuit simulation. VLSI design software tools. Routing method system design, Design Project. Chip fabrication through MOSIS service, testing.

480 Optical Engineering and Communications (3)

Prerequisite: EGEE 311 and Physics 227. Optics review, lightwave fundamentals, integrated optic waveguides, first design of fiberoptic system, analog and digital modulation, digital fiberoptic system design, baseband coding, digital video transmission in optical fiber, optical emitters and receivers, coherent optical communication, measurements in fiberoptic telecommunication

483 Introduction to Global Positioning Systems (GPS) (3)

Corequisite: EGEE 409. Description of Global Positioning Systems (GPS) and Differential Global Positioning Systems (DGPS), GPS navigation, errors. Satellite signals and co-ordinate transform math. Modeling for position and velocity. Application to navigation.

483L Global Positioning System Lab (2)

Corequisite: EGEE 483. Use and description of Novatel, Magelon, Ahstek, Collins and Tribel receivers. Computation of GPS and GEO stationary satellite positions from ephemeris data available on almanac. Errors such as selective availability, ionospheric, tropospheric, satellite ad receiver will be calculated and compensated in the data. (1 hour lecture, 3 hours laboratory)

485 Electrical Engineering Design Projects Laboratory (3)

Prerequisite: EGEE 310L. The practical aspects of design and project construction. Instructor-approved design project in electrical engineering, inter-disciplinary projects. Use of CAD program for schematic capture and simulation. Construction of final hardware according to the design specification. Performance evaluation and demonstration of project. (1 hour lecture, 6 hours laboratory).

490 Seminar in Electrical Engineering (1)

Prerequisite: Senior standing in engineering. The engineering profession, professional ethics, and related topics.

497 Senior Project (1-3)

Prerequisite: Consent of adviser and instructor. Directed independent design project.

499 Independent Study (1-3)

Prerequisite: approval of study plan by adviser. Specialized topics in engineering selected in consultation with and completed under the supervision of the instructor. May be repeated for credit.

503 Information Theory and Coding (3)

Prerequisite: EGEE 323. Information measures, probabilistic studies of the transmission and encoding of information, Shannon's fundamental theorems, coding for noisy channels.

504A Linear Network Synthesis (3)

Prerequisite: EGEE 310. Synthesis of passive element driving-point and transfer-functions with emphasis on RC networks. Basic operational amplifier RC circuits and their performance limitations, introduction to second-order RC active filters. Parameter sensitivity analysis.

507 Detection Theory (3)

Prerequisite: EGEE 580. Formulation of decision rules for the detection of signals in a noisy environment, optimum receivers. Estimation of parameters of detected signals. Estimation theory.

510 Optics & Electromagnetics in Communications (3)

Prerequisite: EGEE 480. Plane-wave propagation and reflection from multiple layers; two- and three-dimensional boundary value problems; waveguides and resonant cavities; radiation from apertures and antennas; electromagnetic properties of materials, gases, and plasmas; significant coverage of engineering applications.

518 Digital Signal Processing I (3)

Prerequisite: EGEE 420. Discrete Fourier transform; fast Fourier transform; Chirp Z-transform; discrete time random signals; floating-point arithmetic; quantization; finite word length effect in digital filters; spectral analysis and power spectrum estimation.

519A Parallel and Multiprocessing Systems (3)

Prerequisite: EGEE 412. Parallel and multiprocessing systems including hypercubes, shared distributive memory architectures, array and pipelines processors, communication protocols, routing algorithms and hands-on parallel programming experience on CSUF Hypercube System.

519B Computer Networks and the Internet (3)

Prerequisite: EGEE 419. Computer networking with LAN, WAN to the Internet including ATM, Ethernet, wireless and Bluetooth technology; design of communication protocols, transmission media, security and control.

522 Spread Spectrum Communications (3)

Prerequisites: EGEE 443 and 580. Introduction to Spread Spectrum (SS) Systems. Performance analysis of coherent digital signaling schemes. Synchronization. Direct sequence, frequency hopping, time hopping, and Hybrid Spread Spectrum Modulations. Binary shift register sequences. Code tracking loops. Performance of SS systems in a jamming environment, with forward error correction.

523A VLSI and Nano Technology and Devices (3)

Prerequisite: EGEE 455 or equivalent. Silicon crystal, PN junction physics, oxide and interface physics, wafer fabrication technology; oxidation, diffusion, ion-implantation, epitaxy, photolithography, thin films process. Layout design principle for integrated circuits. Nano-electronic devices and technology.

523B CMOS VLSI Design (3)

Prerequisites: EGEE 465 and EGEE 448 or equivalent. Surface physics of MOS system, MOS device physics. Short channel effect; hot carrier effect, subthreshold conduction. CMOS fabrication process. Layout design rules. Scaling design and analysis of CMOS circuits. Standard cell method. CAD design and SPICE simulation.

526 Digital Control Systems (3)

Prerequisite: EGEE 416. Analysis, design and implementation of digital control systems; Z-transform methods; frequency domain and state-space approach for discrete-time systems.

527 Fault Diagnosis and Fault-Tolerant Design (3)

Prerequisite: EGEE 307. Fault diagnosis and fault-tolerant design of digital systems; fault diagnosis test for combinational and sequential circuits, reliability calculations, multiple hardware redundancy, error detection and correcting codes, software redundancy and fault-tolerant computing.

529 Principles of Neural Systems (3)

Prerequisites: EGEE 310 and 409. Principles of neural systems and their hardware implementation. Basic properties, discrete and continuous bidirectional associative memories. Temporal associative memories. Neural nets classifiers, perceptrons, supervised and unsupervised learning. Forward and backward propagation. Electrical models of neural networks using op-amp., analog VLSI.

531 Phase-Locked and Frequency Feedback Systems (3)

Prerequisite: EGEE 580 or consent of instructor. Theory of noise and linear systems, FM feedback principles. Theory and design of phase-locked loops and their applications in communication and control.

537 Satellite Communications (3)

Prerequisite: EGEE 443. Satellite systems, link analysis, propagation effects, SNR/CNR calculations, modulation schemes, TDMA, FDMA, CDMA techniques.

557 Microprogramming and Embedded Microprocessors (3)

Prerequisite: EGEE 412 and EGEE 448. An introduction to microprogramming concepts and applications to the control unit of a computer, microprogrammable control, arithmetic-logic unit, implementation of an embedded process on FPGA and interfacing with external memories.

558A Microprocessors and System Applications I (3)

Prerequisites: EGEE 404 and 404L. Microprocessors and microcomputers, their related software systems, system design with microprocessors, applications in peripheral controllers, communication devices and multiprocessing systems.

558B Microprocessors and Systems Applications II (3)

Prerequisite: EGEE 558A. Advanced microprocessor architecture and their applications to microcomputer networking; RISC VS CISC architectures, communication protocol, distributed-operating system, and local area networks.

559 Introduction to Robotics (3)

Prerequisite: EGEE 416 or consent of instructor. The science of robotics from an electrical engineering standpoint, including modeling, task planning, control, sensing and robot intelligence.

580 Analysis of Random Signals (3)

Prerequisites: EGEE 323 and 409 or equivalent. Random processes pertinent to communications, controls and other physical applications, Markov sequences and processes, the orthogonality principle.

581 Theory of Linear Systems (3)

Prerequisites: EGEE 416 and EGGN 403. State space analysis, linear spaces, stability of systems; numerical methods of linear systems analysis and design.

582 Linear Estimation Theory (3)

Prerequisites: EGEE 580 and 581. Mathematical models of continuous-time and discrete-time stochastic processes; the Kalman filter, smoothing and suboptimal filtering computational studies.

585 Optimization Techniques in Systems Engineering (3)

Prerequisite: EGGN 403 or Math 340 for Computer Science majors. Calculus of variations, optimization of functions of several variables, Lagrange multipliers, gradient techniques, linear programming, and the simplex method, nonlinear and dynamic programming.

587 Operational Analysis Techniques in Systems Engineering (3)

Prerequisite: EGEE 323 or Math 338 for Computer Science majors. Operational research models; applications of probability theory to reliability, quality control, waiting line theory, Markov chains; Monte Carlo methods.

597 Project (1-3)

Prerequisite: consent of adviser. Classified graduate students only.

598 Thesis (1-6)

Prerequisite: consent of adviser. Classified graduate students only.

599 Independent Graduate Research (1-3)

Prerequisite: consent of adviser. May be repeated for credit.



Elementary and Bilingual Education

College of Education

COLLEGE OF EDUCATION DEAN

Claire C. Cavallaro

DEPARTMENT OF ELEMENTARY AND BILINGUAL EDUCATION

DEPARTMENT CHAIR

Karen S. Ivers

DEPARTMENT OFFICE

Education Classroom Building 190

DEPARTMENT WEBSITE

<http://ed.fullerton.edu/ElEd/Intro.html>

PROGRAMS OFFERED

Master of Science in Education

Concentrations:

Bilingual/Bicultural (Spanish-English)

Educational Technology

Elementary Curriculum and Instruction

Computing Certificate

Basic Teacher Credential Programs

Professional Teacher Preparation

Program for the Multiple Subject Credential

Professional Teacher Preparation

Program for the Multiple Subject

Credential with Bilingual Cross

Cultural and Academic

Development (BCLAD) Emphasis

FACULTY

Donna Bennett, Kim Case, Amy Cox-Petersen, Teresa Crawford, Mildred Donoghue, Loretta Donovan, Barb Finnell, Shanan Fitts, Susana Flores, Ana Garza-Dargatz, Earl Gotts, Tim Green, Andrea Guillaume, Laurie Hansen, Karen Ivers, Patricia Keig, Lisa Kirtman, Christine Mayfield, Kathy Murphy, Kim Norman, Terri Patchen, Nawang Phuntsog, Jennifer Ponder, Kristine Quinn, Chris Renne, Beth Schipper, Brenda Spencer, Christine Valenciana, Michelle VanderVeldt, Evelyn Weisman, Lisa Winstead, Ruth Yopp-Edwards, Hallie Yopp Slowik

Awards in Education

Outstanding Graduate Student

Emma H. Holmes Mathematics Award

Bernard Kravitz Multicultural Project Award

Outstanding Curriculum Project

Edwin Carr Fellowship

Application Deadlines

The deadlines for completing online applications to credential programs are February 28th for the fall semester and September 30th for the spring semester (see <http://www.csumentor.edu>). Mailed applications need to be postmarked by the same deadlines. However, deadlines may be changed based upon enrollment projections. For master's programs, check the CSU Mentor website and the department office for initial filing and cutoff dates.

THE PROFESSIONAL TEACHER PREPARATION PROGRAM FOR THE MULTIPLE SUBJECT (ELEMENTARY) CREDENTIAL PROGRAM

The Professional Teacher Preparation Program for the Multiple Subject (Elementary) Credential prepares individuals to teach in self-contained classrooms at the pre-K through 12th grade level where multiple subjects are taught. Candidates may select either a two- or three-semester credential program sequence, or a three-semester sequence that can include teaching on an internship credential. The Department also offers two Bilingual Cross-cultural and Academic Development (BCLAD) Emphasis options: the Asian BCLAD and the Spanish BCLAD. Applicants to the credential program must either hold a bachelor's degree or have completed their general education and major requirements. Applicants must pass the CSET before entering the program.

Freshmen may opt to simultaneously pursue an undergraduate major and a teaching credential through the Streamlined Teacher Education Program (STEP), which leads to a Multiple Subject Credential or to a basic Education Specialist Credential. The section on Teaching Credentials in this catalog contains more information on STEP.

California law requires an academic major; there is no major in education. Students who opt for STEP select a Liberal Studies, Child and Adolescent Development or Religious Studies major. Students who opt for the fifth-year Multiple Subject Credential Program devote their first three or four years of work to completing requirements for the baccalaureate degree with an academic major. Majors in the social sciences, humanities, or natural sciences provide excellent background for careers in elementary school teaching. Individuals interested in working as bilingual teachers may consider a major in a non-English language. Students are encouraged to attend a program overview during the junior and senior year. Overview schedules may be obtained through the Office of Admissions to Teacher Education. For more information about STEP contact the Center for Careers in Teaching in Humanities 113 or by phone at (714) 278-7130.

Two-Semester Program Sequence

The Multiple Subject Credential Program two-semester sequence is as follows:

First Semester

Ed El 430 Foundations in Elementary School Teaching (3)

Ed El 433 Language Arts and Reading Instruction in the Public Schools (3)

Ed El 434 Methods and Inquiry for Teaching English Learners (2)

Ed El 435 Mathematics Curriculum and Instruction in Elementary School Teaching (2)

- Ed El 438 Supervised Fieldwork in Elementary Teacher Education (2)
- Ed El 439 Student Teaching in the Elementary School (5)
- Ed El 450 Visual and Performing Arts Methods: Art, Dance, Drama and Music (1)

Second Semester

- Ed El 429 Integrated Curriculum and Instruction in the Elementary School (3)
- Ed El 436 Science Curriculum and Instruction in Elementary School Teaching (2)
- Ed El 437 Social Studies Curriculum and Instruction in Elementary School Teaching (2)
- Ed El 439 Student Teaching in the Elementary School (9)
- Ed El 451 Community, School and Classroom Issues (1)
- Ed El 452 P.E., Health and Mainstreaming Education (1)
- Ed El 453 Portfolio Development and Assessment (1)

Three-Semester Credential Program Sequence

A three-semester program is also available. This sequence is designed for individuals who wish to take classes during evenings and Saturdays, with limited though required daytime involvement in elementary schools. Student teaching requires a full daytime commitment.

First Semester

- Ed El 430 Foundations in Elementary School Teaching (3)
- Ed El 433 Language Arts and Reading Instruction in the Public Schools (3)
- Ed El 434 Methods and Inquiry for Teaching English Learners (2)
- Ed El 435 Mathematics Curriculum and Instruction in Elementary School Teaching (2)
- Ed El 438 Supervised Fieldwork in Elementary Teacher Education (1)
- Ed El 439 Student Teaching in the Elementary School (for interns) (5)

Second Semester

- Ed El 429 Integrated Curriculum and Instruction in the Elementary School (3)
- Ed El 438 Supervised Fieldwork in Elementary Teacher Education (1)
- Ed El 439 Student Teaching in Elementary School (4-9)
- Ed El 446 Methods and Inquiry for BCLAD Candidates (BCLAD only) (3)
- Ed El 450 Visual and Performing Arts Methods: Art, Dance, Drama and Music (1)
- Ed El 451 Community, School and Classroom Issues (1)

Third Semester

- Ed El 436 Science Curriculum and Instruction in Elementary School Teaching (2)
- Ed El 437 Social Studies Curriculum and Instruction in Elementary School Teaching (2)
- Ed El 439 Student Teaching in the Elementary School (5-9)
- Ed El 452 P.E., Health and Mainstreaming Education (1)
- Ed El 453 Portfolio Development and Assessment (1)

Three-Semester Internship Program

The three-semester Intern Credential Programs for Multiple Subject and Multiple Subject BCLAD credentials are three-semester programs to which candidates may apply while completing the first semester of the regular credential preparation program. Admission is contingent on approved full-time employment with a participating district, superior standing in first-semester coursework and student teaching, and recommendations from University and district personnel. The remaining two semesters involve paid teaching internship positions and University coursework. Additionally, some opportunities may arise for candidates in the three-semester non-internship program to pursue internship status. Questions may be directed to the Intern Coordinator. Information about these programs is available in the Office of Admission to Teacher Education.

Both the two- and three-semester credential programs require substantial time commitments. The three-semester credential program requires evening course work and may require Saturday course work.

Admission Procedures and Criteria

Admission to the University does not include admission to the Multiple Subject Credential Program. Students must apply for admission to the Multiple Subject Credential Program the semester prior to anticipated enrollment in the program. Filing deadlines are February 28 (to begin the program the following fall) and September 30 (to begin the program the following spring). Check the Admission to Teacher Education website for details and application procedures: <http://ed.fullerton.edu/adtep>.

Applicants for admission into the Multiple Subject Credential Program are evaluated at several transition points measuring candidates' progress toward meeting program outcomes as outlined in the College of Education's conceptual framework. Specifically, these include knowledge (scholarship, breadth of understanding), skills (professional aptitude, physical and mental fitness), and dispositions (character). Evidence related to these criteria that is assessed at time of application includes:

1. Overall grade point average at least 2.75 for the last 60 units.
2. Passage of the California Subject Examination for Teachers (CSET).
3. Completion of the California Basic Education Skills Test (CBEST) and passage of the written portion of this test.
4. Satisfactory completion of prerequisite courses:
 - a. CAS 101 Introduction to Child and Adolescent Development (3)
 - OR CAS 312 Human Growth and Development (3)
 - OR CAS 315 Child Development (3)
 - OR 325A Conception Through age 8 (3),
 - AND CAS 325B Age 9 Through Adolescence (3)
 - OR Psych 361 Developmental Psychology (3)
 - b. Ed El 315 (3) Introduction to Elementary Classroom Teaching
 - c. Ed El 325 Cultural Pluralism in Elementary Schools (3)
5. Recommendations from academic faculty, school personnel, and/or other appropriate persons.
6. Autobiography.
7. Interview with Education Faculty members.

Program faculty and staff also conduct informal assessments of applicants' suitability for teaching throughout prerequisite courses and the application process. Further evidence is provided subsequent to application when opportunity is provided for verification of tuberculosis screening and certificate of clearance which verifies the absence of a criminal record.

Details concerning admission procedures and criteria are available in the Office of Admission to Teacher Education.

Program Continuation

Once admitted, continuation in the program is based on continuous and satisfactory progress as assessed at specific transition points throughout the program.

Bilingual Cross-Cultural Language and Academic Development (BCLAD) Emphasis

A Multiple Subject Credential with a bilingual-bicultural (Spanish-English) emphasis or with an Asian language emphasis is available. Contact Dr. Evelyn Weisman (eweisman@fullerton.edu) for more information about these programs.

Application for Teaching Credentials

Upon completion of a multiple subject credential program the credential candidate must submit an application to the Commission on Teacher Credentialing through the CSUF credential analyst and



verify passage of the Reading Instruction Competence Assessment (RICA). The credential analyst is located in the Credential Preparation Center in College Park 740. Additional information on the credential application process is available in the Credential Preparation Center.

MASTER OF SCIENCE IN EDUCATION

(Bilingual/Bicultural Education concentration)

The program is designed to develop qualified bilingual/bicultural instructors (Spanish-English) who can work as classroom or resource teachers and staff developers. It will help individuals teach others how to provide experiences in the cultural heritage of the target population and develop specific teaching techniques and methods in teaching reading and English as a second language. The program will also help individuals to interpret and implement research related to bilingual/bicultural children. Individuals will become skilled in their abilities to diagnose learning needs for such students and to develop and implement sound educational strategies.

Admission to Graduate Standing: Conditionally Classified

University requirements include: a baccalaureate from an accredited institution and a grade-point average of at least 3.0 in the last 60 semester units attempted (see "Graduate Regulations" section for complete statement and procedures).

Graduate Standing: Classified

A student who meets the admission requirements and the following requirements may be granted classified graduate standing:

1. The development of an approved study plan
2. A basic teaching credential or equivalent experience
3. An approved major (minimum of 24 units upper division or graduate)
4. A 3.0 grade-point average on previous academic and related work
5. Language competence (English and Spanish) as determined by satisfactory interviews or course work
6. Completion of Spanish 466.

Credit will be given for previous postbaccalaureate studies when possible. Otherwise well-qualified students may be admitted with limited subject or grade deficiencies, but these deficiencies must be removed.

Study Plan

The adviser-approved 30 units (minimum) on the study plan will include the following:

Core Course Work (9 units)

Ed El 500 Bilingual Multicultural Curriculum (3)

Ed El 511 Survey of Educational Research (3)

Ed El 541 Psychological and Sociological Foundations of Bilingual-Bicultural Education (3)

Concentration Courses (18 units)

Ed El 542 Current Issues and Problems in Bilingual-Bicultural Education (3)

Chicana/o 450 The Chicano and Temporary Issues (3)

Chicana/o 480 The Immigrant and the Chicano (3)

One of the following:

TESOL 509 Advanced Principles of TESOL: Listening/

Speaking Focus (3)

TESOL 510 Advanced Principles of TESOL: Reading/Writing Focus (3)

One of the following:

TESOL 527 Second Language Acquisition (3)

TESOL 595 Curriculum and Program Design for TESOL (3)

Elective (3 units)

Elective units are chosen in consultation with and approved by the graduate adviser.

Culminating Experience (3 units)

One of the following:

Ed El 594 Research Seminar (3)

OR Ed El 597 Project (3)

OR Ed El 598 Thesis (3)

For further information consult the graduate program adviser.

MASTER OF SCIENCE IN EDUCATION

(Educational Technology concentration)

The Concentration in Educational Technology within the Master of Science in Education is designed to (1) help classroom teachers upgrade their skills and knowledge about new educational technologies and their role in the classroom and (2) prepare teachers for technology leadership roles in public and private schools.

Admission to Graduate Standing: Conditionally Classified

University and department admissions requirements include:

1. Baccalaureate from an accredited institution
2. Grade-point average of at least 3.0 in the last 60 semester units attempted
3. A basic teaching credential or equivalent experience
4. An approved major (minimum of 24 units upper-division or graduate)
5. 3.0 grade-point average on previous academic and related work.

Credit will be given for previous post-baccalaureate studies when possible. Otherwise well-qualified students may be admitted with limited subject or grade deficiencies, but these deficiencies must be removed.

Graduate Standing: Classified

Classified standing will be granted when all admissions deficiencies or prerequisites have been met and a study plan developed.

Study Plan

Core Classes (9 units)

Ed El 511 Survey of Educational Research (3)

Ed El 529 Learning Theory for Classroom Use (3)

Ed El 536 Curriculum Theory and Development (3)

Concentration Courses (18 units)

Ed El 512 Level Two Technology Proficiencies for Teachers in K-8 Schools (3)

Ed El 515 Technology and Problem Solving in Schools (3)

Ed El 518A Issues in Instructional Design of Classroom Software (3)

Ed El 518B Multimedia Development and Instruction in the Classroom (3)

Ed El 522 Web Design and Instruction (3)

Ed El 590 Technology Professional Development in Schools (3)

Culminating Experience (3 units)

One of the following:

Ed El 594 Research Seminar Including Project (3)

OR Ed El 597 Project (3)

OR Ed El 598 Thesis (3)

MASTER OF SCIENCE IN EDUCATION

(Elementary Curriculum and Instruction concentration)

The program is designed to help career classroom teachers upgrade their skills, become informed about new ideas in elementary teaching, and prepare for curriculum and instructional leadership in one or more of the following areas: elementary classroom teaching, technology in education, meeting the needs of diverse learners, early childhood education, math/science education, professional inquiry, and staff develop-

ment in public and private schools. Students may follow the study plan outlined below for the concentration in Elementary Curriculum and Instruction or they may elect to specialize in one of six emphasis areas: Diversity, Early Childhood Education, Math and Science, Professional Inquiry and Practice, Staff Development, and Technology in Education.

Admission to Graduate Standing: Conditionally Classified

University requirements include a baccalaureate from an accredited institution and a grade-point average of at least 3.0 in the last 60 semester units attempted (see "Graduate Regulations" for complete statement and procedures).

Graduate Standing: Classified

A student who meets the admission requirements and the following requirements may be granted classified graduate standing upon the development of an approved study plan: a basic teaching credential or equivalent experience, and an approved major (minimum of 24 units upper-division or graduate), a 3.0 grade-point average on previous academic and related work. Credit will be given for previous post-baccalaureate studies when possible. Otherwise well-qualified students may be admitted with limited subject or grade deficiencies, but these deficiencies must be removed.

Study Plan

The adviser-approved 30 units (minimum) on the study plan will include the following:

Core Course Work (9 units)

Ed El 511 Survey of Educational Research (3)

Ed El 529 Graduate Studies: Learning Theory for Classroom Use (3)

Ed El 536 Curriculum Theory and Development (3)

Course Work in Concentration (12 units)

Six units from following instruction-focused courses:

Ed El 492A,B Gender Issues in Math and Science (2,1)

Ed El 512 Level Two Technology Proficiencies for Teachers in K-8 Schools (3)

Ed El 515 Technology and Problem Solving in Schools (3)

Ed El 521 The Study of Teaching (3)

Ed El 527 Graduate Seminar in Developmental Psychology: The Human from Conception Through Eight Years (3)

Ed El 538 Teaching and Learning in the Early Childhood Classroom (3)

Ed El 539 Clinical Supervision: Analyzing Effective Teaching (3)

Ed El 541 Psychological and Sociological Foundations of Bilingual-Bicultural Education (3)

Ed El 542 Current Issues and Problems in Bilingual-Bicultural Education (3)

Ed El 551 Assessment Across the Curriculum (3)

Ed El 552 Family, Community, and Professional Partnership (3)

Ed El 553 Models of Teaching (3)

Six units from the following curriculum-focused courses:

Ed El 528 Reading/Language Arts in the Early Childhood Curriculum (3)

Ed El 530 Graduate Studies in Elementary Education: Second Languages (3)

- Ed El 531 Graduate Studies in Elementary Education: Integrated Language Arts (3)
- Ed El 532 Graduate Studies in Elementary Education: Mathematics (3)
- Ed El 533 Graduate Studies in Elementary Education: Science (3)
- Ed El 534 Graduate Studies in Elementary Education: Social Studies (3)
- Ed El 535 Graduate Studies in Elementary Education: Reading in the Language Arts Program (3)
- Ed El 537 Graduate Studies: Current Issues and Problems (3)
- Ed El 548 Social Studies, Science, and Math in Early Childhood Education (3)
- Ed El 571 Graduate Studies in Elementary Education: Science Education Practicum (3)

Electives (6 units)

Electives are chosen in consultation with and approved by the graduate adviser.

Culminating Experience (3 units)

One of the following:

- Ed El 594 Research Seminar (3)

OR Ed El 597 Graduate Project (3)

OR Ed El 598 Thesis (3)

For further information, consult the graduate program adviser.

MASTER OF SCIENCE IN EDUCATION ELEMENTARY CURRICULUM AND INSTRUCTION CONCENTRATION (EMPHASIS IN DIVERSITY)

The Diversity emphasis is designed to help career classroom teachers become informed about appropriate curriculum and instruction for the diverse student population in the public schools in the state of California. It will help individuals to provide educational experiences and develop curriculum appropriate to linguistically and culturally diverse populations.

Admission to Graduate Standing: Conditionally Classified/Classified

The requirements for admission to conditionally classified and classified standing are the same as those for the M.S. in Education concentration in Elementary Curriculum and Instruction.

Study Plan

Core Course Work (9 units)

Ed El 500 Bilingual Multicultural Curriculum (3)

Ed El 511 Survey of Educational Research (3)

Ed El 529 Graduate Studies: Learning Theory for Classroom Use (3)

Diversity Emphasis Course Work (9 units)

Ed El 530 Graduate Studies in Elementary Education: Second Languages (3)

Ed El 541 Psychological and Sociological Foundations of Bilingual-Bicultural Education (3)

Ed El 542 Current Issues and Problems in Bilingual-Bicultural Education (3)

Curriculum-Focused Course Work (15 units)

Two of the following:

Ed El 528 Reading/Language Arts in the Early Childhood Curriculum (3)

Ed El 531 Graduate Studies in Elementary Education: Integrated Language Arts (3)

Ed El 532 Graduate Studies in Elementary Education: Mathematics (3)

Ed El 533 Graduate Studies in Elementary Education: Science (3)

Ed El 534 Graduate Studies in Elementary Education: Social Sciences (3)

Ed El 535 Graduate Studies in Elementary Education: Reading in the Language Arts Program (3)

Ed El 548 Social Studies, Science, and Math in Early Childhood Curriculum (3)

Ed El 571 Graduate Studies in Elementary Education: Science Education Practicum (3)

Elective (3 units)

Elective units are chosen in consultation with and approved by the graduate adviser.

Culminating Experience (3 units)

Ed El 594 Research Seminar (3)

OR Ed El 597 Project (3)

OR Ed El 598 Thesis (3)

MASTER OF SCIENCE IN EDUCATION ELEMENTARY CURRICULUM AND INSTRUCTION CONCENTRATION (EMPHASIS IN EARLY CHILDHOOD EDUCATION)

This emphasis is designed to meet the greater community and professional need for quality education during preschool through third grade. The educational demand for developmentally appropriate instruction in preschool, kindergarten, and the primary grades has increased the need for effective specialists in Early Childhood Education.

Admission to Graduate Standing: Conditionally Classified/Classified

The requirements for admission to conditionally classified or classified standing are the same as for the M.S. in Education concentration in Elementary Curriculum and Instruction.

Study Plan

The adviser-approved 30 units (minimum) on the study plan will include the following:

Core Course Work (9 units)

Ed El 511 Survey of Educational Research (3)

Ed El 529 Graduate Studies: Learning Theory for Classroom Use (3)

Ed El 536 Curriculum Theory and Development (3)

Course Work in Early Childhood Emphasis (9 units)

Ed El 528 Reading/Language Arts in the Early Childhood Curriculum (3)

Ed El 538 Teaching and Learning in the Early Childhood Classroom (3)

Ed El 548 Social Sciences, Science, and Math in Early Childhood Education (3)

Curriculum-Focused Course Work (6 units)

Two of the following:

Ed El 530 Graduate Studies in Elementary Education: Second Languages (3)

Ed El 531 Graduate Studies in Elementary Education: Integrated Language Arts (3)

Ed El 532 Graduate Studies in Elementary Education: Mathematics (3)

Ed El 533 Graduate Studies in Elementary Education: Science (3)

Ed El 534 Graduate Studies in Elementary Education: Social Studies (3)

Ed El 535 Graduate Studies in Elementary Education: Reading in the Language Arts Program (3)

Ed El 537 Graduate Studies: Current Issues and Problems (3)

Ed El 571 Graduate Studies in Elementary Education: Science Education Practicum (3)

Elective (3 units)

Elective units are chosen in consultation with and approved by the graduate adviser.

Culminating Experience (3 units)

One of the following:

Ed El 594 Research Seminar (3)

OR Ed El 597 Project (3)

OR Ed El 598 Thesis (3)

For further information, consult the graduate program adviser.

MASTER OF SCIENCE IN EDUCATION ELEMENTARY CURRICULUM AND INSTRUCTION CONCENTRATION (EMPHASIS IN PROFESSIONAL INQUIRY AND PRACTICE)

The Professional Inquiry and Practice emphasis is designed to help career classroom teachers become informed about appropriate curriculum and instruction for students in the public schools of California. They will develop reflective and analytical thinking and initiate cycles of goal setting, professional practice, and reflection. The base of skills and knowledge will support their growing involvement in school reform including systematic reforms. Courses in this emphasis provide a foundation for teachers who wish to prepare for certification by the National Board for Professional Teaching Standards.

Admission to Graduate Standing: Conditionally Classified/Classified

The requirements for admission to conditionally classified or classified standing are the same as for the M.S. in Education concentration in Elementary Curriculum and Instruction.

Study Plan

Core Courses (9 units)

Ed El 511 Survey of Educational Research (3)

Ed El 529 Graduate Studies: Learning Theory for Classroom Use (3)

One of the following:

Ed El 536 Curriculum Theory and Development (3)

Ed El 500 Bilingual Multicultural Curriculum (3)

Emphasis Courses (9 units)

Ed El 521 The Study of Teaching (3)

Ed El 551 Assessment Across the Curriculum (3)

Ed El 552 Family, Community, and Professional Partnerships (3)

Curriculum Course (3 units)

One of the following:

Ed El 528 Reading/Language Arts in the Early Childhood Curriculum (3)

Ed El 530 Graduate Studies in Elementary Education: Second Language (3)

Ed El 531 Graduate Studies in Elementary Education: Integrated Language Arts (3)

Ed El 532 Graduate Studies in Elementary Education: Mathematics (3)

Ed El 533 Graduate Studies in Elementary Education: Science (3)

Ed El 534 Graduate Studies in Elementary Education: Social Studies (3)

Ed El 535 Graduate Studies in Elementary Education: Reading in the Language Arts Program (3)

Ed El 548 Social Sciences, Science, and Math in Early Childhood Education (3)

Electives (6 adviser-approved units)

Culminating Experience (3 units)

One of the following:

Ed El 594 Research Project (3)

OR Ed El 597 Graduate Project (3)

OR Ed El 598 Thesis (3)

MASTER OF SCIENCE IN EDUCATION ELEMENTARY CURRICULUM AND INSTRUCTION CONCENTRATION (EMPHASIS IN MATH AND SCIENCE)

This emphasis provides opportunities for teachers to enhance instruction and develop a better understanding of the math and science curriculum in K-8 schools. The sequence of courses is designed to prepare teachers for leadership roles within their schools and districts in math and science.

The requirements for admission to conditionally classified or classified standing are the same as for the M.S. in Education concentration in Elementary Curriculum and Instruction.

Study Plan

Core Courses (9 units)

Ed El 511 Survey of Educational Research (3)

Ed El 529 Graduate Studies: Learning Theory for Classroom Use (3)

Ed El 536 Curriculum Theory and Development (3)

Emphasis Courses (12 units)

Ed El 492A,B Gender issues in Math and Science (2,1)

Ed El 515 Technology and Problem Solving in Schools (3)

Ed El 532 Graduate Studies in Elementary Education: Mathematics (3)

Ed El 533 Graduate Studies in Elementary Education: Science (3)

Ed El 571 Graduate Studies in Elementary Education: Science Education Practicum (3)

Electives (6 adviser-approved units)

Culminating Experience (3 units)

One of the following:

Ed El 594 Research Project (3)

OR Ed El 597 Graduate Project (3)

OR Ed El 598 Thesis (3)

For further information, consult the graduate program adviser.

MASTER OF SCIENCE IN EDUCATION ELEMENTARY CURRICULUM AND INSTRUCTION CONCENTRATION (EMPHASIS IN STAFF DEVELOPMENT)

This program is designed to enable educators to assume leadership roles in staff development in school districts. The sequence of courses is also designed to help teacher leaders and master teachers to understand contemporary trends and research findings in elementary curriculum and instruction.

Admission to Graduate Standing: Conditionally Classified/Classified

The requirements for admission to conditionally classified or classified standing are the same as for the M.S. in Education concentration in Elementary Curriculum and Instruction.

Study Plan

The adviser-approved 30 units (minimum) on the study plan will include the following:

Core Course Work (9 units)

Ed El 511 Survey of Educational Research (3)

Ed El 529 Graduate Studies: Learning Theory for Classroom Use (3)

Ed El 536 Curriculum Theory and Development (3)

Emphasis Courses (9 units)

Ed El 521 The Study of Teaching (3)

Ed El 539 Clinical Supervision: Analyzing Effective Teaching (3)

Ed El 553 Models of Teaching (3)

Curriculum-Focused Course Work (6 units)

Two of the following:

Ed El 528 Reading/Language Arts in the Early Childhood Curriculum (3)

Ed El 530 Graduate Studies in Elementary Education: Second Languages (3)

Ed El 531 Graduate Studies in Elementary Education: Integrated Language Arts (3)

Ed El 532 Graduate Studies in Elementary Education: Mathematics (3)

Ed El 533 Graduate Studies in Elementary Education: Science (3)

Ed El 534 Graduate Studies in Elementary Education: Social Studies (3)

Ed El 535 Graduate Studies in Elementary Education: Reading in the Language Arts Program (3)

Ed El 537 Graduate Studies: Current Issues and Problems (3)

Ed El 548 Social Sciences, Science, and Math in Early Childhood Education (3)

Ed El 571 Graduate Studies in Elementary Education: Science Education Practicum (3)

Elective (3 units)

Elective units are chosen in consultation with and approved by the graduate adviser.

Culminating Experience (3 units)

One of the following:

Ed El 594 Research Seminar (3)

OR Ed El 597 Project (3)

OR Ed El 598 Thesis (3)

MASTER OF SCIENCE IN EDUCATION ELEMENTARY CURRICULUM AND INSTRUCTION CONCENTRATION (EMPHASIS IN TECHNOLOGY IN EDUCATION)

This emphasis has been designed to provide elementary school teachers with a broad understanding of the applications of computers and other technologies in the elementary school classroom. Competencies will enable participants to become computer curriculum specialists who will guide the integration of technology into the elementary school curriculum, its use in instruction, and its applications in instructionally related activities.

Admission to Graduate Standing: Conditionally Classified/Classified

The requirements for admission to conditionally classified and classified standing are the same as those for the M.S. in Education concentration in Elementary Curriculum and Instruction.

Study Plan

The study plan consists of 30 units of adviser-approved course work:

Core Course Work (9 units)

Ed El 511 Survey of Educational Research (3)

Ed El 529 Graduate Studies: Learning Theory for Classroom Use (3)

Ed El 536 Curriculum Theory and Development (3)

Course Work in Technology in Education Emphasis (12 units)

Ed El 512 Level Two Technology Proficiencies for Teachers in K-8 Schools (3)

Ed El 515 Technology and Problem Solving in Schools (3)

Ed El 522 Web Design and Instruction (3)

Ed El 590 Technology Professional Development in K-8 Schools (3)

Curriculum-Focused Course Work (6 units)

Ed El 528 Reading/Language Arts in the Early Childhood Curriculum (3)

Ed El 530 Graduate Studies in Elementary Education: Second Languages (3)

Ed El 531 Graduate Studies in Elementary Education: Integrated Language Arts (3)

Ed El 532 Graduate Studies in Elementary Education: Mathematics (3)

Ed El 533 Graduate Studies in Elementary Education: Science (3)

Ed El 534 Graduate Studies in Elementary Education: Social Studies (3)

Ed El 535 Graduate Studies in Elementary Education: Reading in the Language Arts Program (3)

Ed El 537 Graduate Studies: Current Issues and Problems (3)

Ed El 548 Social Studies, Science, and Math in Early Childhood Education (3)

Ed El 571 Graduate Studies in Elementary Education: Science Education Practicum (3)

Culminating Experience (3 units)

One of the following:

Ed El 594 Research Seminar (3)

OR Ed El 597 Project (3)

OR Ed El 598 Thesis (3)

COMPUTING CERTIFICATE FOR ELEMENTARY SCHOOL TEACHERS

The purpose of this certificate program is to provide participants with a broad understanding of the applications of technology in the elementary school classroom and the instructionally related tasks in the public schools. The certificate program is designed to provide the needed competencies for participants to become curriculum specialists who will guide the integration of technology into the elementary school curriculum, its use in instruction, and its applications in instructionally related activities at the elementary school. This certificate requires 12 units.

Required Courses (12 units)

Ed El 512 Level Two Technology Proficiencies for Teachers in K-8 Schools (3)

Ed El 515 Technology and Problem Solving in Schools (3)

Ed El 522 Web Design and Instruction (3)

Ed El 590 Technology Professional Development in Schools (3)

For further information, consult the Elementary Education graduate program adviser.

ELEMENTARY AND BILINGUAL EDUCATION COURSES

Courses are designated EDEL in the class schedule.

110 Explorations in Education (2-3)

(Same as Ed Sec 110)

315 Introduction to Elementary Classroom Teaching (3)

An exploratory course with field assignments for students considering career in elementary school teaching. Includes on campus seminars and overview of admission requirements for the Multiple Subject Credential Program. Students taking this course to meet the prerequisite for either the Multiple Subject or the Special Education Credential Program must earn a "B" (3.0) or better to receive a grade of credit. Fieldwork required.

325 Cultural Pluralism in Elementary Schools (3)

Prerequisite: completion of General Education Category III.

C.1. Culture and cultural pluralism in elementary schools. Topics: Examination of one's own beliefs and values, classroom practices and materials that promote equity, strategies for learning about students, history/traditions of cultural groups, and assessment of multicultural education programs. Fieldwork required.

429 Integrated Curriculum and Instruction in the Elementary School (3)

Prerequisite: admission to second semester of Multiple Subject Credential Program. Additional study of elementary curriculum with emphasis on language arts, integrated instruction across the curriculum, and assessment of learning outcomes. Must be taken Credit/No Credit. A "B" (3.0) or better is required to receive a grade of credit.

430 Foundations in Elementary School Teaching (3)

Prerequisite: admission to Multiple Subject Credential Program. A focus on the curriculum of the elementary school, instructional planning, principles of effective teaching, generic instructional strategies, classroom management, and legal issues in education. Must be taken Credit/No Credit. A "B" (3.0) or better is required to receive a grade of credit. (Same as Special Ed 430)

433 Language Arts and Reading Instruction in the Public Schools (3)

Prerequisite: admission to Multiple Subject Credential Program. An overview of principles of reading instruction, elements of the language arts program including literature-based reading, content area reading, the role of phonics, emergent literacy, and diagnosis of reading problems. Must be taken Credit/No Credit. A "B" (3.0) or better is required to receive a grade of credit.

434 Methods and Inquiry for Teaching English Learners (2)

Prerequisite: admission to Multiple Subject Credential Program. Theoretical foundations, legal issues, and school programs for the education of English learners. Assessment, materials, methods and strategies for English language development and learning across the curriculum for elementary school English learners. Must be taken Credit/No Credit. A "B" (3.0) or better is required to receive a grade of Credit. (Same as Special Ed 434).

435 Mathematics Curriculum and Instruction in Elementary School Teaching (2)

Prerequisites: admission to Multiple Subject Credential Program. An emphasis on instructional materials, learning styles, inquiry, concept learning, problem solving, various instructional strategies applied to the teaching of mathematics. Must be taken Credit/No Credit. A "B" (3.0) or better is required to receive a grade of credit. (Same as Special Ed 435)

**436 Science Curriculum and Instruction
in Elementary School Teaching (2)**

Prerequisites: admission to Multiple Subject Credential Program. An emphasis on instructional materials, learning styles, inquiry, concept learning, problem solving, various instructional strategies applied to the teaching of science. Must be taken Credit/No Credit. A “B” (3.0) or better is required to receive a grade of credit.

**437 Social Studies Curriculum and Instruction
in Elementary School Teaching (2)**

Prerequisite: admission to Multiple Subject Credential Program. An emphasis on instructional materials, learning styles, inquiry, concept learning, problem solving, various instructional strategies applied to the teaching of social studies. Must be taken Credit/No Credit. A “B” (3.0) or better is required to receive a grade of credit.

438 Supervised Fieldwork in Elementary Teacher Education (1-2)

Prerequisite: admission to Multiple Subject Credential Program. Students will serve as teacher participants in an assigned elementary school classroom. Must be taken Credit/No Credit. A “B” (3.0) or better is required to receive a grade of credit. (Same as Special Ed 438)

439 Student Teaching in the Elementary School (5-14)

Prerequisites: Ed El 430, 433, 438 and admission to student teaching. Participation in a regular elementary school teaching program for the full school day. Must be taken Credit/No Credit. A “B” (3.0) or better is required to receive a grade of credit. (Same as Special Ed 439).

446 Methods and Inquiry for BCLAD Candidates (3)

Prerequisite: admission to Multiple Subject Credential Program with BCLAD Emphasis. This course prepares Multiple Subject candidates for teaching Spanish-speaking elementary students. Emphasis includes reading instruction methods, materials and assessment, equity issues, and elements and considerations of culture that promote effective instruction for Spanish-speaking elementary students.

448 Methods and Inquiry for Vietnamese BCLAD Candidates (3)

Prerequisite: admission to Multiple Subject Credential Program with BCLAD emphasis (Vietnamese). Course focuses on equity issues, curriculum and instruction for Vietnamese-speaking elementary students.

**450 Visual and Performing Arts Methods: Art, Dance,
Drama and Music (1)**

Prerequisite: admission to Multiple Subject Credential Program. Seminar emphasizing instructional materials, learning styles, integration and strategies as they apply to the teaching of the arts in elementary education. Must be taken Credit/No credit. A “B” (3.0) or better is required to receive a grade of credit. (Same as Special Ed 450)

451 Community, School and Classroom Issues (1)

Prerequisite: admission to Multiple Subject Credential Program. Seminar in current issues of elementary school teaching, including classroom management, parent-teacher communication, school law and child abuse reporting. Must be taken Credit/No Credit. A “B” (3.0) or better is required to receive a grade of credit. (Same as Special Ed 451)

452 P.E., Health and Mainstreaming Education (1)

Prerequisite: admission to Multiple Subject Credential Program. Seminar addressing mainstreaming students with special needs, health education, and physical education in elementary school settings. Must be taken Credit/No Credit. A “B” (3.0) or better is required to receive a grade of credit. (Same as Special Ed 452)

453 Portfolio Development and Assessment (1)

Prerequisites: Ed El 430, 433, 435, 438 and admission to student teaching. Seminar focusing on the culminating assessment via a portfolio for the Multiple Subject Credential program. Must be taken Credit/No Credit. A “B” (3.0) or better is required to receive a grade of credit. (Same as Special Ed 453)

**492A Gender Issues in Math and Science
Teaching and Learning (2)**

Prerequisites: Ed El 315 and senior or graduate standing. Explores educational and cultural barriers and avenues to the success of girls in science and mathematics, development of curricula and instructional methods to address these issues.

492B Gender Issues in Math and Science Education: Practicum (1)

Prerequisite: Ed El 315. Corequisite: Ed El 492A. Educational and cultural barriers/avenues to girls’ success in science and mathematics; implementation of curricula and instructional methods. 20 hours teaching required. If taken Credit/No Credit, a “B” (3.0) or better is required for credit.

499 Independent Study (1-3)

Prerequisites: senior or graduate standing, consent of instructor prior to registration. Individual investigation under supervision of a faculty member. Only students of demonstrated capability and maturity will be approved. May be repeated for credit.

500 Bilingual Multicultural Curriculum (3)

Prerequisite: teaching credential. Seminar: the multicultural school curriculum including forces operating on the curriculum and the participants involved in curriculum building. Modification of the curriculum to reflect multicultural contexts.

502A New Teacher Induction, Assessment, and Support, Year 1 (1)
(Same as Ed Sec 502A)

502B New Teacher Induction, Assessment, and Support, Year 1 (1)
(Same as Ed Sec 502B)

502C New Teacher Induction, Assessment, and Support, Year 2 (1)
(Same as Ed Sec 502C)

502D New Teacher Induction, Assessment, and Support, Year 2 (1)
(Same as Ed Sec 502D)

511 Survey of Educational Research (3)

Prerequisite: teaching credential. Descriptive statistics and statistical inferences in educational research. Representative research papers. Principles of research design. Prepare papers using research findings.

512 Level Two Technology Proficiencies for Teachers in K-8 Schools (formerly 519) (3)

Prerequisite: Teaching Credential. Theoretical basis and strategies for improving teaching of K-8 students through use of multimedia and other technologies.

515 Technology and Problem Solving in Schools (3)

Prerequisites: Ed El 512 and teaching credential. Students will investigate software and web-based applications that promote problem-solving in K-8 schools. Students will research and discuss the issues, implications of and implementation strategies for using technology to enhance students' problem-solving skills.

518A Issues in Instructional Design of School Software (3)

Prerequisite: Ed El 512. This course focuses on issues related to the instructional design of courseware designed specifically for classroom students. Topics include learning principles, learner characteristics, instructional strategies, screen design, response analysis, feedback, and interactivity.

518B Multimedia Development and Instruction in the Classroom (3)

Prerequisite: Ed El 518A. This course focuses the application and instruction of computer-based instructional design principles in the development for classroom software and multimedia projects. Topics include planning and assessment, design principles, and development of tools.

521 The Study of Teaching (3)

Prerequisite: Ed El 511 and teaching credential. A systematic study of the teaching process. Examination of the research methodology used to analyze teaching, the current knowledge of the association between teaching processes and student learning, and the implications of the research for the classroom.

522 Web Design and Instruction (3)

Prerequisite: Ed El 512. Design, development, and implementation of Web pages and sites for instructional purposes. Emphasis placed in the issues surrounding using the World Wide Web for instruction.

527 Graduate Seminar in Developmental Psychology: The Human from Conception Through Eight Years (3)

Prerequisites: teaching credential. The physical, social, cognitive-intellectual, and emotional development of individuals from conception to middle childhood. Current problems, theories and research.

528 Reading/Language Arts in the Early Childhood Curriculum (3)

Prerequisite: teaching credential. Seminar: significant research, curriculum developments and materials, and current instructional strategies for promoting emergent literacy in children.

529 Graduate Studies: Learning Theory for Classroom Use (3)

Prerequisite: teaching credential. Major theoretical positions in planning and interpreting classroom practices. Educational research findings, implications for curriculum development and teaching practices.

530 Graduate Studies in Elementary Education: Second Languages (3)

Prerequisites: Ed El 434 and teaching credential. Seminar: significant research, curriculum developments and materials, and criteria for planning and improving second language programs including those for English as a second language.

531 Graduate Studies in Elementary Education: Integrated Language Arts (3)

Prerequisite: teaching credential. Seminar: significant research, trends and problems in teaching the fundamental skills of communication; curriculum development and materials, and criteria for planning and improving integrated language arts programs.

532 Graduate Studies in Elementary Education: Mathematics (3)

Prerequisite: teaching credential. Seminar: significant research, curricular developments and materials, criteria for planning and improving mathematics programs and instruction.

533 Graduate Studies in Elementary Education: Science (3)

Prerequisite: teaching credential. Seminar: research and materials in science education and criteria for planning and improving science programs and instruction.

534 Graduate Studies in Elementary Education: Social Studies (3)

Prerequisite: teaching credential. Seminar: research developments and materials, criteria for planning and improving social studies programs, and current techniques of teaching.

535 Graduate Studies in Elementary Education: Reading in the Language Arts Program (3)

Prerequisite: teaching credential. Seminar: research developments and materials, criteria for planning and improving reading instruction in the integrated language arts programs, current instructional strategies, and the role of children's literature.

536 Curriculum Theory and Development (3)

Prerequisite: teaching credential. Seminar: the school curriculum including the forces operating on the curriculum and the participants involved in curriculum building. The process of curriculum building.

537 Graduate Studies: Current Issues and Problems (3)

Prerequisite: teaching credential. Problems and issues in elementary education, their causes and possible solutions.

538 Teaching and Learning in the Early Childhood Classroom (3)

Prerequisite: teaching credential. Seminar: application of significant research in the education of young children. Current instructional strategies and criteria for planning and improving programs in early childhood education.

539 Clinical Supervision: Analyzing Effective Teaching (3)

Prerequisite: teaching credential. A systematic, research-based approach. Identifies basic components needed by teachers, staff developers, and administrators to improve their instructional skills. Includes principles of learning applied to supervision and applied practice in analyzing the instructional process.

541 Psychological and Sociological Foundations of Bilingual-Bicultural Education (3)

Prerequisite: teaching credential. Application of psychological and sociological theory related to teaching English learners; application of these disciplines for the development of emotionally and socially supportive learning environments.

542 Current Issues and Problems in Bilingual-Bicultural Education (3)

Prerequisite: teaching credential. Problems and issues in the development and implementation of bilingual-bicultural education.

548 Social Studies, Science, and Math in Early Childhood Education (3)

Prerequisite: teaching credential or equivalent experience. This seminar investigates current curriculum standards and instructional options in social studies, science, and mathematics in early childhood education. Focus on content, process skills and literature connections.

551 Assessment Across the Curriculum (3)

Prerequisite: teaching credential. Improving student performance through assessment, self-assessment, and student goals setting; establishing congruence between purposes, audiences, and instruments used. Goals of the course include: design and selection of instruments including performance assessment, portfolio, observation, and personal communication forms for standards based assessment.

552 Family, Community and Professional Partnership (3)

Prerequisite: teaching credential. Overview of community collaboration with service providers, business leaders, policy makers, and parents. Addresses diversity across families and importance of family interface with agencies and community. Stresses importance of partnerships with professional agencies concerned with education, youth, and children.

553 Models of Teaching (3)

Prerequisite: teaching credential. Explores varied strategies of instruction, culminating in the identification and study of sixteen unique models. Examines relationships among theories of learning and instruction. Investigates various instructional alternatives.

571 Graduate Studies in Elementary Education: Science Education Practicum (3)

Prerequisite: Ed El 533. Strategies for effectively teaching and assessing science content knowledge, science process skills, and scientific attitudes in the elementary school; includes field assignments in elementary schools (1 unit - 4 hours per week); seminars (2 units - 2 hours per week). Principles of effective staff development in elementary science education.

590 Technology Professional Development in Schools (3)

Prerequisites: Level 2 technology proficiency, Ed El 522 and Ed EL 523. This course focuses on planning, implementing and evaluating technology professional development in K-8 schools. The course includes writing grants, acting as a change agent and serving as a technology leader in a K-8 school. Fieldwork required.

594 Research Seminar (3)

Prerequisite: 3.0 GPA and consent of instructor. The preparation, evaluation, development and presentation of curriculum research proposals culminating in a graduate project. Individuals and groups will participate in critiquing proposals, curriculum projects and research results.

597 Project (1-3)

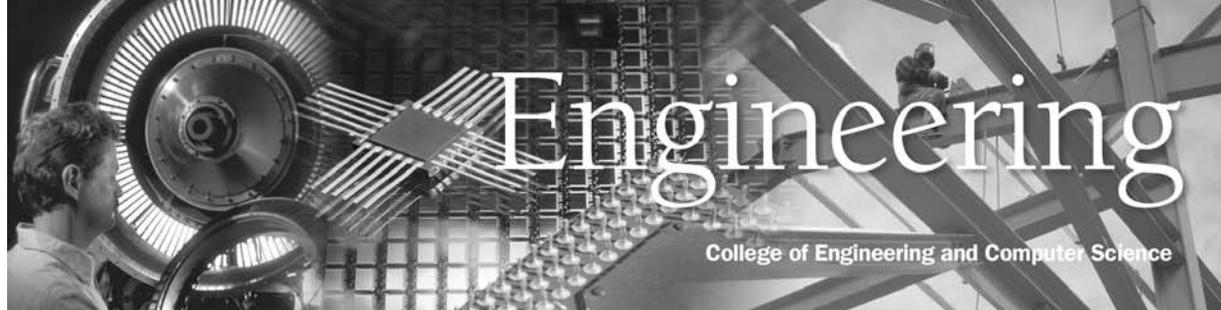
Prerequisite: 3.0 GPA and consent of instructor. Individual research on an empirical project, with conferences with the instructor, culminating in a project.

598 Thesis (1-3)

Prerequisite: 3.0 GPA and consent of instructor. Individual research with conferences with the instructor, culminating in a thesis.

599 Independent Graduate Research (1-3)

Prerequisite: a teaching credential, one year of teaching experience, and consent of instructor. Independent inquiry.



PROGRAMS OFFERED

- Bachelor of Science in Civil Engineering
 - Emphasis in Architectural Engineering
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Engineering
- Bachelor of Science in Mechanical Engineering
 - Emphasis in Manufacturing Engineering
- Master of Science in Civil Engineering
 - Concentration in Environmental Engineering
- Master of Science in Electrical Engineering
 - Option in Systems Engineering
- Master of Science in Engineering
 - Option in Engineering Science
- Master of Science in Mechanical Engineering
- Master of Science in Software Engineering

INTRODUCTION

The College of ECS has Departments of Civil and Environmental Engineering, Electrical Engineering, and Mechanical Engineering which offer programs leading to the degree of Bachelor of Science and Master of Science in these disciplines; the three Bachelor of Science degree programs in Civil, Electrical, and Mechanical Engineering are nationally accredited by ABET, the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The college also offers a new program in Computer Engineering which has been designed to meet all ABET criteria for accreditation and a Master of Science in Software Engineering.

CSUF is located in an industrial and highly technological region of Southern California. Drawing upon its professional expertise in many areas of engineering, the Engineering programs serve as distinctive resources and catalysts for partnership with public and private organizations in our region. Our nationally accredited undergraduate engineering programs offer a broad education in basic sciences, mathematics, and fundamental principles and practice of engineering. These are coupled with studies in social sciences, arts, humanities, and behavioral sciences due to their importance for an engineer's professional career.

MISSION AND OBJECTIVES

Mission Statement

Consistent with the university's mission, learning is the first priority in Engineering. To implement its mission, the engineering programs at CSUF provide the best qualities of teaching, scholarship and professional practice. The programs are committed to facilitate the education of both engineering undergraduate and graduate students for their entrance in, and significant contribution to the engineering profession. Our students are actively engaged and work in collaboration with faculty and staff to acquire and expand knowledge. The objectives for our mission are further elaborated under "Educational Objectives."

Educational Objectives

The goals of the programs are as follows:

1. To provide the best of current practice, theory, research and intellectual study in the humanities to prepare students for challenging careers in engineering, strengthen relationships to their communities and contribute ethically and productively to society;
2. To educate students who, actively engaged with faculty and staff, work in collaboration to acquire and expand knowledge;
3. To provide service to the profession, the state of California, the country and to the world-wide development of engineering.

A critical focus of the education, research, and service programs within Engineering is to afford undergraduates of varying backgrounds and abilities every opportunity for achieving success in the engineering professions.

To achieve these goals, the faculty and students in Engineering, with input from other constituents, have established the following program educational objectives:

1. To prepare students for successful careers and lifelong learning;
2. To make students thoroughly proficient in methods of analysis, including the mathematical and computational skills appropriate for engineers to use when solving problems; and
3. To develop the skills pertinent to the design process, including the students' ability to formulate problems, to think creatively, to communicate effectively, to synthesize information, and to work collaboratively;

4. To teach students to use current experimental and data analysis techniques for engineering application; and
5. To instill in our students an understanding of their professional and ethical responsibilities.

Actual program educational objectives for various disciplines such as Civil and Environmental Engineering, Computer Engineering, Electrical Engineering and Mechanical Engineering are decided by the respective programs to match their program outcomes.

2 + 2 Articulated Programs with Community Colleges

The programs in Engineering have developed 2+2 articulation agreements with community colleges to provide students seamless transfer to the CSUF engineering program of their choice. This allows the full-time students, taking the courses specified by the engineering department each semester, to graduate in two years following transfer to CSUF.

INTRODUCTION

The undergraduate engineering programs have a broad base of science, mathematics, social sciences, humanities and engineering topics (which include engineering science and engineering design courses).

Students are thus pre-

pared to enter directly into engineering practice or to continue further education at the graduate level.

High School Preparation

The entering high school student should have a preparation which includes two years of algebra, geometry, trigonometry, and one year of physics or chemistry. Students deficient in mathematics or chemistry must take special preparatory courses, i.e., Mathematics 125 and Chemistry 115, which will not carry credit for the major. (See Mathematics Section for Entry Level Mathematics test and Math-Science Qualifying Examination requirements.)

Transfer Students

A transfer student shall complete a minimum of 30 units in residence of which at least 15 units shall be taken in upper-division engineering courses. Work taken at another college or university on which a grade below "C minus" (1.7) was earned may not be substituted for upper-division courses.

BACHELOR'S DEGREES IN ENGINEERING

The College offers Bachelor of Science degrees in Civil, Computer, Electrical and Mechanical Engineering.

At the time that the catalog went to press, the Bachelor of Science in Engineering, including the emphasis in Pharmaceutical Engineering and the option in Engineering Science, is under review and is closed for admissions.

The undergraduate program requirements in engineering are comprised of three major segments.

The first segment consists of foundation courses in mathematics and the physical sciences (33 units for Electrical Engineering, 32 units for Civil Engineering, and 30 units for Mechanical Engineering). The second segment contains 33 units of general education courses in the arts, humanities, social sciences, biological sciences and other related areas.

The third segment contains a sequence of courses in one of the four programs which includes a combination of required courses and adviser-approved technical elective courses. The number of units in this segment is not the same for each of the four engineering programs but varies from 45 to 50 units. Students must meet with their academic adviser to prepare an approved study plan of technical elective courses prior to taking such courses. Undergraduate students are required to meet with their academic adviser every semester during the first year and at least once a year thereafter. Students are strongly encouraged to see their academic advisers frequently.

All courses taken in fulfillment of the requirements for the bachelor's degrees in Engineering must be taken for a letter grade, i.e., under grade Option 1. All mathematics and physical science courses required for the degree must be completed with at least a "C" (2.0) grade to count as prerequisite courses to engineering courses or as credit towards the degree. Graduate courses are not open to undergraduate students without approval of the department head.

Mathematics and Science Courses

Mathematics 150A Calculus (4)

Mathematics 150B Calculus (4)

Mathematics 250A Multivariate Calculus (4)

Mathematics 250B Introduction to Linear Algebra and Differential Equations (4)

Chemistry 120A General Chemistry (5)

Physics 225, 225L Fundamental Physics: Mechanics and Lab (4)

Physics 226, 226L Fundamental Physics: Electricity and Magnetism and Lab (4)

Physics 227, 227L Fundamental Physics: Waves, Optics, and Modern Physics and Lab (4) (required in Electrical, and Engineering Science)

OR either Chemistry 125 (3) or Geological Sciences 376 (3) (required in Civil Engineering)

OR Physics 227 (1) (required in Mechanical Engineering)

OR Biology 101 (3) and Chemistry 301A (3) (Pharmaceutical Engineering)

INTERNSHIPS IN ENGINEERING

Internships for Engineering provide practical work experiences which integrate with and supplement the student's academic studies. Internship jobs are coordinated through the Center for Internships and Cooperative Education. In order to participate in this program, a student must register for EGGN 495 Professional Practice (1) for each semester of internship participation.



MASTER OF SCIENCE IN ENGINEERING
OPTION IN ENGINEERING SCIENCE

The degree consists of 30 units of adviser-approved 400- and 500-level courses. At least half the units required for the degree must be graduate (500-level) courses. A segment of the 30 units must include a math-oriented course as well as EGGN 403 Computer Methods in Numerical Analysis (3).

GENERAL ENGINEERING COURSES

Courses are designated as EGGN in the class schedule.

205 Digital Computation (3)

(Same as EGME 205)

308 Engineering Analysis (3)

Prerequisites: Physics 226, Math 250B or equivalent. Fundamentals and engineering applications of Fourier series, Fourier transforms, Laplace transforms, complex analysis, vector analysis; engineering applications. (Same as EGCE 308, EGEE 308 and EGME 308)

314 Engineering Economy (2)

Prerequisite: junior or senior standing in engineering. Development, evaluation and presentation of alternatives for engineering systems and projects using principles of engineering economy and cost benefit analysis. (Same as EGME 314)

403 Computer Methods in Numerical Analysis (3)

Prerequisites: Math 250B and EGGN 205 or equivalent. The use of numerical methods and digital computers in the solution of algebraic, transcendental, simultaneous, ordinary and partial differential equations.

495 Professional Practice (1)

Prerequisite: junior or senior standing in engineering. Professional engineering work in industry or government. Written report required. May be repeated for credit. Applicable towards bachelor's degree programs. Not for credit in the graduate program.

English, Comparative Literature and Linguistics

College of Humanities and Social Sciences

DEPARTMENT CHAIR

Joseph Sawicki

VICE CHAIR

Sheryl Fontaine

DEPARTMENT OFFICE

University Hall 323

DEPARTMENT WEBSITE

<http://hss.fullerton.edu/english>

PROGRAMS OFFERED

Bachelor of Arts in Comparative Literature
Bachelor of Arts in English
Minor in English
Master of Arts in English
Minor in Linguistics
Bachelor of Arts in Linguistics
Master of Arts in Linguistics

FACULTY

Marlin Blaine, Cornel Bonca, Ellen Caldwell, Mary Kay Crouch, Lana Dalley, Angela Della Volpe, Sheryl Fontaine, Joanne Gass, Jane Hipolito, Erin Hollis, Susan Jacobsen, Alan Kaye, Thomas Klammer, Deborah Lawrence, Mohsen Mirshafiei, Helen Mugambi, Franz Müller, Derek Pacheco, Irena Praitis, Chris Ruiz-Velasco, David Sandner, Joseph Sawicki, Yichin Shen, Kay Stanton, Atara Stein, Stephen Westbrook, John White, Heping Zhao

INTRODUCTION

The discipline of English includes the study of British and American literature, composition and rhetoric, and the history, structure and dialects of the English language.

The major in English is a flexible program emphasizing skill(s) in writing, familiarity with and appreciation of the literatures of England and America, and knowledge of the nature and development of the English language.

Comparative literature is the study of world literature without specific regard for national or linguistic boundaries. It is comparative in that it deals with the relationships among different literatures. The comparatist studies not only the international literary masterpieces and historical periods of world literature, but also examines critical theories from a cross-cultural perspective. The major in comparative literature promotes the understanding of world literatures and cultures in various historical periods, including the present, for students with a special concern for the relationships among the languages and literatures of various civilizations. Comparative literature courses are conducted in English, and required reading is available in English.

The study of literature and language helps students to achieve a mature understanding of themselves and the world and to learn to read critically and analytically, write clearly and persuasively, and reason soundly. For these reasons such study is ideal preparation for professional training in fields such as law, medicine, and religion, or for responsible positions in business and industry. The major in English may be combined with preparation for elementary and secondary school teaching. In addition, the majors in English, Comparative Literature and Linguistics provide a foundation for students who intend to work for advanced degrees in preparation for college teaching.

Advisers

English/Comparative Literature, Undergraduate:

All full-time faculty members serve as advisers.

English/Comparative Literature, Graduate:

Irena Praitis

Teaching Credential:

John White

Linguistics, Undergraduate:

Franz Müller

Linguistics, Graduate:

Franz Müller

An annual conference with a faculty adviser is required. New students must confer with an adviser in each of the first two semesters.

Credential Information

The bachelor's degree in English may be effectively combined with subject matter studies necessary for either the multiple subject teaching credential (K-8) or single subject credential (7-12) in English. Undergraduates are encouraged to work with the Center for Careers in Teaching (714-278-7130) as early as possible in their academic careers to plan efficient course selections for general education, the major and electives. With careful planning, it may be possible to enter the credential program in the senior year of the bachelor's degree. Postgraduate students should contact the Admission to Teacher Education office in the College of Education (714-278-3352) to obtain information on attending an overview presentation.

BACHELOR OF ARTS IN COMPARATIVE LITERATURE

The Bachelor of Arts in Comparative Literature requires a minimum of 120 units which includes courses for the major, General Education, all University requirements, and free electives. A grade of "C" (2.0) or better is required in all courses applied to the major. For the major, students must complete a total of 42 units of upper-division courses. In selecting courses, students are urged to consult a faculty adviser.

Required courses (English 300 and 18 units in comparative literature, including Comparative Literature 324, 325, and either English/Comparative Literature 450 or Comparative Literature 451);

British and American Literature (6 upper-division units listed under English); Breadth Requirement (6 adviser-approved units in other fields such as anthropology, history, art history, music history or philosophy);

Electives (9 upper-division units in comparative literature, or literature courses in English or an adviser-approved foreign language).

Reading Competence in a Foreign Language

This requirement can be met by examination or by successful completion of an adviser-approved 400-level course offered by the Department of Modern Languages and Literatures, provided it is not taught in translation. Information on the examination is available in the Department of English, Comparative Literature, and Linguistics office.

BACHELOR OF ARTS IN ENGLISH

The Bachelor of Arts in English requires a minimum of 120



units which includes courses for the major, General Education, all University requirements, and free electives. The English major consists of 42 units. At least 30 units must be upper-division courses. A grade of "C" (2.0) or better is required in all courses applied to the major. In selecting courses, students are urged to consult a faculty member of the Department of English, Comparative Literature and Linguistics. English 101, a graduation requirement for all students, is not part of the English major but is a prerequisite to further work in English.

Required Courses (9 units)

English 300 Analysis of Literary Forms (3)

English 301 Advanced College Writing (3)

English 316 Shakespeare (3)

Survey Courses (at least 6 units)

English 211 British Literature to 1760 (3)

English 212 British Literature from 1760 (3)

English 221 American Literature to Whitman (3)

English 222 American Literature from Twain to the Moderns (3)

Comp Lit 324 World Literature to 1650 (3)

Comp Lit 325 World Literature from 1650 (3)

Period, Genre and Criticism Courses

(At least 9 units, including at least 3 units from courses prior to

1800, i.e., 423, 450, 451, 452, 453, 454, 455, 456)

English 423 Early American Literature (3)

English 450 Medieval Literature (3)

English 451 Elizabethan and Jacobean Drama (3)

English 452 Elizabethan Poetry and Prose (3)

English 453 17th-Century Poetry and Prose (3)

English 454 The Drama of the Restoration and the 18th Century (3)

English 455 Restoration and 18th-Century Poetry and Prose (3)

English 456 The Development of the English Novel

Through Jane Austen (3)

English 457 The Romantic Movement in English Literature (3)

English 458 Victorian Literature (3)

English 459 The Development of the 19th Century English Novel (3)

English 462 Modern British and American Novels (3)

English 463 Contemporary Novels in English (3)

English 464 Modern British and American Drama (3)

English 465 Contemporary Drama in English (3)

English 466 Modern British and American Poetry (3)

English 467 Contemporary Poetry in English (3)

English 491 Traditions of English Literary Criticism (3)

English 492 Modern Critical Theory (3)

Major Author Courses (at least 3 units)

English 315 Chaucer (3)

English 317 Milton (3)

Language Courses (at least 3 units)

English 303 Structure of Modern English (3)

English 305 The English Language in America (3)

Electives (at least 12 units)

Chosen from English, Comparative Literature or Linguistics courses numbered 201 and above.

MINOR IN ENGLISH

Students must complete a total of 21 units, including 15 units as described below and 6 units of electives. No more than six units of lower-division course work can be applied to the minor. In selecting courses, students seeking a minor in English should consult a faculty member of the Department of English, Comparative Literature, and Linguistics.

A grade of "C" (2.0) or better is required in all courses applied to the minor.

Required Courses (9 units)

English 300 Analysis of Literary Forms (3)

English 301 Advanced College Writing (3)

English 316 Shakespeare (3)

Survey Courses (at least 6 units)

English 211 British Literature to 1760 (3)

English 212 British Literature from 1760 (3)

English 221 American Literature to Whitman (3)

English 222 American Literature from Twain to the Moderns (3)

Comp Lit 324 World Literature to 1650 (3)

Comp Lit 325 World Literature from 1650 (3)

Electives (at least 6 units)

Chosen from additional English, Comparative Literature, and Linguistics courses, with the exception of English 101 and 200. Students may take the approved upper-division writing course(s) in their majors instead of English 301. They must, however, complete 21 units in English, Comparative Literature, and Linguistics.

MASTER OF ARTS IN ENGLISH

The master's degree program in English offers students the opportunity to achieve a multifaceted understanding of literature and language. The degree is useful to those already teaching in high schools or interested in community college teaching, to those seeking careers in writing and publishing, and to those intending to take further graduate work.

Admission to Graduate Standing

Applicants are encouraged to make an appointment with the department graduate adviser. The adviser will review transcripts, advise applicants regarding prerequisites, and determine if any courses apply to the degree program.

Admission to the master's degree program is a prerequisite to enrollment in all graduate courses.

1. University requirements include a bachelor's degree from an accredited institution and a minimum GPA of 2.5 in the last 60 semester units attempted.
2. The department requires a bachelor's degree in English or Comparative Literature from an accredited institution with at least a 3.0 grade-point average in the upper-division major courses, provided that a minimum of 24 units of upper-division course work is included.

If the applicant holds a bachelor's degree in another major, 24 units of upper-division course work in English and/or Comparative Literature must be completed with at least a 3.0 grade-point average before beginning work in the master's degree program.

3. In the event that the applicant's grade-point average in prerequisite courses is below 3.0, he or she may take additional upper-division English and/or Comparative Literature course work and reapply to the program. The applicant should consult with the graduate adviser to determine appropriate course work. Some courses taken to make up qualitative deficiencies may be credited toward the M.A., if completed with a grade of "B" (3.0) or better, and if applicable to the student's particular study plan. Courses taken to remove quantitative deficiencies may not be applied to the M.A. program.
4. A writing sample will also be required of all applicants. The writing sample should demonstrate advanced skill in literary analysis and expository writing. A paper written for an upper-division literature course and analyzing one or more elements in one or more literary works is preferred. The writing sample should be approximately five to ten pages long, and it need not include secondary research. Applicants who do not have course papers available should contact the department graduate adviser for advice.

5. Applicants must submit three letter(s) of recommendation from individuals best qualified to judge their potential for graduate study in English.
6. All applicants, regardless of citizenship, whose preparatory education was principally in a language other than English, must demonstrate competence in English. Those who do not possess a bachelor's degree from a postsecondary institution where English is the principal language of instruction must receive a minimum score of 600 (paper) or 250 (computer) on the Test of English as a Foreign Language (TOEFL).

Application Deadlines

The deadlines for completing online applications are March 1st for the fall semester and October 1st for the spring semester (see <http://www.csumentor.edu>). Mailed applications need to be postmarked by the same deadlines. However, deadlines may be changed based upon enrollment projections. Check the university Graduate Studies website for current information <http://www.fullerton.edu/graduate/>

Foreign Language Requirement

Students must satisfy a foreign language requirement with one of the following options:

- (1) two years of foreign language at the college or university level,
- (2) one 400-level course in a foreign language or in literature taught in a foreign language,
- (3) Linguistics 406 Descriptive Linguistics or Linguistics 412 Sociolinguistics OR
- (4) another 400-level linguistics course approved by the graduate adviser. This requirement may be satisfied prior to or after admission to the M.A. program.

Study Plan

The graduate program in English comprises 30 units of course credit. All courses must be approved by the graduate adviser.

A study plan must be developed and approved for admission to classified graduate standing within the student's first nine units of graduate course work. Courses taken by a student admitted to the program with conditionally classified status do not necessarily apply toward the degree. No more than nine units of postgraduate course work may be applied to the master's degree program. See the graduate adviser for further information.

The study plan allows three units of adviser-approved course work outside the department and/or three units of graduate independent study. No more than six units are allowed at the 400 level. In addition, at least one proseminar or seminar must be in Comparative Literature or cross-listed in Comparative Literature. A project and comprehensive exam are required of all students. Students are encouraged to take English 500 in their first semester.

Core courses (6 units)

English 500 Introduction to Graduate Studies in Literature (3)

Analysis of Discourse (3 units from English 491, 492, 579T)

Proseminars (12 units)

English or Comparative Literature 525T Proseminar in Literature, Rhetoric, or Writing (3)

Students are encouraged to satisfy the proseminar requirements prior to taking seminars.

Seminars (9 units)

Students choose from advisor-approved seminar courses (English or Comparative Literature 509T, 571T, 572T, 573T, 574T, 575T, or 591T, or other adviser-approved courses).

Project (3 units)

In addition to the written exam described below, students are required to complete a project in the project writing course, English 595. Students who plan to do a creative writing project must take a minimum of six units of creative writing workshops, one of which must be at the 500 level.

Project proposals are due before the end of the fifth week of the semester preceding enrollment in the project writing course and must be approved by the department Graduate Studies Committee. If the proposal is not approved when first submitted, students may resubmit only once in the same semester. Please consult the graduate adviser or department office for further details.

Comprehensive Exam

In order to complete degree requirements, students must pass a two-part written exam involving analysis and synthesis. Failed parts of the exam may be retaken only once. The deadline to file a notice of intention to take the examination is the end of the third week of the semester in which the student plans to take the exam.

BACHELOR OF ARTS IN LINGUISTICS MINOR IN LINGUISTICS

For information on these programs and a listing of linguistics courses, please consult the "Linguistics" section of this catalog.

COMPARATIVE LITERATURE COURSES

Courses are designated as CPLT in the class schedule.

110 Literature of the Western World from Ancient through Medieval Times (3)

(Same as English 110)

111 Literature of the Western World from the Renaissance through the 19th Century (3)

(Same as English 111)

312 The Bible as Literature (3)

Prerequisite: completion of General Education Category III.B.2. Literary qualities of biblical literature and the influence of major themes upon Western literary traditions. (Same as Comparative Religion 312)

315 Classical Mythology in World Literature (3)

Prerequisite: completion of General Education Category III.B.2. Greek and Roman myths which have been of continuing significance in Western world literature.

324 World Literature to 1650 (3)

Prerequisites: junior or senior standing and completion of any literature course from General Education Category III.B.2. Asian and Western literature from the beginning to 1650.

325 World Literature from 1650 (3)

Prerequisites: junior or senior standing and completion of any literature course from General Education Category III.B.2. Asian and Western literature from 1650 to the present.

355T Images of Women in Literature (3)

(Same as English 355T)

373 Nineteenth-Century Russian Literature (3)

Prerequisites: junior or senior standing and completion of any literature course from General Education Category III.B.2. Major writers such as Pushkin, Gogol, Dostoyevsky, Tolstoy, Chekhov, and their relationship to Western literature.

374 Twentieth-Century Russian Literature (3)

Prerequisite: completion of any literature course from General Education Category III.B.2. Soviet peoples' literature from 1918 to the present. Basic trends in literary criticism. Major writers such as Gorky, Blok, Mayakovsky, Zamyatin, Zoshchenko, Akhmatova and Pasternak.

380 Introduction to Asian Literature (3)

Prerequisite: completion of any literature course from General Education Category III.B.2. Selected translations of Arabic, Persian, Indian, Chinese and Japanese literature.

381 African Literature (3)

(Same as English 381 and Afro-Ethnic Studies 381)

382T Topics in Asian Literature (3)

Prerequisite: completion of any literature course from General Education Category III.B.2. Specific topics will vary from semester to semester. May be repeated with different content for additional credit.

450 Medieval Literature (3)

(Same as English 450)

451 Literature of the Renaissance (3)

Prerequisites: survey of English, American, or world literature; an upper-division literature course; or equivalent. The Renaissance as a literary movement, from Erasmus to Montaigne and Cervantes.

499 Independent Study (1-3)

Prerequisite: junior or senior standing.

525T Proseminar in Literature, Rhetoric, or Writing (3)

(Same as English 525T)

571T Graduate Seminar: Major Writers (3)

(Same as English 571T)

572T Graduate Seminar: Literary Genres (3)

(Same as English 572T)

573T Graduate Seminar: Cultural Periods (3)

(Same as English 573T)

574T Graduate Seminar: Special Problems in Literature (3)

(Same as English 574T)

575T Graduate Seminar: Topics in Teaching (3)

(Same as English 575T)

579T Graduate Seminar: Problems in Criticism (3)

(Same as English 579T)

597 Project (3)

(Same as English 597)

599 Independent Study (1-3)**ENGLISH COURSES**

Courses are designated as ENGL in catalog.

For world literature in English translation, see courses under Comparative Literature (CPLT)

099 Developmental Writing (3)

An intensive course in basic writing skills. Designed to prepare students for English 101 and is intended for students who score 133 to 144 on the English Placement Test (EPT). Degree credit is not awarded for this course.

099M Developmental Writing (3)

Intensive course in basic writing skills and language development. Designed to prepare students for English 101 and intended for students who score below 133 on the English Placement Test (EPT). Degree credit is not awarded for this course.

101 Beginning College Writing (3)

Prerequisite: English 099, a satisfactory score on the English Placement Test, or exemption from the EPT. An introductory course in the fundamentals of expository prose. Emphasizes grammatical and basic rhetorical concepts and practices necessary for successful college writing. Instructional fee. (CAN ENGL 2)

105 Introduction to Creative Writing (3)

Prerequisite: English 101. Exploratory creative writing with the opportunity to write in various genres. No credit toward the major.

110 Literature of the Western World from Ancient through Medieval Times (3)

Representative writers and works from the ancient through the medieval world. (Same as Comparative Literature 110)

111 Literature of the Western World from the Renaissance through the 19th Century (3)

Representative writers and works from the Renaissance through the 19th century. (Same as Comparative Literature 111)

199 Intensive Writing Review (3)

Prerequisite: consent of instructor. Restricted to students who have failed the EWP at least twice. Intensive review of the fundamentals of writing expository prose. Meets examination portion of baccalaureate writing requirement. Carries no credit toward graduation.

200 Introduction to Literature (3)

An introduction to the study of fiction, drama and poetry. Concentration on the critical understanding of literary types rather than on their historical development. Carries no credit toward the major.

206 Introduction to Language Structure and Language Use (3)

An introduction to the nature, structure, development, and use of English. Explores how sounds are articulated and patterned in meaningful units (phonology); symbolic correspondence (phonics); rules of word formation (morphology); word history (etymology); and language use (pragmatics). (Same as Linguistics 206)

211 British Literature to 1760 (3)

Major periods and movements, major authors, and major forms through 1760.

212 British Literature from 1760 (3)

Major periods and movements, major authors and major forms from 1760 through modern times.

221 American Literature to Whitman (3)

Major writers such as Hawthorn, Poe, Melville, Emerson, Thoreau, Whitman, and Dickinson.

222 American Literature from Twain to the Moderns (3)

Major writers such as Twain, James, Crane, Hemingway, Faulkner, O'Neill, Frost, and Elliot.

300 Analysis of Literary Forms (3)

The main literary forms-prose fiction, poetry and drama-are studied and analyzed. English majors should schedule this basic course as early as possible.

301 Advanced College Writing (3)

Prerequisite: English 101. An advanced course in writing expository prose. Emphasizes precision in rhetoric and development of individual style by concentration on matters of diction, audience, emphasis and persuasion. Required of English majors seeking a secondary credential. Instructional fee.

302 Advanced Composition and Rhetoric for English Teachers (3)

Prerequisite: English 101. Focus on the writing process. Emphasis on instruction in expository prose, journalistic prose, and creative writing for prospective teachers of English. English 302 meets the university upper-division writing requirement for English majors.

303 The Structure of Modern English (3)

Prerequisite: junior standing. The grammar of contemporary English. Modern English usage. Required of English majors seeking a secondary credential. Must be taken before student teaching.

305 The English Language in America (3)

American English, its origins, its regional and social dialects, and its role in American history and in such institutions as schools, corporations, government, and the media. (Same as Linguistics 305)

306 Intermediate Creative Writing (3)

Prerequisite: Completion of General Education Categories III.B.1 III.B.2. A course providing experience in creative writing beyond the introductory level. Emphasis on poetry, the short story, and/or the one-act play.

315 Chaucer (3)

Prerequisite: English 101 or equivalent. The Canterbury Tales and Chaucer's language. The vocabulary, pronunciation, grammar and syntax of the East Midland dialect of Middle English.

316 Shakespeare (3)

Prerequisite: English 101 or equivalent. A study of the major plays.

317 Milton (3)

Prerequisite: English 101 or equivalent. The poetry and prose in the light of Milton's intellectual development.

324 Introduction to Afro-American Literature (3)

(Same as Afro-Ethnic 324)

325 American Ballad and Folksong (3)

Anglo-American balladry and folksong; their historical development, ethnic background and poetical values.

326 The American Frontier in Literature (3)

Prerequisite: any courses in American literature, American studies or American history. Thematic study of American literature as it reflects the changing frontier experience and establishes national myths and symbols.

327 Asian American Literature (3)

(Same as Asian American Studies 327)

328 Literature of the American Indians (3)

Prerequisite: completion of any literature courses from General Education Category III.B.2. The prose and poetry of the North American Indian tribes.

341 Children's Literature (3)

Prerequisite: completion of any literature course in General Education Category III.B.2. World literature written primarily for children, including material from the oral tradition, realistic fiction, fantasy, and poetry. Not applicable for graduate degree credit.

355T Images of Women in Literature (3)

Prerequisite: junior or senior standing. Images of women in genres such as autobiography, poetry, drama, novel. Individual sections may treat conventional literary periods or specific cultures. May be repeated with different content for additional credit. (Same as Comparative Literature 355T)

360 Scientific and Technical Writing (3)

Open to science and non-science students. Scientific and professional writing and editing, with attention to outlines and abstracts, description, process explanation, instructions, and fundamentals of reports, feasibility studies, proposals, internal memos, and letters.

365 Legal Writing (3)

Advanced compositions stressing logic, reasoning, and legal analysis.

370 Horror Fiction (3)

Prerequisite: English 101 or equivalent. Horror/occult fiction (or "dark fantasy") from Mary Shelley to the present, including such writers as E. A. Poe, J. S. LeFanu, Bram Stoker, H. P. Lovecraft, Fritz Leiber, and Stephen King.

371 Fantasy Fiction (3)

Prerequisite: English 101 or equivalent. Fantasy in literature from Ariosto to Brautigan.

372 Detective Fiction (3)

Prerequisite: English 101 or equivalent. Detective fiction from Edgar Allan Poe to the present, including writers such as Sayers, Christie, Chandler, Hammett, and Ross MacDonald.

373 Science Fiction (3)

Prerequisite: English 101 or equivalent. Science fiction as a literary genre, including future-scene fiction, the utopian novel, the superman/woman novel and short stories.

374 The Gothic Novel (3)

Prerequisite: English 101. The development of the Gothic Novel in England from 1750-1850, including such authors as Walpole, Smith, Radcliffe, Lewis, Mary Shelley, Austen, Maturin, and Emily Brontë.

381 African Literature (3)

Prerequisite: completion of any literature course from General Education Category III.B.2. African literature written in the English language; the fiction, poetry and drama of the new nations. (Same as Comparative Literature 381 and Afro-Ethnic Studies 381)

402 Theories of Response to Written Composition (2)

Prerequisite: English 301 and 303 or equivalents. Corequisite: English 402S. May be taken for letter grade or credit/no credit.

402S Tutor Supervision (1)

Prerequisites: English 301 and English 303. Corequisite: English 402. May be taken for letter grade or credit/no credit.

404T Advanced Creative Writing (3)

Prerequisite: English 306 or its equivalent. Instruction and practice in a workshop setting for the student with some experience in creative writing; emphasis on writing for professional markets. Consult the class schedule to determine section's emphasis. May be repeated for credit.

416 Studies in Shakespeare (3)

Prerequisite: English 316. Problems of dramatic structure and artistic meanings.

423 Early American Literature (3)

Prerequisite: English 321. Literature of colonial and revolutionary America, including the Puritans, 18th-century deism and rationalism, and the literary antecedents of American democratic thought.

429 American Landscape in Literature (3)

The American landscape in literature. Literary perception of our environment, with special attention to what perceptions of the landscape reveal about human nature.

434 Literature for Junior and Senior High School (3)

Prerequisite: junior or senior standing. The evaluation, selection, and interpretation of fiction, non-fiction, drama, and poetry reflecting the broad range of interest of young people from 12 to 17 years of age.

442 Changing Words: History, Semantics, and Translation (3)

(Same as Linguistics 442)

450 Medieval Literature (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. Readings in modern English translation from the medieval literature of England and the continent from St. Augustine to Sir Thomas Malory. (Same as Comparative Literature 450)

451 Elizabethan and Jacobean Drama (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. The dramatic tradition in plays by such dramatists as Marlowe, Jonson, Webster, Beaumont and Fletcher.

452 Elizabethan Poetry and Prose (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. The non-dramatic literature of the English Renaissance.

453 17th-Century Poetry and Prose (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. Non-dramatic literature of the period from 1603 to 1660 excluding Milton.

454 The Drama of the Restoration & the 18th Century (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. Representative plays of the Restoration and the 18th century. The development of such dramatic movements as the heroic play, Restoration comedy, and sentimental drama.

455 Restoration and 18th-Century Poetry and Prose (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. Major writers such as Butler, Rochester, Dryden, Pepys, Swift, Addison and Steele, Pope, Boswell, Johnson, and selected minor writers.

456 The Development of the English Novel through Jane Austen (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. The English novel from its beginnings to the 19th century including such novelists as Defoe, Richardson, Fielding, Sterne, and Austen.

457 The Romantic Movement in English Literature (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. Major writers such as Burns, Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats.

458 Victorian Literature (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. Major writers such as Carlyle, Tennyson, Browning, Arnold, Ruskin, and Pater.

459 The Development of the 19th-Century English Novel (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. Major novelists such as the Brontës, Thackeray, Dickens, Eliot, and Hardy.

462 Modern British and American Novels (3)

Prerequisite: survey of English, American or world literature; an upper-division literature course; or equivalent. Modern British and American novels from 1900 to 1950.

463 Contemporary Novels in English (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. The novel in English since World War II.

464 Modern British and American Drama (3)

Prerequisite: survey of English, American or world literature; an upper-division literature course; or equivalent. British and American drama from 1900 to 1950.

465 Contemporary Drama in English (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. Drama in English from 1950 to the present.

466 Modern British and American Poetry (3)

Prerequisite: survey of English, American or world literature; an upper-division literature course; or equivalent. British and American poetry from 1900 to 1950.

467 Contemporary Poetry in English (3)

Prerequisites: survey of English, American or world literature; an upper-division literature course; or equivalent. Poetry in English from 1950 to the present.

491 Traditions of English Literary Criticism (3)

Prerequisite: English 300 or equivalent. The major English critics, from the Renaissance to the beginning of the 20th century, in relationship to the classical theories of criticism.

492 Modern Critical Theory (3)

Prerequisite: English 300 or equivalent. The major movements in 20th-century British and American criticism.

498 English Internship (3)

Prerequisites: junior or senior status and consent of faculty supervisor. Experience in the practical application of studies in literature and language to work outside the university. Hours to be specified; enrollment limited; Credit/No Credit; no credit toward major.

499 Independent Study (1-3)

Prerequisite: junior or senior standing. Open to advanced students in English with consent of department chair. May be repeated for credit.

500 Introduction to Graduate Studies in Literature (3)

Research techniques, analytical approaches and theories of literature. A course providing basic orientation in graduate literary studies.

509T Creative Writing Workshop (3)

An intensive graduate-level workshop in creative writing. Students will produce their own work, write critiques of others' works, and discuss opportunities for publication. Recommended for students with an interest in creative writing. Workshops may focus on the writing of poetry or fiction or of a mix of fiction and drama, depending on expertise of instructor. May be repeated for credit with different topic.

510 Rhetorical Criticism and Discourse Analysis (3)

This course will cover theories of disclosure and rhetorical analysis ranging from an overview of historically foundational/classical readings and approaches to contemporary rhetorical theories and their applications to textual criticism.

525T Proseminar in Literature, Rhetoric, or Writing (3)

Comprehensive readings course focusing on a key area in literature, rhetoric or writing. Examines major primary works and where they exist, major critical texts representing the area. Students are strongly advised to take proseminars before enrolling in seminars. May be repeated for credit with a different topic. (Same as Comparative Literature 525T)

571T Graduate Seminar: Major Writers (3)

As appropriate to the specialized research and publication of instructor; major figures such as Shakespeare, Dante, Shakespeare, Cervantes, Goethe, Bronte, Twain, Joyce, Woolf, and Morrison. May be repeated with different content for additional credit. (Same as Comparative Literature 571T)

572T Graduate Seminar: Literary Genres (3)

As appropriate to the specialized research and publication of instructor, major literary types such as the novel, the short story, lyric poetry, tragedy, comedy, and historical drama. May be repeated with different content for additional credit. (Same as Comparative Literature 572T)

573T Graduate Seminar: Cultural Periods (3)

As appropriate to the specialized research and publication of instructor, the literature of a cultural period from Anglo-Saxon to modern times. May be repeated with different content for additional credit.

574T Graduate Seminar: Special Problems in Literature (3)

As appropriate to the specialized research and publication of the instructor, special problems such as influences on literature, including philosophical, religious, scientific, geographic, and other ecological viewpoints. May be repeated with different content for additional credit. (Same as Comparative Literature 574T)

575T Graduate Seminar: Topics in Teaching (3)

Specific topics will vary from semester to semester. May be repeated with different content for additional credit. (Same as Comparative Literature 575T)

579T Graduate Seminar: Problems in Criticism (3)

Historical development and schools of criticism. Individual offerings within this course number may deal with only one aspect of critical problems. May be repeated with different content for additional credit. (Same as Comparative Literature 579T)

590 Writing Theory and Practice for Teaching Associates (3)

Prerequisite: English 402 and admission to the English Department Teaching Associate Program. Theory and practice of the composing process for the beginning college teacher of expository writing. Required of all English Department Teaching Associates during their first semester of teaching.

590S Teaching Associate Supervision (1)

Prerequisite: English 590. Supervised teaching of developmental writing and freshman composition. No credit toward the M.A. in English. This course may be repeated for credit.

591T Seminar: Topics in Rhetoric and Composition (3)

As appropriate to the specialized research of instructor, special topics on rhetoric and composition, including historical and theoretical approaches. May be repeated with different content for additional credit.

595 M.A. Project Writing (3)

This course will guide students through the process of writing an M.A. project in literature, rhetoric and composition, or creative writing. To enroll in the course, students must receive prior departmental approval of their M.A. project proposal.

597 Project (3)

Prerequisite: classified graduate standing. A research paper, a critical study, a portfolio of creative writing, or the results of fieldwork or experiment. Supervising professor and English department graduate studies committee must approve the proposal in advance of registration. (Same as Comparative Literature 597)

599 Independent Graduate Research (3)

Research projects in areas of specialization beyond regularly offered course work. Oral and written reports. May be repeated with different content for additional credit.

ENGLISH EDUCATION COURSES

Courses are designated as ENED in catalog.

442 Teaching English in the Secondary School (3)

Prerequisite: admission to teacher education. Principles, methods and materials of teaching English in the secondary school.

449E Externship in Secondary Teaching (3)

Student teaching in the secondary school during the first semester of the teacher preparation program. The candidate plans and teaches assigned lessons during the last third of the semester.

449I Internship in Secondary Teaching (10)

Student teaching in the secondary school during the second semester of the teacher preparation program. The candidate has the same instructional hours of responsibility as the master teacher.

449S Seminar in Secondary Teaching (3)

Taken concurrently with Ed Sec 449I. Seminar in teaching a single subject in secondary schools. Videotape analysis of teaching based on Teaching Performance Assessments. Taken Credit/No Credit. A "B" (3.0) or better is required to receive a grade of credit.



Environmental Studies

College of Humanities and Social Sciences

INTRODUCTION

The master's program in Environmental Studies is a broadly based interdisciplinary program that focuses on human interaction with the environment. The program is geared for students entering the rapidly expanding environmental field, especially in science, planning and regulation, and education. Because the scale and scope of environmental issues vary from local and practical to international and theoretical, the program seeks to integrate knowledge and approaches from a range of related disciplines in the sciences, social sciences, and humanities. Topics include environmental policy, management, pollution, law, philosophy, economics, planning, regulation and education. Given the range of their academic backgrounds, students are encouraged to craft a study plan that meets their own particular career or avocational goals. Students demonstrate their expertise in one of the environmental concentrations by preparing a thesis or project.

Students select a course of study consistent with one of the following three concentrations:

Environmental Sciences

This area deals with the application of physical and biological science principles to environmental issues. Topical concerns include environmental ecology, water and air resources waste management, toxicology and environmental geology. Students in this emphasis typically have a strong background in biology, chemistry, earth science, engineering, geography, geology or mathematics.

Environmental Policy and Planning

This area deals with the concepts and methods of the social and behavioral sciences as applied to environmental policy and planning. Topical concerns include urban and regional planning, environmental aspects of administration, design, ethics, perception, law and economics. Students in this area come from many backgrounds, including the natural, social or behavioral sciences, or the humanities.

Environmental Education and Communication

This emphasis seeks to develop a body of knowledge that is consistent with the needs of the environmental educator, the outdoor naturalist or the communication specialist. Students in this emphasis area should have a background in natural science, education or communications.

International Learning Opportunities in Environmental Studies

Because many environmental problems are trans-boundary in nature, our curriculum necessarily addresses issues that are international in scope. From topical courses, such as Environmental Ethics and Global Environmental Issues, to region-specific courses, such as Wetlands and Tropical Rainforests, students tackle an array of internationally significant environmental problems. This experience is enhanced further through interaction with the significant number of international students enrolled in the program.

MASTER OF SCIENCE IN ENVIRONMENTAL STUDIES

Application Deadlines

The deadlines for completing online applications are April 1st for the fall semester and November 1st for the spring semester (see <http://www.csumentor.edu>). Mailed applications need to be postmarked by the same deadlines. However, deadlines may be changed based upon enrollment projections. Check the university graduate studies website for current information <http://www.fullerton.edu/graduate/>.

PROGRAM COORDINATOR

Robert Voeks

ASSOCIATE COORDINATOR

Vacant

PROGRAM OFFICE

Humanities 420A

DEPARTMENT WEBSITE

<http://hss.fullerton.edu/envstud/>

PROGRAM OFFERED

Master of Science in Environmental Studies

PROGRAM COUNCIL AND ADVISERS

Mike Steiner (American Studies), John Bock (Anthropology), Sandra Banack (Biological Science), Darren Sandquist (Biological Science), Harold Rogers (Chemistry) Jeff Kuo (Civil Engineering), Denise Stanley (Economics), Jonathan S. Taylor (Geography), John Foster (Geological Sciences), William Laton (Geological Sciences), Shari McMahan (Health Science), Gordon Bakken (History), Mitch Avila (Philosophy), Vince Buck (Political Science), Dennis Berg (Sociology).

Admission to Graduate Standing: Conditionally Classified

University requirements include a baccalaureate from an accredited institution and a grade-point average of 3.0 in the last 60 units of course work attempted. In addition, two letters of recommendation are required, at least one of which must come from a college or university.

An undergraduate course in ecology and one in quantitative methods are prerequisites for admission. Students without these prerequisites will be admitted provisionally but must take these courses during their first year in the program.

Graduate Standing: Classified

After completion of no more than nine semester units of adviser-approved course work and the development of an approved study plan, the student should apply for classified standing.

STUDY PLAN

The M.S. in Environmental Studies requires the completion of 36 units of adviser-approved course work with a GPA of 3.0 or better and includes a thesis or project. The student's thesis committee should be comprised of three CSUF faculty members, representing at least two different academic disciplines. A student's project is supervised by a single CSUF faculty member.

Environmental Studies Core (9 units)

Environmental Studies 500 Environmental Issues and Approaches (3)
Environmental Studies 510 Environmental Evaluation and Protection (3)
Environmental Studies 520 Environmental Research and Analysis (3)

Environmental Studies Electives (12-15 units)

Choose from:

Environmental Studies 595T Selected Topics in Environmental Problems (3)
Environmental Studies 596 Internship in Environmental Studies (3)
Environmental Studies 599 Independent Graduate Research (1-3)

Cross-Disciplinary Electives Work (9-12 units)

Courses outside Environmental Studies are chosen with prior approval of the faculty adviser and must be consistent with the student's area of concentration.

No more than 12 units can be taken from the undergraduate major department. A three-unit planning course must be included, either from environmental studies electives or cross-disciplinary elective..

Thesis 598 or Project 597 (3 units)

All Environmental Studies students are required to register in Environmental Studies 597 Project or Environmental Studies 598 Thesis exit research option. Students may only register for this course once. If they do not complete their project or thesis within this semester, they will be assigned a grade of RP for the course until a letter grade can be assigned. Since students are required to maintain continuous enrollment, they must register in GS 700 either through University Extension or CSUF. Students may only enroll in GS 700 through University Extension for one semester if they are working on a project and for two semesters if they are working on a thesis.

The deadline for project completion is the last Friday before the final exam period each semester. The deadline for thesis completion

is set by the university (usually three weeks before the end of exam week). By the thesis/project deadline, a notification of completion form must be submitted with the faculty adviser's signature and (if applicable) with change of grade card(s) from the faculty adviser. In addition, all students must submit a hard-bound copy of his or her completed project or thesis. A receipt indicating that a bound and title-embossed copy of the thesis or project has been ordered for the Environmental Studies Program may be submitted on the deadline.

For further information, consult the graduate program associate coordinator.

ENVIRONMENTAL STUDIES COURSES

Courses are designated as ENST in the class schedule

500 Environmental Issues and Approaches (3)

Prerequisite: graduate standing in Environmental Studies. Discussions of interdisciplinary approaches to environmental problems and research methods. Students prepare seminars and papers on research design for potential thesis topics. Meets graduate writing requirement.

510 Environmental Evaluation and Protection (3)

Prerequisite: graduate standing in Environmental Studies. Environmental parameters (water, air, solid wastes, noise, radiation, etc.). Techniques in monitoring and measurement; effect on human health; environmental quality standards and controls. Demonstrations and field trips.

520 Environmental Research and Analysis (3)

Prerequisite: graduate standing in Environmental Studies. Research methods used in the field of environmental studies. Research tools used in such areas as environmental field studies, environmental experiments, social environmental impacts, environmental attitudes and behavior and environmental trend analysis.

595T Selected Topics in Environmental Problems (3)

Prerequisite: graduate standing in Environmental Studies. Various environmental topics, contemporary or historic, that focus on problems (e.g., law, endangered habitats, planning, global environmental issues, etc.) Topic chosen and outline will be circulated prior to registration. May be repeated four times (with different topics) for credit.

596 Internship in Environmental Studies (3)

Prerequisite: graduate standing in Environmental Studies. Field experience with a governmental or private agency.

597 Project (3)

Prerequisites: classified status in Environmental Studies program and consent of project adviser and program coordinator. Planning, preparation and completion of an acceptable, interdisciplinary project. Credit on submission of project and presentation of research findings in a poster session organized by the Environmental Studies Program.

598 Thesis (3)

Prerequisites: classified status in Environmental Studies program and consent of instructor and program coordinator. Planning, preparation and completion of an acceptable, interdisciplinary thesis. Credit on submission of thesis.

599 Independent Graduate Research (1-3)

Prerequisite: graduate standing in Environmental Studies and consent of instructor and program coordinator.

