

## 254 / Programs and Courses

# Engineering

**Subject abbreviation: ENGR**  
**The Marlan and Rosemary Bourns**  
**College of Engineering**

Advising Office, A159 Bourns Hall  
 (951) 827-ENGR (3647);  
[www.engr.ucr.edu/studentaffairs](http://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 Marlan 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): freshman standing in the Bourns College of Engineering. Provides freshmen 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 juniors 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 001A or CHEM 01HA; CS 010; MATH 046; PHYS 040B; 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 01SC; 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 191S.

### ENGR 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, D.C., Center Program. Cross-listed with HASS 191W and NASC 191W.

### ENGR 198-I. 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**

Deborah Willis, 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  
 Heidi Brayman Hackel, Ph.D.,  
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### 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.  
 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.  
 John B. Vickery, Ph.D.