EE 247. Current Topics in Computer Vision and Pattern Recognition (4) Lecture, 3 hours; outside research, 3 hours. Prerequisite(s): EE 240 or EE 243 or consent of instructor. Explores advanced mathematical techniques of recent research interest. Topics include particle filters, sampling techniques, stochastic optimization, stochastic approximation algorithms, independent component analysis, energy function techniques, nonlinear discriminant analysis, and support vector machines.

EE 250. Information Theory (4) Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): EE 215. An overview of fundamental limitations imposed on communication systems. Topics include Shannon’s information measures, weak and strong typicality, lossless data compression, source and channel models and Shannon’s coding theorems, channel capacity and the rate-distortion function, Gaussian sources and channels, and limits of communication between multiple terminals.

EE 251. Algorithmic and Combinatorial Coding Theory (4) Seminar, 2 hours; lecture, 2 hours. Prerequisite(s): EE 225 or consent of instructor. Explores combinatorial and algorithmic techniques in coding theory. Covers algebraic design of Bose-Chaudhuri-Hocquenghem (BCH) codes and Reed-Muller codes. Algorithmic topics include gradient-like decoding, split-syndrome techniques, and information-set decoding. Introduces decoding with polynomial complexity based on Bayesian estimation, iterative decoding, and codes on graphs. May be taken Satisfactory (S) or No Credit (NC) with consent of instructor and graduate advisor.

EE 259. Colloquium in Electrical Engineering (1) Colloquium, 1 hour. Prerequisite(s): standing as lecturer on current research topics in electrical engineering presented by faculty members and visiting scientists. Graded Satisfactory (S) or No Credit (NC). Course is repeatable.

EE 260. Seminar in Electrical Engineering (4) Seminar, 4 hours. Prerequisite(s): consent of instructor. Seminar on current research topics in electrical engineering, including areas such as signal processing, image processing, robotics, intelligent systems, computer vision, and pattern recognition. Course is repeatable to a maximum of 16 units.

EE 290. Directed Studies (1-6) Individual study, 3-18 hours. Prerequisite(s): graduate standing; consent of instructor and Graduate Advisor. Individual study, directed by a faculty member, of selected topics in electrical engineering. Graded Satisfactory (S) or No Credit (NC). Course is repeatable to a maximum of 12 units.

EE 297. Directed Research (1-6) Outside research, 3-18 hours. Prerequisite(s): graduate standing; consent of instructor. Research conducted under the supervision of a faculty member on selected problems in electrical engineering. Graded Satisfactory (S) or No Credit (NC). Course is repeatable.

EE 298-I. Individual Internship in Electrical Engineering (1-12) Internship, 2-24 hours; written work, 1-12 hours. Prerequisite(s): graduate standing; consent of instructor. Provides the Electrical Engineering graduate student with career experience as an electrical engineer in an industrial or research unit. Includes fieldwork with an approved professional individual or organization and academic work under the direction of a faculty member. Requires a final report. Graded Satisfactory (S) or No Credit (NC). Course is repeatable to a maximum of 12 units.

EE 299. Research for the Thesis or Dissertation (1-12) Outside research, 3-36 hours. Prerequisite(s): graduate standing; consent of instructor. Research in electrical engineering for the M.S. thesis or Ph.D. dissertation. Graded Satisfactory (S) or No Credit (NC). Course is repeatable.

Engineering

Subject abbreviation: ENGR

The Marian and Rosemary Bourns College of Engineering

Advising Office, A159 Bourns Hall (951) 827-ENGR (3647); www.engr.ucr.edu/studentaffairs

Courses in Engineering are a multidisciplinary approach to providing students with training in concepts common to multiple engineering fields. The courses support the undergraduate programs in all disciplines in the Marian and Rosemary Bourns College of Engineering. Refer to these programs in this section of the catalog for information on course application.

Lower-Division Courses

ENGR 001 (E-Z). Professional Development and Mentoring (1) Activity, 30 hours per quarter. Prerequisite(s): junior standing in the Bourns College of Engineering. Provides students with involvement in professional development activities. Activities to be performed are program-specific, and may include projects, industry overviews and interactions, involvement with professional societies and clubs, team building, career guidance, and coverage of ethics and lifelong learning issues. E. Bioengineering; F. Chemical Engineering; G. Computer Engineering; I. Computer Science; J. Electrical Engineering; K. Environmental Engineering; M. Information Systems.

ENGR 002 (E-Z). Professional Development and Mentoring (1) Activity, 30 hours per quarter. Prerequisite(s): sophomore standing in the Bourns College of Engineering. Provides sophomores with involvement in professional development activities. Activities to be performed are program-specific, and may include projects, industry overviews and interactions, involvement with professional societies and clubs, team building, career guidance, and coverage of ethics and lifelong learning issues. E. Bioengineering; F. Chemical Engineering; G. Computer Engineering; I. Computer Science; J. Electrical Engineering; K. Environmental Engineering; M. Information Systems.

ENGR 010. Introduction to Engineering (2) Discussion, 1 hour; laboratory, 3 hours. Prerequisite(s): none. Introduction to and experience with common everyday engineering and technology devices. Aims to enrich students’ appreciation of technology and the application of simple science and engineering concepts in the design and operation of these devices, and to provide students with an early positive engineering experience and interaction with College of Engineering faculty. Graded Satisfactory (S) or No Credit (NC). Credit is awarded for only one of ENGR 010 or ME 001A.

ENGR 092. First-Year Seminar in Engineering (1) Seminar, 10-15 hours per quarter. Prerequisite(s): Freshman standing. Enrollment priority is given to freshmen, but sophomores may enroll on a space-available basis with consent of instructor. Introduction to one of the many areas of study explored by the faculty of the College of Engineering in a small-group, highly interactive format. Graded Satisfactory (S) or No Credit (NC). Course is repeatable as topics change to a maximum of 3 units of any combination of ENGR 092, HASS 092, and NASC 092; students may enroll in only 1 unit of ENGR 092, HASS 092, or NASC 092 per quarter.

Upper-Division Courses

ENGR 101 (E-Z). Professional Development and Mentoring (1) Activity, 30 hours per quarter. Prerequisite(s): junior standing in the Bourns College of Engineering. Provides seniors with involvement in professional development activities. Activities to be performed are program-specific, and may include projects, industry overviews and interactions, involvement with professional societies and clubs, team building, career guidance, and coverage of ethics and lifelong learning issues. E. Bioengineering; F. Chemical Engineering; G. Computer Engineering; I. Computer Science; J. Electrical Engineering; K. Environmental Engineering; M. Information Systems.

ENGR 102 (E-Z). Professional Development and Mentoring (1) Activity, 30 hours per quarter. Prerequisite(s): senior standing in the Bourns College of Engineering. Provides seniors with involvement in professional development activities. Activities to be performed are program-specific, and may include projects, industry overviews and interactions, involvement with professional societies and clubs, team building, career guidance, and coverage of ethics and lifelong learning issues. E. Bioengineering; F. Chemical Engineering; G. Computer Engineering; I. Computer Science; J. Electrical Engineering; K. Environmental Engineering; M. Information Systems.

ENGR 118. Engineering Modeling and Analysis (5) Lecture, 4 hours; discussion, 1 hour. Prerequisite(s): CHEM 010A or CHEM 01HA; CS 010, MATH 046; PHYS 045B; or consent of instructor. Covers the formulation of mathematical models for engineering systems; applying mass, momentum, and energy balances to derive governing differential equations; solving equations with the use of spreadsheets and other software packages; and fitting linear and nonlinear models to experimental data. Credit is awarded for only one of ENGR 118 or ME 118.

ENGR 180. Technical Communications (3) Lecture, 2 hours; workshop, 3 hours. Prerequisite(s): ENGL 001C or ENGL 011C; upper-division standing. Develops oral, written, and graphical communication skills. Involves extensive oral communication and presentations in small groups, and preparing and critiquing reports, proposals, instructions, and business correspondence. Emphasizes professional and ethical responsibilities and the need to stay current on technology and its global impact on economics, society, and the environment.

ENGR 190. Special Studies (1-5) Individual study, 3-15 hours. Prerequisite(s): upper-division standing or consent of instructor. To be taken with the consent of the chair of the appropriate Engineering program as a means of meeting special curricular problems. Units in this course may not be used to meet requirements for the major unless so designated as a replacement for a requirement not being offered during the student’s remaining tenure. Course is repeatable to a maximum of 9 units.

ENGR 191S. Seminar in Sacramento (4) Seminar, 3 hours; outside research, 3 hours. Prerequisite(s): upper-division standing or consent of instructor;
admission to the UCR Center at Sacramento Program. Examines aspects of the Sacramento area, including cultural, political, and governmental institutions and the sciences, arts, and media. Requires a substantial research paper or project, the result of guided independent work drawing on the unique aspects of Sacramento. Required of participants in the UCR Center at Sacramento Program. Cross-listed with HASS 191S and NASC 191W.

ENG 191W. Seminar in Washington, D.C. (4) Seminar, 3 hours; outside research, 3 hours. Prerequisite(s): upper-division standing or consent of instructor; admission to the UCR Washington Center Program. Examines aspects of the Washington, D.C., area, including cultural, political, and governmental institutions as well as the sciences, arts, and media. Requires a substantial research paper or project, the result of guided independent work drawing on the unique aspects of Washington, D.C. Required of participants in the UCR Washington Center Program. Cross-listed with HASS 191S and NASC 191W.

ENG 198L. Individual Internship (1-12) Internship, 3-36 hours. Prerequisite(s): upper-division standing or consent of instructor; consent of off-campus supervisors and appropriate Engineering program chair. Designed to provide experience as a practicing engineer in a governmental, industrial, or research unit. Jointly supervised by an off-campus sponsor and an Engineering faculty member. Requires a written final report. Units may not be used to satisfy major requirements. Course is repeatable to a maximum of 16 units.

English

Subject abbreviations: BSWT and ENGL

College of Humanities, Arts, and Social Sciences

Katherine Kinney, Ph.D., Chair
Rise B. Axelrod, Ph.D., Director, English Composition
John C. Briggs, Ph.D., Director, Basic Writing
Jennifer Doyle, Ph.D., Director, Graduate Studies
Tiffany A. Lopez, Ph.D., Director, Graduate Admissions
George E. Haggerty, Ph.D., Director, Undergraduate Studies
Department Office, 1201 Humanities and Social Sciences, (951) 827-5301
Writing Resource Center, 1102 Humanities and Social Sciences, (951) 827-1384, english.ucr.edu

Professors

Rise B. Axelrod, Ph.D.
Steven G. Axelrod, Ph.D.
John C. Briggs, Ph.D.
Joseph W. Childers, Ph.D.
Adriana Craciun, Ph.D.
Kimberly J. Devlin, Ph.D.
Emmy B. Elliott, Ph.D., University Professor
Carole Fabricant, Ph.D.
John M. Ganim, Ph.D.
George E. Haggerty, Ph.D.
Stanley N. Stewart, Ph.D.

Professors Emeriti

Edwin M. Eigner, Ph.D.
Robert N. Essick, Ph.D.

Ralph Hanna, III, Ph.D.
Milton Miller, Ph.D.
John B. Vicker, Ph.D.

Associate Professors

Jennifer Doyle, Ph.D.
Heidi Brayman Hackel, Ph.D.
Keith Harris, Ph.D.
Katherine A. Kinney, Ph.D.
Robert Latham, Ph.D.
Tiffany A. Lopez, Ph.D.
Carole-Anne Tyler, Ph.D.
Deborah S. Willis, Ph.D.
Taise Yamamoto, Ph.D.
Susan Zieger, Ph.D.

Assistant Professors

Andrea Denny-Brown, Ph.D.
Erica A. Edwards, Ph.D.
Michelle Hermann Raheja, Ph.D.
Vorris Nuniy, Ph.D.
James Tobias, Ph.D.

The English Department offers the university community a range of composition courses that develop the skill of writing effective prose, a skill essential to undergraduate work and to communication in society generally. Students can also enjoy and profit from a broad range of literature courses offered by the department, including a number of lower-division courses designed especially with the non-English major in mind.

Major

The English major offers a well-balanced, thought-provoking program for students with a serious interest in the study of literature.

University Requirements

See Undergraduate Studies section.

College Requirements

See College of Humanities, Arts, and Social Sciences, Colleges and Programs section.

Major Requirements

The major requirements for the B.A. in English are as follows:

1. English 020A, ENGL 020B, and ENGL 020C (15 units). These courses are normally required of all English majors as a prerequisite to upper-division courses.

2. ENGL 102 (4 units). This course should normally be taken prior to or concurrently with the student’s first upper-division English course.

3. Four courses (16 units); one course from each of the following areas:
   a) English Literature to 1660: ENGL 117A, ENGL 117B, ENGL 117C, ENGL 128E, ENGL 128F, ENGL 128G, ENGL 129A, ENGL 148Q, ENGL 149, ENGL 151A, ENGL 151B, ENGL 151T, ENGL 152, ENGL 153, ENGL 154
   c) American Literature to 1900: ENGL 127A, ENGL 128A, ENGL 128B, ENGL 128Q, ENGL 130, ENGL 131, ENGL 132, ENGL 148G, ENGL 148W

4. One 4-unit course on literature and ethnicity, literature and gender, or literature and sexuality chosen from ENGL 121 (E-Z), ENGL 122 (E-Z), ENGL 123A, ENGL 123B, ENGL 124A, ENGL 124B, ENGL 136, ENGL 136T, ENGL 137T, ENGL 138A, ENGL 138B, ENGL 138T, ENGL 139, ENGL 139T, ENGL 143 (E-Z), ENGL 144 (E-Z), ENGL 144 (E-Z), ENGL 144 (E-Z)

5. One 4-unit course on literature and related fields, including theory, or a literary theme or genre chosen from ENGL 033/MCS 033, ENGL 100 (E-Z), ENGL 101, ENGL 104/MCS 104, ENGL 140 (E-Z), ENGL 141 (E-Z), ENGL 142 (E-Z), ENGL 143/MCS 143, ENGL 145 (E-Z), ENGL 146 (E-Z)

6. Five additional upper-division English courses (20 units). Only 4 units from ENGL 103 or any upper-division Creative Writing course will be accepted toward the fulfillment of this requirement. Four units of ENGL 190 may be counted toward this requirement. Proposals for ENGL 190 must be approved by a sponsoring faculty member and the department chair. If the student wishes to offer units from ENGL 190 as part of the 20 units, a copy of an approved petition will be placed in the student’s file.

Total units in major: 63 units, of which at least 15 units and no more than 20 units must be at the lower-division level.

Students are encouraged to take at least one of the following as a college breadth requirement or as an elective: CLA 027A, CLA 027B, CLA 040; CPLT 017A, CPLT 017B, CPLT 017C; ETST 114, ETST 120, ETST 124, ETST 138, ETST 170/WRLT 170, ETST 183; or any literature course in a language other than English. Students are also encouraged to take a course in British or American history, such as HIST 017A, HIST 017B, HIST 017C, HIST 101, HIST 101, HIST 151, HISE 151, HISE 152.

Each student is assigned a faculty advisor for help in shaping a program and following it through to graduation. Students must see their advisors on a regular basis, normally once per quarter prior to registration. Information about advisors is available in the department office from the undergraduate student affairs officer.