



UNDERGRADUATE EDUCATION

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5th Floor, Mrak Hall
530-752-6068

UC Davis offers the Bachelor of Arts (A.B.) and Bachelor of Science (B.S.) degrees in more than 100 major programs and many minors.

Undergraduate Education is governed by the Vice Provost and Dean for Undergraduate Education, and the Undergraduate Council, a standing committee of the Davis Division of the Academic Senate. The Vice Provost and Dean is also responsible for education-related programs including the Undergraduate Research Center, the Center for Leadership Learning, the University Honors Program, First Year Seminars, the Washington Program, Entry Level Writing, Summer Sessions, the Center for Educational Effectiveness, and International and Academic English.

Academic programs are offered by the four undergraduate colleges: the College of Agricultural and Environmental Sciences, the College of Biological Sciences, the College of Engineering, and the College of Letters and Science.

COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

Office of the Dean
150 Mrak Hall
530-752-0108; <http://www.caes.ucdavis.edu>

Major programs in the College of Agricultural and Environmental Sciences highlight the multiple connections among agricultural sciences, environmental sciences and human sciences within the larger context of the quality of life in the global economy. The majors fall into three broad areas of study described below. The College of Agricultural and Environmental Sciences also offers two college-wide degree programs and two college-wide non-degree programs.

The Undergraduate Programs

Agricultural Sciences

These majors prepare students in animal biology and the management of environmental resources as needed to develop sustainable animal production technologies. Also considered is the impact of production and management processes on animal health and welfare, human diet and health, and the natural environment.

The majors that focus on plant science provide a strong background in the context of agricultural and environmental systems and societal needs; ecological understanding of food and fiber production systems; biological and economic principles that underlie management decisions in agribusiness; and a basic background in all areas of plant biology, including plant development, plant protection, biotechnology and post-harvest physiology.

Majors:

- Agricultural and Environmental Education, B.S.
- Animal Biology, B.S.
- Animal Science, B.S.
- Animal Science and Management, B.S.
- Biotechnology, B.S.
- Entomology, B.S.
- Plant Sciences, B.S.
- Sustainable Agriculture and Food Systems, B.S.

- Sustainable Environmental Design, B.S.
- Viticulture and Enology, B.S.

Minors:

- Agricultural Pest Management
- Agricultural Systems & Environment
- Applied Computing and Information Systems (Plant Sciences)
- Animal Biology (Animal Science)
- Animal Genetics (Animal Science)
- Aquaculture (Animal Science)
- Avian Sciences
- Dairy/Livestock (Animal Science)
- Environmental Horticulture (Plant Sciences)
- Equine (Animal Science)
- Forensic Entomology
- Fungal Biology and Ecology (Plant Pathology)
- Insect Biology (Entomology)
- Insect Ecology and Evolution
- Landscape Restoration
- Medical-Veterinary Entomology (Entomology)
- Nematology
- Precision Agriculture (Biological and Agricultural Engineering)

Environmental Sciences

These majors focus on the broad facets of the human and natural environments and their interactions. They draw on the social, physical and biological sciences as needed to prepare students for leadership and advanced studies in the areas of natural resource management, environmental quality and stewardship, community planning and design, and public policy decision making.

Majors:

- Agricultural and Environmental Education, B.S.
- Atmospheric Science, B.S.
- Ecological Management and Restoration, B.S.
- Environmental Horticulture and Urban Forestry, B.S.
- Environmental Policy Analysis and Planning, B.S.
- Environmental Science and Management, B.S.
- Environmental Toxicology, B.S.
- Global Disease Biology, B.S.
- Hydrology, B.S.
- Landscape Architecture, B.S.
- Marine and Coastal Science, B.S.
- Sustainable Agriculture and Food Systems, B.S.
- Sustainable Environmental Design, B.S.
- Wildlife, Fish, and Conservation Biology, B.S.

Minors:

- Atmospheric Science (Land, Air, and Water Resources)
- Environmental Policy Analysis and Planning (Environmental Science and Policy)
- Environmental Toxicology
- Geographic Information Systems (Biological and Agricultural Engineering)
- Geographic Studies (Environmental Design)
- Global Disease Biology (Plant Pathology)
- Hydrology (Land, Air, and Water Resources)
- International Science Studies (Land, Air, and Water Resources)
- Landscape Restoration (Plant Sciences)
- Soil Science (Land, Air, and Water Resources)
- Watershed Science (Land, Air, and Water Resources)
- Wildlife, Fish, and Conservation Biology

Human Sciences

These majors foster a deeper understanding of the multiple connections between scientific and cultural issues in the context of human health and the quality of life. Basic physical and biological science, social science, design, and economic principles are taught in this context, linking food and fiber production to consumption, emerging knowledge to societal applications and policy, and human development to active, informed citizenship. Emphasis is on linking resources for humans with humans as resources. Physiological, social and aesthetic dimensions of the human experience are explored.

Majors:

- Agricultural and Environmental Education, B.S.
- Clinical Nutrition, B.S.
- Community and Regional Development, B.S.
- Fiber and Polymer Science, B.S.
- Food Science, B.S.
- Human Development, B.S.
- International Agricultural Development, B.S.
- Managerial Economics, B.S.
- Nutrition Science, B.S.
- Sustainable Agriculture and Food Systems, B.S.
- Sustainable Environmental Design, B.S.
- Textiles and Clothing, B.S.

Minors:

- Aging and Adult Development (Human and Community Development)
- Community Development (Human and Community Development)
- Community Nutrition (Nutrition)
- Fiber and Polymer Science (Textiles and Clothing)
- Food Service Management (Nutrition)
- Human Development (Human and Community Development)
- International Agricultural Development (Plant Sciences)
- Managerial Economics (Agricultural and Resource Economics)
- Nutrition and Food (Nutrition)
- Nutrition Science (Nutrition)
- Textiles and Clothing

College-wide Programs

The college-wide programs cut across all of the above areas, providing students in a variety of majors with a background in such areas as public policy, economic principles in a global context and the intersections among environmental, agricultural and socio-economic issues. College-wide programs also include non-degree, lower division curricula aimed at providing students with a foundational knowledge base and the potential for developing individualized programs.

Majors:

- Individual Major, B.S. (suspended)

Minors:

- Contemporary Leadership
- Science and Society

Non-degree programs:

- Undeclared/Exploratory
- Science and Society

COLLEGE OF BIOLOGICAL SCIENCES

Biology Academic Success Center
1023 Sciences Laboratory Building
530-752-0410; <http://basc.ucdavis.edu/>

The College of Biological Sciences administers undergraduate programs in fundamental aspects of biology. The college is organized into five departments that represent major themes of modern biology: Evolution and Ecology; Microbiology and Molecular Genetics; Molecular and Cellular Biology; Neurobiology, Physiology, and Behavior; and Plant Biology. A total of eight specialized majors are offered, each focusing on one of the core disciplines of biology. The Biological Sciences major, the Individual major, the Undeclared Life Sciences program and the Bodega Marine Laboratory Spring Quarter Program are offered by the entire college.

The academic advising for all majors within the college is administered through the Biology Academic Success Center (BASC). Students enrolled, or interested, in any of the college's majors may meet with an academic adviser at BASC to receive information on all major, college and university requirements, policies, and procedures, including PELP, withdrawal, readmission, change of major or college, multiple majors and late actions. Academic advisers work closely with master advisers, who are faculty members in the departments, to connect students to research opportunities in a variety of fields, and career development experiences in the community. Students are encouraged to meet with their academic advisers at least yearly, starting during their first two quarters of enrollment in the college.

The Undergraduate Programs

Biological Sciences

The Biological Sciences major is broad in concept, designed to span the numerous core disciplines of biology. The major covers most dimensions of the study of life, ranging from molecules and cells to populations of organisms.

Major:

- Biological Sciences, A.B., B.S.

Minor:

- Biological Sciences

Evolution and Ecology

The major in Evolution, Ecology and Biodiversity offers the student a broad background in the theoretical and empirical basis of our understanding of the evolution and ecology of living organisms. The program of study begins with a core of introductory courses in mathematics, physical sciences and biology. These are followed by survey courses in evolution and ecology and more specialized courses that focus the student on particular disciplines or organisms, with an emphasis on problem-solving and critical thinking.

Major:

- Evolution, Ecology and Biodiversity, A.B., B.S.

Minor:

- Evolution, Ecology and Biodiversity

Microbiology and Molecular Genetics

Microbiology deals with bacteria, yeasts and other fungi, algae, protozoa and viruses. These microorganisms are ubiquitous in nature and play a crucial role in areas such as agriculture, biotechnology, ecology, medicine and veterinary science. The field of microbiology contributes to areas of fundamental inquiry such as biochemistry, cell biology, evolution, genetics, molecular biology, pathogenesis and physiology.

Major:

- Microbiology, A.B., B.S.

Molecular and Cellular Biology

The Department of Molecular and Cellular Biology offers three majors.

The Biochemistry and Molecular Biology major introduces students to the chemistry of living organisms and the experimental techniques that are used to probe the structures and functions of biologically important molecules. Students who enjoy both chemistry and biology and who are comfortable with quantitative approaches to problem-solving will find this major a rewarding field of study.

The Cell Biology major provides a comprehensive understanding of the cell, the basic structural and functional unit of all living organisms. The major emphasizes the principles that govern how biomolecules interact with one another to organize themselves into higher order structures that comprise cells and how cellular organization and function contribute to the development, maintenance and reproduction of adult organisms.

The Genetics and Genomics major provides a broad background in the biological, mathematical and physical sciences basic to the study of heredity and evolution. The major provides a dual focus on the molecular mechanisms that regulate utilization of information encoded within the genome as well as the mechanisms and analysis of inheritance of genetic information. The major is sufficiently flexible to accommodate students interested in the subject either as a basic discipline in the biological sciences or in terms of its applied aspects in medicine, biotechnology and agriculture.

Majors:

- Biochemistry and Molecular Biology, B.S.
- Cell Biology, B.S.
- Genetics and Genomics, B.S.

Neurobiology, Physiology, and Behavior

The Neurobiology, Physiology, and Behavior major emphasizes the understanding of vital functions common to all animals. All animals perform certain basic functions—they grow, reproduce, move, respond to stimuli and maintain homeostasis. The physiological mechanisms upon which these functions depend are precisely regulated and highly integrated. Actions of the nervous and endocrine systems determine behavior and the interaction between organisms and their physical and social environments. Students in this major will study functional mechanisms; the control, regulation and integration of these mechanisms; and the behavior which relates to those mechanisms at the level of the cell, the organ system and the organism.

Majors:

- Neurobiology, Physiology, and Behavior, B.S.

Minors:

- Exercise Biology
- Human Physiology
- Neuroscience

Plant Biology

Plant Biology is the study of plants as organisms. It includes the newer disciplines of cellular and molecular plant biology and the traditional areas of botany, such as anatomy, morphology, systematics, physiology, mycology, phycology, ecology and evolution. The major provides breadth in diverse areas of plant biology and depth in one of several areas of specialization.

Major:

- Plant Biology, A.B., B.S.

Minor:

- Plant Biology

College-wide Programs

Quantitative Biology and Bioinformatics

The interdisciplinary minor in Quantitative Biology and Bioinformatics is an integrative program that introduces students to the quantitative and computational approaches that are redefining all disciplines in the biological sciences, from molecular and cell biology, through genetics and physiology, to ecology and evolutionary biology. The minor in Quantitative Biology and Bioinformatics is open to all undergraduates regardless of major and is sponsored by the College of Biological Sciences.

Minor:

- Quantitative Biology and Bioinformatics

Individual Major

Students whose academic interests are not met by any established major, or combinations of majors and minors may develop an Individual major. Students work in conjunction with the Committee on Undergraduate Petitions and a faculty member in the college.

Major:

- Individual Major, A.B., B.S.

Students who wish to explore the array of life science majors offered at UC Davis before declaring a major may be admitted to the college through the Undeclared-Life Sciences program. These students use the Biology Academic Success Center for their advising center. Students in this program must declare a major before completing 90 units.

Bodega Marine Laboratory Program

<http://bml.ucdavis.edu/>

Spring Quarter Program

A full quarter of undergraduate course work in marine biology is available each spring quarter at the Bodega Marine Laboratory, located in Bodega Bay, California. Course offerings include lecture

and laboratory instruction in the developmental biology and physiological adaptation of marine organisms, and population biology and ecology; a weekly colloquium; and an intensive individual research experience under the direction of laboratory faculty (Biological Sciences courses 120, 120P, 122, 122P, 123; Neurobiology, Physiology, and Behavior 141, 141P). This is a 15 unit program and course offerings and instructors may vary from year to year. Applications are due January 31. For more course detail, see [Bodega Marine Laboratory Program, on page 197](#) or <http://bml.ucdavis.edu/>.

Summer Sessions Courses

This integrated program offers students a multidisciplinary understanding of coastal ecosystems through intensive, hands on courses taught at Bodega Marine Laboratory. The program offers courses during the Summer Session 1 and Summer Session 2 academic quarters with up to 10 units available in each quarter. Applications are due March 15. For more course detail, see full description under appropriate academic department listing or <http://bml.ucdavis.edu/>.

Course offerings and instructors may vary from year to year.

BML programs are residential with students housed on the laboratory grounds. Participants are assessed a room and board fee in addition to standard campus registration fees. Additional information is available directly from the Bodega Marine Laboratory at 707-875-2211, P.O. Box 247, Bodega Bay, CA 94923.

COLLEGE OF ENGINEERING

Undergraduate Office
1050 Kemper Hall
530-752-1979; <http://engineering.ucdavis.edu>
Facebook: <http://www.facebook.com/UCDEngineering>

Engineering is the profession in which the physical and biological sciences are applied in a practical way for the benefit of society. As an engineering student, you will learn to observe and describe technological problems and to seek useful solutions to them. Your skills upon graduation will be useful to you not only as an engineer, but also as a professional in management, sales, operations, manufacturing and other fields.

Undergraduate Majors. Eleven undergraduate majors are offered. Each of these is a four-year program leading to the degree of Bachelor of Science.

The following programs are accredited by the Engineering Accreditation Commission of ABET; see <http://www.abet.org>:

- Aerospace Science and Engineering
- Biochemical Engineering
- Biomedical Engineering
- Biological Systems Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Materials Science and Engineering
- Mechanical Engineering

The Engineering Accreditation Commission and the Computing Accreditation Commission of ABET accredit the following program; see <http://www.abet.org>:

- Computer Science and Engineering

Minor Programs. The College of Engineering currently offers nine minor programs:

- Biomedical Engineering (Department of Biomedical Engineering)
- Construction Management and Engineering (Department of Civil and Environmental Engineering)
- Computational Biology (Department of Computer Science)
- Electrical Engineering (Department of Electrical and Computer Engineering)
- Energy Efficiency (Department of Biological and Agricultural Engineering)
- Energy Science and Technology (Department of Biological and Agricultural Engineering)
- Energy Policy (Department of Biological and Agricultural Engineering)
- Materials Science (Department of Chemical Engineering and Materials Science)
- Sustainability in the Built Environment (Department of Civil and Environmental Engineering)

In addition, the Department of Computer Science offers a minor in Computer Science.

The Undergraduate Programs

Biological and Agricultural Engineering

Biological Systems Engineering majors learn to combine the science and art of engineering with the science of biology to design systems that influence, control, or use biological materials and organisms for improving the quality of life. Specific objectives include designing systems to process biological materials into consumer products; designing machines to interact with biological systems in disciplines ranging from agriculture to medicine; managing, recycling and using wastes; developing systems to protect and preserve our natural resources and environment; developing and improving processing systems for food; designing equipment and systems that improve nutrition and diets; and minimizing waste discharge to the environment.

Major:

- Biological Systems Engineering, B.S.

Minors:

- Energy Science and Technology
- Energy Policy
- Energy Efficiency

Biomedical Engineering

The Department of Biomedical Engineering advances fundamental medical concepts; creates knowledge from the molecular to the organ systems levels; and develops innovative biologics, materials, processes, implants, devices and informatics approaches. These approaches are applied to the prevention, diagnosis and treatment of disease. The objective is to prepare students for employment in companies that manufacture medical assist devices, human tissue products and therapeutics. The program also prepares students to enter a graduate program in biomedical engineering or pursue professional degrees in medicine and related health fields.

Major:

- Biomedical Engineering, B.S.

Minor:

- Biomedical Engineering

Chemical Engineering

The Department of Chemical Engineering and Materials Science offers three majors.

Chemical Engineering majors learn to apply chemical and engineering principles to create useful products ranging from antibiotics to zirconium, from petroleum to plutonium, from agricultural chemicals to plastics. Specific objectives include the design of industrial processes as diverse as integrated circuit materials production, integrated waste management and petroleum refining.

Biochemical Engineering majors combine chemical engineering studies with studies in the life sciences and bioprocess engineering. Bioprocess engineering is the application of engineering principles to develop, optimize and commercialize manufacturing processes. Specific objectives include pharmaceuticals production, environmental repair, industrial chemical production and food production.

Majors:

- Biochemical Engineering, B.S.
- Chemical Engineering, B.S.

Civil and Environmental Engineering

Civil Engineering majors learn to apply the principles of the physical and biological sciences and engineering to plan and design systems to improve the quality of life. Specific objectives include providing potable water and freedom from disease-carrying wastes; protecting the natural environment; mitigating the effects of earthquakes and other natural disasters; designing land-, water- and air-transportation systems; and building roads and structures.

Major:

- Civil Engineering, B.S.

Minors:

- Construction Engineering and Management
- Sustainability in the Built Environment

Computer Science and Engineering

The field of computer science and engineering encompasses the organization, design, analysis, theory, programming and application of digital computers and computing systems. The curriculum develops versatile engineers with backgrounds spanning a broad computer/software spectrum. The Computer Science and Engineering major provides a solid background in mathematics, physics, chemistry and electronic circuits and systems—all supporting the computer hardware and software courses that form the focus of the curriculum. A key theme is the hardware/software interaction in computer system design; this theme is reflected in the balance between hardware and software course requirements and in the orientation of the courses themselves.

Major:

- Computer Science and Engineering, B.S.

Minor:

- Computational Biology

Electrical and Computer Engineering

Electrical Engineering majors learn to apply the principles of the physical sciences and engineering to the design, analysis, development, production and evaluation of electronic systems. Specific objectives include the provision of systems for communications, control, signal processing, integrated circuit fabrication, optoelectronics, consumer electronics and digital systems.

Computer Engineering majors study the design, development, analysis, organization, theory, programming and application of digital computers. Specific objectives include developing the student's ability to design both software and hardware. In comparison to the Computer Science and Engineering major, the Computer Engineering major provides greater emphasis on hardware in the key hardware/software interaction in computer system design.

Majors:

- Computer Engineering, B.S.
- Electrical Engineering, B.S.

Minor:

- Electrical Engineering

Materials Science and Engineering

The Department of Materials Science and Engineering offers one major.

Materials Science and Engineering majors learn to understand the relationships among microscopic structure, properties and behavior of materials in order to produce new and improved materials with capabilities far superior to common metals, alloys and ceramics. Specific objectives include the development of materials for high-speed transportation systems, surgical and dental implants, new generations of power plants and solid-state electronic devices in computer and optical communications technology.

Major:

- Materials Science and Engineering, B.S.

Minor:

- Materials Science

Mechanical and Aerospace Science Engineering

Aerospace Science and Engineering majors learn to apply the principles of the physical sciences and engineering to vehicles whose motion is determined by aerodynamic forces. Specific objectives include the design, development and manufacture of aircraft and other transportation systems integrating the disciplines associated with aerodynamics, propulsion, structures and guidance/control.

Mechanical Engineering majors learn to apply physical and mechanical principles to the design and manufacture of machines and products, energy conversion systems and equipment for guidance and control. Specific objectives include the provision of products and processes for intelligent manufacturing systems, biomechanical and sports equipment, power generation systems, propulsion for transportation, integration of vehicles and automated highways, and applications of computer and automation technologies.

Majors:

- Aerospace Science and Engineering, B.S.
- Mechanical Engineering, B.S.

COLLEGE OF LETTERS AND SCIENCE

Office of Undergraduate Education
and Advising
Room 200, Social Sciences
and Humanities Building
530-752-0392; <http://www.ls.ucdavis.edu/advising/>

Major programs in the College of Letters and Science provide students systematic exposure to the key principles, methods, findings and representations of a selected area of study. In pursuing a major, students gain intellectual depth and competency in that subject matter, explore important linkages with collateral fields of inquiry and are encouraged to engage in independent study.

The academic programs offered through the college are grouped in three divisions: Humanities, Arts and Cultural Studies; Mathematical and Physical Sciences; and Social Sciences. One college-wide degree program, the individual major, also is available.

The Undergraduate Programs

Division of Humanities, Arts and Cultural Studies

These majors focus centrally on the artifacts, expressions and concerns of humankind in various cultures and times. They provide students the opportunity to explore the creation, performance and analysis of works of art, the language and customs of non-English speaking societies, the theory and criticism of literature, and the peoples and cultures of this nation and its hemisphere. Students interested in studying these types of issues may select from more than 25 different majors.

Majors:

- African American and African Studies, A.B.
- American Studies, A.B.
- Art History, A.B.
- Art Studio, A.B.
- Asian American Studies, A.B.
- Chicana/Chicano Studies, A.B.
- Chinese, A.B.
- Cinema and Digital Media, A.B.
- Classical Civilization, A.B.
- Comparative Literature, A.B.
- Design, A.B.
- English, A.B.
- French, A.B.
- Gender, Sexuality and Women's Studies, A.B.
- German, A.B.
- Italian, A.B.
- Japanese, A.B.
- Medieval and Early Modern Studies, A.B.
- Music, A.B.
- Native American Studies, A.B.
- Religious Studies, A.B.
- Russian, A.B.
- Spanish, A.B.
- Theatre and Dance, A.B.
- Women's Studies, A.B.

Minors:

- African American and African Studies
- American Studies
- Art History
- Art Studio
- Asian American Studies

- Chicana/Chicano Studies
- Chinese
- Classical Civilization
- Comparative Literature
- Dramatic Art
- English
- Film Studies
- French
- Gender, Sexuality and Women's Studies
- German
- Global and International Studies
- Greek
- Human Rights
- Italian
- Japanese
- Latin
- Luso-Brazilian Studies
- Medieval and Early Modern Studies
- Music
- Native American Studies
- Professional Writing
- Religious Studies
- Russian
- Sexuality Studies
- Social and Ethnic Relations
- Spanish

Division of Mathematical and Physical Sciences

These majors focus primarily on the description and interpretation of the structure, processes and events of the physical universe. They provide students the opportunity to explore in depth the structure, properties and reactions of substances; fundamental mathematical techniques and models and their application to the interpretation and explanation of phenomena; studies of matter and energy and their interconversions; the nature and development of computer languages; and earth and environmental processes. Students interested in studying these types of subjects may select from twelve different majors. The division strongly encourages undergraduates to enroll in undergraduate research projects with one-on-one instruction by faculty scholar/researchers.

Majors:

- Applied Mathematics, B.S.
- Applied Physics, B.S.
- Chemical Physics, B.S.
- Chemistry, A.B., B.S.
- Computer Science, B.S.
- Geology, A.B., B.S.
- Marine and Coastal Science, B.S.
- Mathematical and Scientific Computation, B.S.
- Mathematical Analytics and Operations Research, B.S.
- Mathematics, A.B., B.S.
- Natural Sciences, B.S.
- Pharmaceutical Chemistry, B.S.
- Physics, A.B., B.S.
- Statistics, A.B., B.S.

Minors:

- Chemistry
- Computer Science
- Environmental Geology
- Geology
- Geophysics

- Mathematics
- Oceanography
- Physics
- Statistics

Division of Social Sciences

These majors focus largely on issues and problems that characterize social, cultural, political and economic life across human societies. They provide students the opportunity to explore the relationships between people and the groups and organizations of which they are a part, the antecedents of individual behavior, the development of political and economic systems, the social forces that have shaped the contemporary world and the foundations of language, thought, knowledge and perception. Students interested in studying these types of issues may select from 15 dozen different majors.

Majors:

- Anthropology, A.B., B.S.
- Cognitive Science, A.B, B.S.
- Communication, A.B.
- East Asian Studies, A.B.
- Economics, A.B.
- History, A.B.
- International Relations, A.B.
- Linguistics, A.B.
- Middle East/South Asia Studies, A.B.
- Philosophy, A.B.
- Political Science, A.B.
- Political Science–Public Service, A.B.
- Psychology, A.B., B.S.
- Science and Technology Studies, A.B.
- Sociology, A.B.
- Sociology–Organizational Studies, A.B.

Minors:

- Anthropology
- Arab Studies
- Coaching Principles and Methods
- Communication
- East Asian Studies
- Economics
- History
- History and Philosophy of Science

- India and South Asia Studies
- Iran and Persian Studies
- Jewish Studies
- Latin American and Hemispheric Studies
- Linguistics
- Linguistics for Language Teachers
- Middle East/South Asia Studies
- Philosophy
- Political Science
- Psychology
- Sociology
- War-Peace Studies

College-wide Program

Students whose academic interests cannot be satisfactorily met through the completion of an established major have the opportunity to develop an individual major. Individual majors may reflect the most recent trends in scholarship and research and are typically interdisciplinary in nature. The major proposal is developed in close and active consultation with two faculty advisers from the academic disciplines most closely related to the subject matter of the individual major. Careful faculty guidance and review assure that individual majors are comparable in academic rigor and intellectual coherence to those regularly available through the departments and programs of the college.

Major:

Individual Major, A.B., B.S.

BACHELOR'S DEGREE REQUIREMENTS

You must satisfy four groups of requirements before you can become eligible for candidacy for the bachelor's degree; see [Bachelor's Degree Requirements](#), below. The four groups are:

- University requirements, which apply to all colleges;
- General Education requirements, which apply to all colleges;
- College requirements; and
- Major requirements.

You are responsible for seeing that all of your degree requirements are fulfilled.

Detailed information on university requirements, the General Education requirement and college requirements can be found in this chapter.

Bachelor's Degree Requirements

University Requirements

All students must fulfill the following University of California requirements:
 Entry Level Writing Requirement
 American History and Institutions Requirement
 Unit Requirement
 Residence Requirement
 Scholarship Requirement

General Education Requirement

All students must fulfill the campus General Education Requirement; see [General Education Requirement, on page 107](#).

College Requirements

College of Agricultural & Environmental Sciences	College of Biological Sciences	College of Engineering	College of Letters and Science
Unit	Unit	Unit	Unit
Residence	Scholarship	Residence	Residence
Scholarship	English Composition	Scholarship	Scholarship
English Composition	Foreign Language (only A.B. & B.A.S. degrees)	English Composition	English Composition
	Breadth (only A.B. & B.A.S. degrees)	Current Catalog Curriculum	Area (Breadth)
			Foreign Language (A.B. & B.A.S. degrees)

Major Requirements

Course requirements for each major are listed in the [Programs and Courses](#) section of this catalog.

UNIVERSITY REQUIREMENTS

All students must fulfill the following University of California requirements.

Entry Level Writing Requirement

The university requires every undergraduate student to demonstrate college-level proficiency in English composition by satisfying the Entry Level Writing Requirement (ELWR). Satisfaction of the ELWR is a prerequisite to all other undergraduate courses in English.

Students can meet this requirement by scoring:

- 680 or better on the College Board SAT Reasoning Test, Writing section (last administration January 2016); or
- 3 or above on either Advanced Placement Examination in English; or
- 30 or better on the ACT, English Language Arts; or
- 30 or better on the ACT, Combined English/Writing (last administered June 2015); or
- 5 or above on an International Baccalaureate Higher Level English A: Literature exam (formerly known as Higher Level English A1 exam); or
- 6 or above on the International Baccalaureate Standard Level English A: Literature exam (formerly known as Standard Level English A1 exam); or
- 5 or above on an International Baccalaureate Higher Level English A: Language and Literature exam; or
- 6 or above on an International Baccalaureate Standard Level English A: Language and Literature exam.

Students can also meet the requirement by earning a grade of C or higher in an acceptable 3 semester-unit or 4 quarter-unit college-level course in English composition.

All incoming California students who have not met the Entry Level Writing Requirement by April 1 must take the UC Analytical Writing Placement Examination (AWPE). The exam is administered the morning of the second Saturday in May, at testing centers throughout the state. Out-of-state U.S. students and California freshmen admitted after mid-April will take another form of the Analytical Writing Placement Examination on campus at the beginning of Fall quarter. For the time and location, see <http://entrylevelwriting.ucdavis.edu/examination-schedule/analytical-writing-placement-examination>.

The AWPE may be taken only once. Students who have not satisfied the requirement in one of the ways described above and who were not held for ESL coursework in the University Writing Program (see below) *must enroll in Workload 57 during their first quarter of residence at the university, or as soon thereafter as space is available in the course*. Workload 57, offered by Sacramento City College on the UC Davis campus, counts as 4.5 units on the study list and toward minimum progress but carries no units toward graduation. To satisfy the requirement, students must earn a course grade of C or higher; students who receive a grade lower than C must repeat Workload 57. Students who do not satisfy the Entry Level Writing Requirement by the end of the third quarter will be disenrolled from the University.

New students whose native or school language is not English (including some California residents who previously took the AWPE), and some students whose schooling combines work in the United States and in another country, will take the English Language Placement Exam (ELPE) to determine which UWP ESL course(s), if any, are needed prior to enrollment in Workload 57 and fulfillment of the Entry Level Writing Requirement. The English Language Placement Exam, which may be taken only

once, will be delivered via SmartSite and taken remotely during one of several testing periods during the summer before the first quarter. Students whose ELPE results require them to take one or more UWP ESL courses will have the standard three quarters to meet the Entry Level Writing Requirement *plus* the number of quarters they are held for UWP ESL coursework. The ELWR time line begins with the first quarter of enrollment at UC Davis and continues each quarter. Students who do not satisfy the ELWR within the time limit will be disenrolled from the University.

American History and Institutions

The American History and Institutions requirement ensures that every graduating student will have at least a minimum knowledge of the background of this country's development and an understanding of the political, economic and social interrelationships of its way of life.

You may meet this requirement in any of these ways:

- Complete one high school unit in American history, or 1/2 high school unit in American history and 1/2 high school unit in civics or American government, with a grade of C or better in each course
- Complete any one of the following courses:
 - African American and African Studies 10, 100
 - Asian American Studies 1, 2
 - Chicana/Chicano Studies 10
 - Economics 111A, 111B
 - History 17A, 17B, 72A, 72B, 170A, 170B, 170C, 171A, 171B, 174A, 174B, 174C, 176A, 176B, 177A, 177B, 179, 180A, 180B, 183A, 183B (upper division courses may be taken only with the consent of the instructor)
 - Native American Studies 1, 10, 116, 130A, 130B, 130C
 - Political Science 1, 5, 100, 102, 104, 105, 106, 108, 109, 113, 130, 131, 160, 163

Students electing to complete one of the above courses in order to meet this requirement are subject to the rules for prerequisites and majors

- Present evidence that the requirement has been accepted as satisfied at another campus of the university
- Present evidence that the requirement has been satisfied through courses in the area of American History and Institutions at another collegiate institution whose credits are acceptable for transfer to UC Davis
- Successful completion of the Advanced Placement (AP) Examination in American History or American Government and Politics with a score of 3 or higher
- Successful completion of the International Baccalaureate (IB) Examination in History of the Americas Higher Level (HL) with a score of 5, 6, or 7
- Successful completion of the SAT Subject Examination in U.S. History with a score of 550 or higher

International students, regardless of the type of visa they hold, must meet the university's American History and Institutions requirement for graduation.

Unit Requirements

A minimum of 180 quarter units is required for graduation. These must be distributed according to the minimum requirements set forth by the faculty of your college.

A maximum of 15 units of Internship Courses (92, 192, or a combination) may be counted toward the 180-unit bachelor's degree requirement.

The acceptability of transfer courses for unit credit is determined by Undergraduate Admissions. The acceptability of such courses toward specific requirements is determined by the individual college or school.

Students should refer to the Advanced Placement Examination chart and their transcripts to eliminate the possibility of duplication of credit.

Residence Requirements

The minimum residence requirement for a bachelor's degree at the University of California is one academic year (three quarters). Thirty-five of the final 45 quarter units completed by each candidate must be earned while in residence on the UC Davis campus. Each summer session in which a student completes a course of at least 2 quarter units may be counted as half a quarter's residence.

Regularly approved courses (laboratory, field, or other individual work) done outside of a regular session but under the direction of a department of instruction may be accepted upon the recommendation of the department in partial fulfillment of the residence requirement for the bachelor's degree. Registration is with the consent of the instructor only.

UC Davis Extension courses are not accepted as part of the university residence requirement.

There are additional residence requirements for students enrolled in the Colleges of Letters and Science and Engineering. If you are planning to study abroad during your senior year, you should consult your college dean's office or the Biology Academic Success Center.

With the approval of the dean of a student's college or school, a candidate for the bachelor's degree who was in active service in the armed forces of the United States in the year preceding the awarding of the degree may be recommended for the degree after only one quarter of university residence in which the candidate completes at least 16 units or passes a comprehensive examination in the major or field of concentration.

Scholarship Requirement

To receive a bachelor's degree, you must obtain twice as many grade points as units (a 2.000 GPA) for all courses you have attempted in the university. For specific college requirements consult the college sections following.

GENERAL EDUCATION REQUIREMENT

The General Education (GE) requirement promotes the intellectual growth of all undergraduates by ensuring that they acquire a breadth of knowledge that will enlarge their perspectives beyond the focus of a major and serve them well as participants in a knowledge-based society. It seeks to stimulate continued growth by providing knowledge of both the content and the methodolo-

gies of different academic disciplines. It involves students in the learning process by its expectation of considerable writing and class participation, and encourages students to consider the relationships between disciplines.

General Education (GE) Requirement—Fall 2011 and On

The following section pertains to students who matriculated to UC Davis for the first time in Fall 2011 or later. Students who matriculated prior to Fall 2011 should refer to the [Former General Education \(GE\) Requirement—Pre-Fall 2011, on page 109](#).

The GE requirement has two components, **Topical Breadth** and **Core Literacies**, and is defined in terms of units, not courses.

Topical Breadth Component 52 units

A GE course in topical breadth addresses broad subject areas that are important to the student's general knowledge. The units of most undergraduate courses at UC Davis are assigned to one of the three Topical Breadth Areas.

Note: In the case of a course that has been certified in more than one Topical Breadth Area, a student may count the units of the course in only one of the areas in which it has been certified.

- **Arts and Humanities** 12-20 units
Courses in this area provide students with knowledge of significant intellectual traditions, cultural achievements and historical processes.
- **Science and Engineering** 12-20 units
Courses in this area provide students with knowledge of major scientific ideas and applications. They seek to communicate the scope, power, limitations and appeal of science.
- **Social Sciences** 12-20 units
Courses in this area provide students with knowledge of the individual, social, political and economic activities of people.

Core Literacies Component 35 units

The literacies are crucial both for success in one's profession and also for a thoughtful engaged citizenship in the community, nation and world.

Note: In the case of a course that has been certified in more than one Core Literacy Area, a student may count the units of the course in only one of the core literacy areas in which it has been certified. Additionally, GE credit for a core literacy course a student completes before it was an approved GE literacy course is subject to the relevant dean's office or the Biology Academic Success Center approval.

1. Literacy with Words and Images at least 20 units

The objective of this core literacy is to help students communicate their ideas effectively in written, oral and visual forms. The requirement also seeks to enhance students' critical judgment of oral, written, and visual messages created by others.

Note: A student must have completed the Entry Level Writing Requirement (formerly known as the Subject A requirement) before receiving General Education credit for coursework satisfying requirements a, b, and Writing Experience coursework satisfying requirement c, below.

a. English Composition 8 units
(as described by College of A&ES, College of L&S, College of Biological Sciences, or College of Engineering)

b. Writing Experience coursework in the student's major or in other departments at least 6 units

Courses in writing experience provide students instruction on how to communicate ideas in the subject matter of the course. The opportunity to improve writing after having received careful commentary is crucial to this requirement.

c. Oral Skills coursework or additional writing experience coursework at least 3 units

Courses in oral literacy involve effective communication of ideas through oral presentation and build on and strengthen the critical thinking skills exercised through writing. As an alternative to developing oral communication skills, the student may take additional coursework certified as writing experience (see requirement b, above).

d. Visual Literacy coursework at least 3 units

Courses in visual literacy provide students with the analytical skills they need to understand how still and moving images, art and architecture, illustrations accompanying written text, graphs and charts, and other visual embodiments of ideas inform and persuade people. Coursework may stress the skills needed to communicate through visual means as well as the analytical skills needed to be a thoughtful consumer of visual messages.

2. Civic and Cultural Literacy at least 9 units

The objective of this core literacy is to prepare students for thoughtful, active participation in civic society. Students will learn to think analytically about American institutions and social relations, understand the diversity of American cultures, and see the relationships between national and local cultures and the world.

a. American Cultures, Governance, and History at least 6 units;
of which at least 3 units must be in coursework certified as focusing on issues of domestic diversity.

Courses in American Cultures, Governance, and History provide students with an understanding and appreciation of the social and cultural diversity of the United States and of the relationships between these diverse cultures and larger patterns of national history and institutions.

b. World Cultures at least 3 units

Courses in World Cultures provide students with a global perspective in a world where communication technologies, economic relationships, and the flow of people across national borders increasingly challenge national identities and create transnational cultures. Students can satisfy this requirement through coursework or through certified study abroad.

3. Quantitative Literacy at least 3 units

The objective of this core literacy is to provide students with an understanding of quantitative reasoning and skills for eval-

uating claims and knowledge generated through quantitative methods.

4. Scientific Literacy at least 3 units

The objective of this core literacy is to provide students with an understanding of the fundamental ways scientists approach problems and generate new knowledge, and an understanding of how scientific findings relate to other disciplines and to public policy.

Additional Conditions

Meeting Total Units Requirement. With the exception of units used to satisfy the English Composition element, units approved for a Core Literacy will be accepted toward satisfaction of the appropriate Topical Breadth component. Course units that satisfy requirements in the candidate's major or majors may also be counted toward satisfaction of General Education requirements.

Grading. Students may take courses P/NP to fulfill their General Education requirements, up to the limits set by college and campus regulations.

Advanced Placement and International Baccalaureate. Students may not present Advanced Placement or International Baccalaureate credit in satisfaction of GE requirements, except insofar as it may be applied to the English Composition component of the Literacy with Words and Images requirement.

Transfer Students who have successfully completed the Intersegmental General Education Transfer Curriculum (IGETC) lower division course work are exempt from all General Education requirements that may be met with lower-division courses. Transfer students who have not completed the IGETC, and who are not entitled to graduate under the provisions of a *General Catalog* issued prior to Fall 2011 as permitted by the applicable college policy on degree requirement changes, are required to satisfy all General Education components under the revised requirement but may offer previously completed coursework toward their satisfaction.

Approved Revised General Education Courses

See New General Education Courses; Fall 2011 and On, on page 592, for a list of the courses that provide General Education credit. Please note that you cannot claim GE credit for a course you completed before it was an approved GE course.

Former General Education (GE) Requirement—Pre-Fall 2011

The following section pertains to students who matriculated to UC Davis prior to Fall 2011. Students who matriculated for the first time in Fall 2011 or later should refer to the [General Education \(GE\) Requirement—Fall 2011 and On](#), on page 108.

The GE requirement has three components: **Topical Breadth**, **Social-Cultural Diversity** and **Writing Experience**.

Topical Breadth Component **6 courses**

Topical breadth courses are grouped into three broad subject areas of knowledge:

- 1. Arts and Humanities.** Courses in this area provide students with knowledge of significant intellectual traditions, cultural achievements and historical processes.
- 2. Science and Engineering.** Courses in this area provide students with knowledge of major scientific ideas and applications. They seek to communicate the scope, power, limitations and appeal of science.
- 3. Social Sciences.** Courses in this area provide students with knowledge of the individual, social, political and economic activities of people.

To fulfill the topical breadth component of the General Education requirement you must successfully complete three approved courses in each of the two subject areas of topical breadth other than the one that includes your major. To identify the area of topical breadth to which your major belongs, see [Topical Breadth Assigned Subject Areas for Majors and Minors; Pre-Fall 2011](#), on page 631. Each academic major has been assigned to one of the three subject areas of GE topical breadth. If you have any questions concerning the subject area to which your major is assigned, consult the relevant dean's office or the Biology Academic Success Center.

A course approved in more than one topical breadth subject area may only be offered in satisfaction of only one of those subject areas.

- **Double majors** will satisfy the topical breadth subject areas to which they are assigned. You will still be responsible for completing any topical breadth subject area in which you do not have a major. If, for example, two majors are assigned to the same subject area, you will need to complete the topical breadth component in each of the other two other subject areas. If, on the other hand, you complete two majors that have been assigned to two different areas of topical breadth then you will be responsible for completing the topical breadth component in only the remaining subject area.
- **Individual majors** are assigned to an area of topical breadth at the time they are approved by your college.
- **Each minor** has also been assigned to one of the three subject areas of topical breadth. A minor assigned to a subject area other than the area of your major will satisfy the GE course requirement for topical breadth in that subject area.
- **Courses in your major** may count toward the topical breadth component when those courses are also assigned to subject areas other than the area of your major.

Social-Cultural Diversity **1 course**

Courses in social-cultural diversity teach students the significance of the many patterned differences that characterize human populations—particularly differences of gender, race, ethnicity, sexuality, religion or social class.

To fulfill the social-cultural diversity component of the GE requirement, you must successfully complete one course from the approved list; see [Former General Education Courses; Pre-Fall 2011](#), on page 616.

Writing Experience **3 courses**

Courses in writing experience improve student writing through instruction and practice. Writing assignments are designed to encourage students to think critically and communicate effectively. Courses require one extended writing assignment (five

pages or more) or multiple short assignments. Writing is evaluated not only for content, but also for organization, style, use of language, and logical coherence.

To fulfill the writing experience component of the GE requirement, you must successfully complete three courses from the approved list at the back of this catalog.

Note: You must satisfy the university Entry Level Writing Requirement (formerly Subject A) before you take any writing experience course for GE credit. If you take an approved writing experience course, but have not yet satisfied the Entry Level Writing Requirement, you will not receive GE writing experience credit for that course.

Additional Conditions

Letter Grading. All courses taken to fulfill the GE requirement must be taken for a letter grade. No GE credit will be awarded for a course that you take on a Passed/Not Passed basis.

College and University Composition Requirements. The following GE courses may not be used to satisfy university or college requirements in composition and GE writing experience simultaneously:

- Communication 1
- Comparative Literature 1, 2, 3, 4
- English 3
- Native American Studies 5
- University Writing Program 1, 18, 19, 101, 102 series, and 104 series

Courses Approved for Multiple GE Components. Courses approved for more than one component of the GE requirement (topical breadth, writing experience and social-cultural diversity) will be accepted toward satisfaction of all components for which the course has been approved.

College of Engineering. Beginning in Fall 2011, the General Education requirement changed. The new General Education requirement applies to freshmen admitted Fall 2011 or later. However, students admitted before Fall 2011 may follow the previous General Education requirement. To ensure accurate information about satisfying General Education, all students should schedule an appointment with their Engineering Departmental Adviser or speak with an adviser in the Undergraduate Advising office in 1050 Kemper Hall.

Transfer Student Exemption for IGETC, TCC and UC Reciprocity. You are exempt from the UC Davis GE requirement if you come from a California community college and are certified as having successfully completed the “Intersegmental General Education Transfer Curriculum” (IGETC) or “Transfer Core Curriculum” (TCC), or if you come from another UC campus and are certified as having successfully completed the lower division breadth or General Education requirements of that UC campus (UC reciprocity).

If you are a Transfer student who has not completed TCC or IGETC prior to attending UC Davis, transfer work comparable to approved UC Davis GE courses may be used to satisfy the GE requirement, as determined by the college's dean's office or the Biology Academic Success Center.

Approved Former General Education Courses

See [Former General Education Courses; Pre-Fall 2011](#), on page 616, for a list of the courses that provide General Education credit. Please note that you cannot claim GE credit for a course you completed before it was an approved GE course.

General Education Theme Options

The following section pertains to students who matriculated to UC Davis prior to Fall 2011.

General Education theme options are sets of GE courses sharing a common intellectual theme. Faculty from the College of Agricultural and Environmental Sciences has worked collaboratively to develop sets of complementary courses in several areas of interest. These GE theme options are not a separate element of the GE requirement, but a way of selecting your GE courses so that you may benefit from a coherent focus of study while completing the GE requirement.

Completion of a theme satisfies the GE requirement for students with majors assigned to the GE topical breadth area of Arts and Humanities. Students with majors assigned to the topical breadth area of either Science and Engineering or Social Science will need to complete additional GE courses in Arts and Humanities to satisfy the campus GE requirement.

Beginning a theme option does not prevent you from later choosing to take other approved GE courses to fulfill the GE requirement. If you choose to mix courses from a theme option and the broader GE course lists, you will need to make sure that the combination of courses you select will complete the campus GE requirement.

COLLEGE REQUIREMENTS FOR THE BACHELOR'S DEGREE

College of Agricultural and Environmental Sciences

Unit Requirements

Of the required 180 units counted toward a degree, 54 units must be upper division work.

Unit Credit Limitations

In addition, the following unit limitations apply to all majors:

- Not more than 6 units can be Physical Education 1 and 6
- Not more than 20 units can be courses numbered 90X, 92, 97T, 97TC, 99, 190C, 190X, 192, 197T, 197TC, or 199
- Not more than 12 units can be courses numbered 92 and/or 192 (credit will not be given for 192s or 199s taken before the completion of 84 units)
- Not more than 5 units per quarter of Special Study courses (99, 194H, 199)
- Not more than 9 units of professional courses (numbers 300–499) may be used toward the 54 upper division units

Limitation on Credit for Units Graded P. The Academic Senate limits the total number of courses graded P, including units earned in courses graded “P/NP only,” to one third of the units completed on the UC Davis campus. The P/NP option is to be used only for elective courses and should not be used for major requirements.

Credit for Open Campus (Concurrent) Courses. Students may apply credit for courses taken in the Open Campus (Concurrent) Program through UC Davis Extension towards the 180-unit undergraduate degree requirement. The grade points earned when enrolled in Open Campus courses will count toward the calculation of a student's UC GPA upon his/her admission or readmission to regular student status at UC Davis. Students registered at UC Davis may not enroll in Open Campus courses.

Credit for UC Davis Extension Courses. Registered UC Davis students who plan to use academic credit earned in a UC Davis Extension course other than Open Campus (Concurrent) towards their UC Davis degree must obtain prior written approval from their College before registering in the UC Davis Extension. Upon approval students may apply a limited number of credits towards the 180-unit undergraduate degree requirements. Courses completed in UC Davis Extension will not count toward the calculation of a student's UC GPA.

Registration Beyond the 225-Unit Limit. Students may not exceed 225 units; registration for enrollment when the limit has been reached may only be approved by the Dean. A petition to complete excess units may be picked up in the Dean's office or in your major department.

Residence Requirement

Meet university residence requirement. No additional college residence requirements.

Scholarship Requirement

Students in the College are required to attain a minimum grade point average of 2.000 for all courses specified as depth subject matter in their major. Options, specializations and emphases may be included. Consult your master adviser. Only grades earned in courses taken at UC Davis are included in the grade point calculation. Each candidate must complete a program of study either as prescribed in (a) a major approved by the Undergraduate Majors and Courses Standing committee and printed in this catalog, or (b) an individual major approved by the Individual Major Standing committee.

English Composition Requirement

Once the Entry-Level Writing requirement has been satisfied, you may begin taking courses to meet the College's English composition requirement.

The English Composition requirement may be met in one of three ways:

1. Either two courses emphasizing written expression or one course emphasizing written expression and one course emphasizing oral expression, with a grade of C- (or P) or better. The following UC Davis courses satisfy this requirement:

(a) one course must be selected from English 3, University Writing Program 1, 18, 19, 101, 102 series, 104 series or Nematology 150 (courses with primary emphasis in writing skills);

(b) one course selected from the courses not selected above, or from Communication 1, Comparative Literature 1, 2, 3, 4, or Native American Studies 5 (courses emphasizing either writing or speaking skills);

2. Advanced Placement English score of 4 or 5 PLUS any course listed in 1(a) or 1(b) above EXCEPT University Writing Program 1 or English 3

OR

3. By passing the English Composition Examination administered by the College of Letters and Science upon completion of 70 units of degree credit (the examination does not yield credit).

English Composition Examination. The no-fee, no-unit examination is typically offered on a Saturday in October, January and April; for specific dates, see <http://writing.ucdavis.edu/compexam/>.

If students choose to take this challenge exam, they are strongly advised to do so in their junior year. Register for the English Composition Examination at <http://writing.ucdavis.edu/compexam/> from the Monday before the exam date until Friday at noon or until no spaces remain. The AWPE/Upper-Division Composition Examination form, available at the UC Davis Bookstore, is required. It is recommended that students with disabilities contact the Student Disability Center at 530-752-3184 and the University Writing Program at 530-752-0450 at least two weeks prior to the exam date to arrange accommodations. No examinations are given during the summer.

General Education

You should consult your Dean's Office or department adviser in advance to determine exactly how your General Education courses will apply toward your major.

You can choose one of four General Education theme options to help plan your GE courses. The themes, Global Population and Environmental Issues; Biodiversity and Cultural Diversity; Food and Fiber; and Changing Agriculture are described in more detail in [General Education Theme Options, on page 632](#).

Study Plan Approval

A Study Plan provides for attainment of specific long-term goals and should allow for the acquisition of prerequisite knowledge for courses to be taken in subsequent quarters; the fulfillment of College and major requirements; a proper balance between the demands of the courses and your ability to master the subject matter; and meeting the minimum progress requirements; see [Course Load, on page 85](#).

In conjunction with a faculty adviser and/or staff adviser, you must plan and prepare a program that specifies your goals and shows how the graduation requirements will be met. It is a regulation that a written “study plan” be filed with your faculty adviser or staff adviser by the end of the second quarter of the junior year (having completed not more than 120 units either in residence and/or by transfer).

You may be denied registration for future quarters if you do not comply with this regulation. However, filing this study plan does not preclude a change of major or program modifications.

Major Degree Certification

A Major Certification is completed during the quarter you plan to graduate. At that time, you and your faculty adviser and/or staff adviser check to see that all *major requirements have been completed*. The Dean's Office completes the degree certification by verifying that all *college and university requirements have been satisfied*.

Degree Requirement Changes

On occasion, the faculty make changes in the requirements that students must satisfy to obtain the baccalaureate degree. So that you will not be penalized by changes that may work to your disadvantage and so that you will benefit by changes that assist you in completing your degree requirements, it is college policy that you may choose to fulfill the university, college and major requirements in effect at the time you were registered at UC Davis. If you have transferred to UC Davis from a community college, state college, or another university, you may follow the requirements as stated in any UC Davis *General Catalog* in effect *either during the three years immediately preceding your transfer to UC Davis or at the time you first registered at that institution, whichever is most recent*. Once you have chosen the year of the *General Catalog* under which you wish to be governed, you must satisfy all of the university, college and major requirements specified in that catalog.

College of Biological Sciences

All students in the College of Biological Sciences must satisfy the following college requirements in addition to satisfying the [University Requirements](#), on page 106 and [General Education Requirement](#), on page 107.

Unit Requirements

Total Units. Complete no less than 180 units allowing for the unit credit limitations listed below. No student may exceed 225 units in their academic career without approval of the Dean. Units earned in Advanced Placement and International Baccalaureate exams are not counted toward this 225-unit limit. Upon reaching 200 units, a student must submit a quarter-by-quarter graduation plan to the Biology Academic Success Center or a hold will be placed on his/her registration.

Upper Division Units. Complete 64 upper division units.

Unit Credit Limitations

- **Passed/Not Passed Units.** All courses used to satisfy major requirements must be taken on a letter-graded basis, unless courses are only offered on a Passed/Not Passed basis.

The Academic Senate limits the total number of courses graded P, including units earned in courses graded "P/NP only," to one third of the units completed on the UC Davis campus.

- **Physical Education.** Maximum of 6 units of Physical Education 1, 6 and similar physical activity courses including transfer work.
- **Transfer work.** Maximum of 105 units of credit earned at two-year institutions (community college).
- **Graduate Courses.** Units from courses in the 200 series (with

the exception of course 299) may apply toward the minimum 64-unit upper division requirement and/or as a substitution for undergraduate courses in the major under the following conditions:

- Students must obtain written permission from the course instructor and the master adviser for their major.
- The master adviser will confirm that students have a minimum 3.400 GPA in the major at the time that they register for the course.
- **Professional and teaching courses.** Maximum of 9 units in courses numbered 300-399 and 400-499. These units may not be applied toward the 64-unit upper division requirement.
- **Upper division standing.** Must complete 84 units before enrolling in 192, 194H and 199 to receive degree and upper division credit.
- **Special Study.** Not more than 5 units per quarter of Special Study courses (99, 194H, 199).
- **Nonstandard Courses.** Maximum of 20 units of nonstandard courses including transfer work.*

Nonstandard courses are defined here as tutoring, internship, research, research conference, honors research and similar course activities. Some examples of these courses are, but are not limited to, courses numbered 90C, 92, 92C, 97T, 97TC, 99, 189, 190C, 191, 192, 192C, 193, 194H, 197T, 197TC, 199, etc. Courses numbered 98 or 198 are not included in this 20-unit limitation.

There are additional unit credit limitations on tutoring and internship units.

- **Tutoring.** Maximum of 3 tutoring units including but not limited to 97T, 197T, 97TC and 197TC.
- **Internship.** A maximum of 6 internship units including but not limited to 92, 192, 92C, 192C.

* Specific exceptions to these limits may be granted by the Committee on Undergraduate Petitions based on the uniqueness of the experiences and their concordance with the petitioner's educational objectives.

Credit for Open Campus (Concurrent) Courses. Students may apply credit for courses taken in the Open Campus (Concurrent) Program through UC Davis Extension towards the 180-unit undergraduate degree requirement. The grade points earned when enrolled in Open Campus courses will count toward the calculation of a student's UC GPA upon his/her admission or readmission to regular student status at UC Davis. However, the units earned do not satisfy the university residence requirement. Students registered at UC Davis may not enroll in Open Campus courses.

Residence Requirement

Meet university residence requirement. No additional college residence requirements.

Scholarship Requirement

Students must attain at least a 2.000 GPA for all courses required in their major. Students must also attain a 2.000 GPA in all Depth Subject Matter courses required in their major. Students who fail to maintain a 2.000 GPA in courses required for their major over two consecutive quarters may be required to withdraw from the major.

- **Repeating Courses.** Students may once repeat courses in which they received a grade of D+ or less. To repeat a course more than once, students must petition the Dean for approval prior to enrolling in the course.
- **Passed/Not Passed Grading Option.** All courses used to satisfy major requirements must be taken on a letter-graded basis, unless courses are only offered on a Passed/Not Passed basis.

English Composition Requirement

The English Composition requirement may be satisfied in one of two ways:

1. Completing 8 units, to include 4 upper division units, in English composition courses with at least a C- or Passed grade from the following list: Comparative Literature 1, 2, 3, 4, English 3, Native American Studies 5, University Writing Program 1, 18, 19, 101, 102 series, or 104 series.

OR

2. Passing the English Composition Examination, administered by the Entry Level Writing program, upon completion of 70 units of degree credit. This examination does not yield credit. Students interested in entering the health science field should check with the Health Professions Advising office or the Biology Academic Success Center before choosing this option.

English Composition Examination. The no-fee, no-unit examination is typically offered on a Saturday in October, January, and April; for specific dates see <http://writing.ucdavis.edu/compexam/>.

If students choose to take this challenge exam, they are strongly advised to do so in their junior year. Register for the English Composition Examination at <http://writing.ucdavis.edu/compexam/> from the Monday before the exam date until Friday at noon or until no spaces remain. The AWPE/Upper-Division Composition Examination form, available at the UC Davis Bookstore, is required. It is recommended that students with disabilities contact the Student Disability Center 530-752-3184 and the University Writing Program 530-752-6283 at least two weeks prior to the exam date to arrange accommodations. No examinations are given during the summer.

Additional Bachelor of Arts Requirements

Bachelor of Arts degrees are available in Biological Sciences; Evolution, Ecology and Biodiversity; Microbiology; and Plant Biology. These degrees offer students an opportunity to broaden their education while pursuing a rigorous life science major.

Candidates for the Bachelor of Arts degrees must complete two additional requirements.

1. **Foreign Language.** The requirement can be met in one of three ways:
 - Complete with passing grades 15 quarter units of college level course work, or the equivalent thereof, in a single language.
 - Attain a minimal score prescribed by the Committee on Undergraduate Curriculum and Educational Policy, in the College Entrance Examination Board Achievement Test in Foreign Language, which may be taken at any time during the student's high school career, or any other achievement test approved by the Committee on Undergraduate Curriculum and Educational Policy.

- Placement beyond the 15-unit level on a placement/proficiency examination offered by one of the foreign language departments of the University.

2. **Breadth Requirements.** Satisfaction of the campus General Education requirement (or IGETC for transfer students) in effect Fall 2011 will satisfy the Breadth requirement. Students that matriculated prior to Fall 2011 have the option of completing the Breadth Requirement specified in the College of Biological Sciences regulations prior to this revision. Completion of a minor in the humanities, social sciences or fine arts can offer structure and coherence to the courses selected for satisfaction of the requirement.

Declaration of Major/Undeclared—Life Sciences

Students must declare a major by 90 units. A hold will be placed on a student's registration if he/she is still undeclared after completing 90 UC Davis units.

All changes of major and college must be completed before the beginning of the student's quarter of graduation.

Students who are enrolled in a major administered by the College of Biological Sciences and students who are Undeclared-Life Sciences see a staff adviser in the Biology Academic Success Center for their major, university, general education, and college academic advising. Master faculty advisers are also available in the department that houses their major, as listed in the catalog, or at the Biology Academic Success Center.

Degree Check

Students are encouraged to meet with their academic adviser at least once a year to ensure timely graduation. Students are required to consult a Biology Academic Success Center academic adviser at three points in their academic careers:

- In their first two quarters on the Davis campus.
- Before accumulating 90 units.
- Before accumulating 135 units.
- In addition, if you are taking courses which, if passed, will cause your unit total to exceed 200 units and you intend to register for the next quarter, you must file a plan with your adviser that leads to graduation within 225 units. If the plan anticipates registering after you have accumulated 225 units, the plan must be submitted to the Dean for approval.

If you do not meet any of these advising requirements, a hold may be placed on your registration.

Degree Requirement Changes or Catalog Rights

On occasion, the faculty makes changes in the requirements that students must satisfy to obtain the baccalaureate degree. So that you will not be penalized by changes that may work to your disadvantage and so that you will benefit by changes that assist you in completing your degree requirements, it is college policy that you may choose to fulfill the university and college requirements (see [General Education Requirement, on page 107](#) for an exception) as stated in any UC Davis *General Catalog* in effect at the time you were registered at UC Davis. If you have transferred to UC Davis from a community college, state college, or another university, you may follow the requirements as stated in any *UC Davis General Catalog* in effect either during the three years immediately preceding your transfer to UC Davis or at the time you first registered at that

institution, whichever is most recent. Once you have chosen the year of the *General Catalog* under which you wish to be governed, you must satisfy all of the university and college requirements specified in that catalog.

With respect to the completion of your major requirements, most of the majors in the College of Biological Sciences require completion of the major degree requirements in effect at the time you officially declared your major. However, because departments differ in how they handle these matters, check with the department or major program office if you have any questions about which requirements apply to you.

College of Engineering

Prerequisite Requirements

Engineering is a discipline that requires mastery of prerequisite coursework before you can move forward in the curriculum. You should plan to repeat any engineering requirement in which you earned a grade of less than C-. You are encouraged to adhere carefully to all prerequisite requirements. The instructor is authorized to drop you from a course for which you have not completed the stated prerequisites.

Current Curriculum Requirement

Because engineering is a rapidly developing profession, the things an engineer needs to know change on an almost daily basis. To respond to this, the faculty members make changes to the curriculum on a regular basis. In order to ensure that students graduate with the most current engineering knowledge, College of Engineering students must complete the major requirements in effect in the academic year of graduation or in the immediately preceding academic year. For information about undergraduate studies in the College of Engineering, see <http://engineering.ucdavis.edu/undergraduate/>.

When degree requirements change, a transition plan is developed to ensure that students who are getting regular advising and following recommended course sequences will be able to graduate within four years. Contact your program adviser or the Engineering Undergraduate Office for more specific information or questions. The list of advisers can be found at <http://engineering.ucdavis.edu/undergraduate/advisors/>.

The faculty of the College of Engineering may prescribe special or comprehensive examinations or may otherwise test student preparation and achievement, and may specify course-work alternatives to passing such examinations.

Engineering Design

Engineering design is the process of devising a system, component, or process to meet certain needs. Design involves a decision-making process (often iterative), in which the basic sciences, mathematics and engineering sciences are applied to convert resources optimally to meet a stated objective. Among the fundamental elements of the design process are the establishment of objectives and criteria, synthesis, analysis, construction, testing and evaluation. Specific design requirements are included in individual curriculum descriptions. In general, the design experience in the engineering programs prepares students to recognize responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in

global, economic, environmental, and societal contexts. The engineering curricula culminate in a major design experience based on the knowledge and skills acquired in earlier course work and incorporating appropriate engineering standards and multiple constraints to satisfy desired needs.

Unit Requirements

Each candidate for the degree of Bachelor of Science in Engineering must satisfactorily complete an approved curriculum in engineering, totaling at least 180 units. No unit of coursework you complete may be used to satisfy two different degree requirements, except under any of the following conditions:

- You may use course units to satisfy both General Education 3 requirements and course requirements for the major.
- You may use course units for two different degree requirements in cases where the catalog specifically states that course units may be used to satisfy two different degree requirements.
- You may use course units for permitted double majors within the College of Engineering.

Detailed requirements for the approved curricula are given in the [Programs and Courses](#) chapter of this catalog; to see the courses required in your major, consult this section. The minimum number of required units varies with the curriculum. You are responsible for planning your program and satisfactorily completing all degree requirements.

You may, for good cause, request a modification of particular degree requirements by submitting a student petition. These petitions, available from your program adviser or from the Engineering Undergraduate Office, can be valuable aids in resolving individual program conflicts or other special problems. Such petitions are subject to approval by the Undergraduate Educational Policy Committee, composed of one faculty representative from each department and non-voting staff advisers. The Associate Dean for Undergraduate Studies serves as ex-officio member of this committee.

Residence Requirement

College of Engineering students must meet the university residence requirement. There are no additional college residence requirements.

Limitation on Credit for UC Davis Extension Courses.

Students may apply a maximum of 16 units of credit for courses taken in the Open Campus Program through UC Davis Extension towards the unit requirement of their major. Courses may be taken only when written approval has been obtained from the Associate Dean for Undergraduate Studies. The grade points earned when enrolled in Open Campus courses will count toward the calculation of the student's UC GPA upon your admission or readmission to regular student status at UC Davis. Students registered at UC Davis may not enroll in Open Campus courses.

Scholarship Requirement

In addition to meeting the university scholarship requirement, College of Engineering students are required to maintain at least a 2.000 grade point average for all undergraduate course work within Engineering at UC Davis.

English Composition Requirement

Prospective engineering employers cite the ability to write well and communicate effectively as a desirable trait. Because engineers must be able to explain complex ideas, it is critical that you pay close attention to the development of writing and communication skills. All students admitted to the University must complete the Entry Level Writing Requirement (see [page 106](#)) before credit for any composition course or general education writing experience course will be granted.

Once the Entry Level Writing Requirement has been satisfied, there are two distinct composition requirements for engineering students:

- **Lower-division composition.** This requirement can be satisfied by completion of an Advanced Placement English exam with a score of 4 or 5; International Baccalaureate credit for English 3; or completion of certain coursework with a grade of C- or better. Courses allowed vary by major. Please see your program adviser to determine coursework that has been approved for your major.
- **Upper division composition.** Requirements for upper division composition vary by major. Please see your program adviser to determine the coursework that has been approved for your major.

Please note that when you use coursework to satisfy either of the composition requirements, you must earn a grade of C- or better.

Electives

Because, as an engineer, you will be a significant participant in the human setting, you will need to have a breadth of education that will allow you to deal with contemporary social issues and to understand the impact of engineering solutions in the global and societal context. To these ends, you must complete the UC Davis General Education requirement details; see [page 107](#).

Since all engineering programs are in the Science and Engineering GE topical breadth area, you will fulfill the campus GE requirements by taking courses in the Arts and Humanities and Social Sciences areas.

In satisfying the GE requirement note that (a) you must take GE courses for a letter grade, and (b) you must satisfy the Entry-Level Writing requirement before you can receive writing experience credit for any course.

Students in the College of Engineering will complete any version of the general education requirement in effect between the time of matriculation and the time of graduation. Readmitted students will complete the general education requirement in effect at the time of readmission.

College of Letters and Science

Unit Requirements

A minimum of 180 units is required for the bachelor's degree. 64 units must be earned in upper division courses.

Registration Beyond the 225-unit Limit. You are expected to fulfill all degree requirements within the 180- to 225-unit range. Once 225 units have been completed (excluding units awarded for College Board Advanced Placement Examinations or International Baccalaureate Examinations), you may register only with the permission. Such permission is rarely granted and then typically only

to allow completion of minimum degree requirements. You will be expected to adhere to a program of courses agreed upon and to meet other conditions that may have been set. Approval must be obtained from the Undergraduate Education and Advising Office before you will be permitted to register for courses for the quarter following completion of 225 or more units.

If you are in good standing, you will be able to complete 12 quarters or the equivalent (e.g., four years) of college work even if you have earned more than 225 units before you finish your fourth year. You must petition for continuation, however, and file the quarter-by-quarter course program you have planned.

Unit Credit Limitations

For certain courses, limits have been established on the number of units that can be counted towards the 180-unit minimum required for the degree. To avoid discovering just before graduation that you are short units, keep track of the number of units you have taken in each of the following categories.

Limitation on Credit for Graduate and Professional Courses.

Undergraduates may enroll in graduate and professional courses in the 200, 300, and 400 series subject to the restrictions described in [Academic Information, on page 83](#), in this catalog. Graduate and professional courses that have been completed will be listed on the student's transcript in the usual manner. *However, the units earned may be counted toward degree requirements only under the conditions listed below.*

Within the limitations A, B and C given below, undergraduate students in the College may count an unlimited number of units in graduate 200 series courses and up to a combined total of 9 units in 300 and 400 series professional courses toward degree requirements. These units, however, are not counted as upper division units unless this is granted by petition to the Undergraduate Education and Advising Office.

- The recommendations of the instructor in the course and the department chairperson—in addition to approval from the Undergraduate Education and Advising Office—must be obtained by petition in order to receive credit toward the degree for the following kinds of courses:
 - All graduate courses 200–298, whether offered by a department or program outside of or within the College of Letters and Science
 - All professional courses 300–398 for teachers offered outside of the College of Letters and Science
 - All postgraduate professional courses 400–498 offered outside of the College of Letters and Science
 - All variable unit courses 300–398 and 400–498 offered within the College of Letters and Science
- The minimum eligibility conditions for an undergraduate student in the College to petition for degree credit for a 200, 300, or 400 series course are a UC grade point average of 3.300 and completion of 18 upper division units basic to the subject matter of the course. These eligibility conditions may be waived, however, upon the recommendation of the course instructor and concurrence of the department chairperson if the student's preparation warrants exception.
- Undergraduates in the College cannot receive degree credit for special study courses 299, 399, or 499.

Limitation on Credit for Units Graded P. Excluding courses that are graded on a *Passed/Not Passed (P/NP)* basis only, the number of units graded P that may be accepted towards a degree in the College of Letters and Science is limited to not more than one fourth of the units completed in residence on the UC Davis campus.

The Academic Senate limits the total number of courses graded P, including units earned in courses graded “P/NP only,” to one third of the units completed on the UC Davis campus. This limitation applies to all UC Davis undergraduates, including Letters and Science students.

Limitation on Credit for UC Davis Extension Courses.

A. UC Davis Extension courses with a designator of “X.” Students may apply credit earned through lower division and upper division UC Davis Extension “X” courses towards the 180-unit requirement only with written approval from the dean prior to registration. The degree credit allowed by the dean for such courses is usually less than the unit value listed in the course description. Additional limitations on UC Davis Extension “X” courses include: a maximum of 9 units may be offered for elective credit only and may not be applied toward fulfillment of the Area, Foreign Language, Upper Division, or Residence requirements of the College.

B. UC Davis Extension courses with a designator of “XD.” Students may apply credit earned through lower division and upper division UC Davis Extension “XD” courses towards the 180-unit requirement. Additionally, credit from such courses may be applied toward fulfillment of all university, campus, college and major unit and subject matter requirements—including the Area, Foreign Language, Upper Division and Residence requirements of the College—in the same manner that the corresponding regular UC Davis course is so accepted.

C. UC Davis Extension courses with a designator of “XDC” (Open Campus (Concurrent) Program). Subject to the following conditions, students may apply credit earned through lower division and upper division UC Davis Extension Open Campus (Concurrent) courses—i.e., those bearing the “XDC” designator—towards university unit and subject requirements, and, effective Fall 2003, the calculation of the student’s UC GPA, upon admission or readmission to regular student status at UC Davis.

- Students on leave of absence and regular status students when matriculated, or regular status students for a period of one calendar year following the last term of regular enrollment at UC Davis, may not enroll in Open Campus (Concurrent) courses. Exceptions to this policy for undergraduate students may be made only under extraordinary circumstances by petition with prior approval by the Undergraduate Education and Advising Office and the Dean of UC Davis Extension.
- Concurrent (“XDC”) courses do not count toward satisfaction of the University residence requirement or the residence requirements of the campus or the college.
- Concurrent (“XDC”) courses may constitute at most half of the units offered in satisfaction of the upper division requirements of the major.
- In the event that the faculty of the college imposes further restrictions on the number of units of UC Davis Extension Open Campus (Concurrent) course work that may be applied to undergraduate degree programs, the allowable number of units of course work will be determined chronologically, starting with the course completed first. Grade point credit for such

courses will be determined in the same manner.

Other Unit Credit Limitations. The following are additional courses that have limits on the number of units that can be counted toward your degree.

- **Internship courses (numbers 92, 192):** 12 units maximum including internship units taken at other institutions; see Non-standard courses
- **Music 130, 131, 140-150 (combined):** 19 units maximum
- **Nonstandard courses (92, 97T, 97TC, 99, 192, 194H, 197T, 197TC, 199 and similar courses):** 30 units maximum or one-sixth of the units taken at UC Davis, whichever is the smaller; note the separate unit limits on internship, special study and tutoring courses; and major limitations
- **Physical Education 1 and 6 (combined):** 6 units maximum
- **Special Study courses (99, 194H, 199):** 5 units maximum in any one quarter; see Nonstandard courses
- **Tutoring courses (97T, 97TC, 197T, 197TC):** 10 units maximum; see Nonstandard courses, above

Residence Requirement

While registered in the College of Letters and Science, a minimum of 27 upper division units, including 18 upper division units in the major, must be completed on the UC Davis campus; work completed while registered in the UC Study Abroad Program or the UC Davis Extension Open Campus Program does not satisfy campus or College Residence requirements.

Scholarship Requirement

The minimum grade point average to satisfy the scholarship requirement is 2.000 for all courses counted toward the major and for all upper division courses used to satisfy major requirements. Only grades earned in courses taken at UC Davis will be included in the grade point computations. To obtain these minimum averages in the major, you may repeat courses that are graded D or F. If you have to repeat a course more than once, you need prior approval from the Undergraduate Education and Advising Office.

English Composition Requirement

The English Composition requirement can be met in one of two ways:

1. By passing the English Composition Examination upon completion of 70 units of degree credit (the examination does not yield credit);

OR

2. By completing with a grade of C– (or P) or better
 - a. One course from English 3, Comparative Literature 1, 2, 3, 4, Native American Studies 5, or University Writing Program 1, 1V, 1Y;

and

 - b. One course from University Writing Program 101, 102 series, or 104 series, which must be taken after 84 units have been completed.

Transfer Courses in English Composition. Transfer courses considered to be equivalent or comparable to English 3, Comparative Literature 1, 2, 3, 4, Native American Studies 5, or University

Writing Program 1, 1V, 1Y, 101, or 104 series, will be accepted toward satisfaction of the English Composition requirement. Note that University Writing Program 101 and 104 series courses or the equivalent must be taken after you have completed 84 units of transferable degree credit.

If your transfer work does not include an acceptable English composition course taken after you had completed or accumulated 84 units, you may fulfill the requirement by examination (see below) or take one course from University Writing Program 101, 102 series, or 104 series at UC Davis.

Upper Division Composition Examination. The no-fee examination is typically offered on a Saturday morning in October, January and April. No examinations are given during the summer.

For specific examination dates, instructions, and to sign up to take an examination, see the University Writing Program-Upper Division Composition Exam Information at <http://writing.ucdavis.edu/compexam>. It is recommended that students with disabilities contact the Student Disability Center at 530-752-3184 and the Entry Level Writing Program Office 530-752-0450 at least two weeks prior to the exam date to arrange accommodations.

Area (Breadth) Requirement

The College Breadth Requirement promotes the intellectual growth of students by asking them to acquire a broader background of knowledge than is provided by the usual major. The Breadth requirement also guides students in exploring the interdependence of knowledge.

A.B. Degree. Satisfaction of the campus General Education requirement.

B.S. Degree. A total of 90 units in natural sciences/ mathematics; units used in satisfaction of the campus General Education requirement in Science and Engineering topical breath may also be used to satisfy this requirement.

Courses numbered 92, 97T, 97TC, 98, 192, 197T, 197TC, 198 and from 200 through 499 cannot be counted toward satisfaction of the natural sciences/mathematics Area requirement. A maximum of 10 units in special study courses (99, 194H, 199) may be counted toward that portion of the Area requirement. Subject to the restrictions just listed, courses acceptable for fulfilling the 90-unit natural sciences/mathematics Area requirement are:

Natural Sciences and Mathematics

- Anatomy, Physiology and Cell Biology 100
- Anthropology 1, 5, 15, 151, 152, 153, 154A, 154BN, 156A, 156B, 157, 158
- Astronomy
- Avian Sciences 13
- Biological Sciences
- Cell Biology and Human Anatomy 101, 101L
- Chemistry
- Engineering 6, 10, 35, 102
- Engineering: Biomedical 126
- Engineering: Computer Science 10, 30, 40, 50, 60, 120, 122A, 122B, 140A, 140B, 142, 150, 152A, 152B, 153, 154A, 154B, 158, 160, 163, 165A, 165B, 170, 175, 177, 178
- Engineering: Electrical and Computer 70, 170, 173A
- Entomology 10, 100, 153
- Environmental and Resource Sciences 30, 131

- Environmental Science and Policy 30, 100, 121
- Environmental Toxicology 101
- Evolution and Ecology
- Exercise Biology 101, 103, 106, 106L, 110, 111, 112, 113, 115, 116, 117, 126
- Fiber and Polymer Science 110
- Food Science and Technology 100A, 100B, 101A, 101B
- Geology
- Integrated Studies 8A
- Mathematics
- Microbiology
- Molecular and Cellular Biology
- Neurobiology, Physiology, and Behavior
- Nutrition 10, 111AV, 111B
- Pathology, Microbiology, and Immunology 126
- Physical Education 133, 135
- Physics
- Plant Biology
- Psychology 41, 100, 101, 103A, 103B, 104, 113, 121, 122, 123, 124, 126, 127, 129, 130, 131, 135, 146, 180B
- Statistics
- Wildlife, Fish, and Conservation Biology 10

Foreign Language Requirement; A.B. and B.A.S. Degrees

A key component of liberal education, the study of another language exposes students to a ubiquitous and highly diverse component of human behavior and interaction. Language learning enables students to communicate effectively in an increasingly internationalized world, enhances their ability to understand ways of thinking different from their own, gives them direct access to cultural production from another time and place, awakens in them an awareness of the conditioned nature of their assumptions about the world, and trains them to cope more effectively with intellectual and practical problems they may face in their future careers.

The College of Letters and Science encourages its students to acquire functional proficiency in at least one language other than English before graduating. At a minimum, the College requires A.B. candidates to complete three sequenced quarters (15 units) of courses, or its equivalent, in one foreign language. B.S. candidate requirements are determined by their respective major program.

Languages Satisfying the Requirement

The Foreign Language Requirement may be satisfied in any language offered at UC Davis, including ancient languages, or which is normally taught at—and for which transfer credit is allowed—from another institution, including American Sign Language. Students may also satisfy this requirement by examination in a language not offered on the UC Davis campus (see below).

Satisfaction of the Requirement

At UC Davis or Another Accredited Institution. You may satisfy the requirement by taking 15 quarter units of one foreign or classical language offered at UC Davis. You may also fulfill this requirement by taking the equivalent number of transferable quarter units in one foreign language at an accredited institution.

Transfer students should consult the Transfer Credit Evaluation, which is issued by the Deans' Office within a quarter after their first enrollment at UC Davis. Students planning to continue to study the same language at UC Davis must consult the relevant language coordinator.

If you have successfully completed the second or third year of a language in the tenth or higher grade in high school, you may receive unit credit for course 1 of that language when taken at UC Davis, but the grading mode will be *P/NP* only. Although a Passed or Not Passed grade will be charged to your *P/NP* option, no petition is required; see [Passed/Not Passed \(P/NP\) Grading, on page 91](#).

Through Study Abroad. Certain study abroad programs offered by UC Davis through the Study Abroad Center, UC Education Abroad Program and other accredited institutions may be used to satisfy the requirement. Some of these programs do not have a language prerequisite, but others do. If you intend to apply for a study abroad program with a language prerequisite, you should plan on completing the relevant foreign language requirement by the end of your second or third year, depending on the program.

With the Intersegmental General Education Transfer Curriculum (IGETC). IGETC is a series of courses which prospective transfer students attending California community colleges may complete to satisfy the lower division breadth/general education requirements at the University of California. Students may satisfy the Foreign Language requirement by attaining certification of IGETC completion.

By Examination: Proficiency Exam. The UC Davis Language Center (DLC) offers proficiency tests in numerous languages. A proficiency test does not yield unit credit—it only determines whether the Foreign Language requirement has been met or at which point in the language sequence you should enroll. Students must follow the language program's placement policy if they decide to study the language at UC Davis.

By Examination: Standardized Tests. College Board Subject Test: Earning a qualifying score of at least 550 on a College Board Foreign Language Subject Test satisfies the requirement. This test may be taken at any time during your high school career. Once your score is on file at Undergraduate Admissions, notify the Letters and Science Deans' Office so that satisfaction of the College requirement can be noted on your record.

College Board Advanced Placement Examination. A score of 5, 4 or 3 on any foreign language College Board Advanced Placement Examination, with the exception of Latin, taken in high school will satisfy the Foreign Language requirement.

International Baccalaureate Higher Level Examination. A score of 7, 6, or 5 on the French A1, A2, or B Examination, the German A1, A2 or B Examination, the Italian A1 Examination, the Latin Examination, the Portuguese A1, A2 or B Examination, or the Spanish A1 Examination taken in high school will satisfy the Foreign Language requirement.

By Examination: Other means. If you have not completed the required level language course, but assume you have attained equivalent language fluency and cultural knowledge, you may satisfy the language requirement by passing a proficiency examination. For more information, consult the appropriate foreign language department.

You may validate your knowledge of a language acquired by any means before matriculating at UC Davis by taking a proficiency test or another form of evaluation (if available in the relevant language department). A test may not be taken, however, in a language for which you have already received degree credit.

Major Degree Certification

Requirements for major programs are described in the [Undergraduate Courses](#) chapter of this catalog. These requirements are fulfilled by completing a major program offered by a teaching department or program committee in the College of Letters and Science (see the list of majors) or an individual major program approved by the College's Committee on Individual Majors.

No more than six units in internship courses (numbered 92, 192, or similar internship courses) may be accepted in satisfaction of the requirements of major programs. Courses numbered 97T, 97TC, 197T and 197TC do not satisfy unit or course requirements in the major.

Degree Check

Before the beginning of your senior year, take some time to consider your goals and to plan the academic program for your final year as an undergraduate. To plan properly and to ensure that you get the most out of your remaining education and complete all graduation requirements as well, you should know what requirements remain unsatisfied. To help you in these efforts, the Undergraduate Education and Advising Office provides on its website informational materials and instructions on how to evaluate your progress on college and university requirements; see <http://www.ls.ucdavis.edu/advising/>. Many departments provide similar information regarding your major requirements.

Once you have completed 90 units of degree credit, you should contact your departmental adviser for a check of your major requirements. At approximately this point, you will also be required to request an official degree check summarizing your progress in fulfilling college and university requirements from the Undergraduate Education and Advising Office; see <http://ls.ucdavis.edu/advising/academic-advising/mandatory-adv.html> for additional information.

Degree Requirement Changes

On occasion, the faculty makes changes in the requirements that students must satisfy to obtain the baccalaureate degree. So that you will not be penalized by changes that may work to your disadvantage and so that you will benefit by changes that assist you in completing your degree requirements, it is College policy that, unless otherwise specified by the Davis Division of the Academic Senate, you may choose to fulfill the university and College requirements as stated in any UC Davis *General Catalog* in effect at any time you were registered as a full-time student at a postsecondary institution of higher education; e.g., community college, college or university.

Once you have chosen the year of the *General Catalog* under which you wish to be governed, you must satisfy all of the university and college requirements specified in that catalog. With respect to the completion of your major requirements, most of the majors in the College of Letters and Science require completion of the major degree requirements in effect at the time you officially declared your major. However, because departments differ in how they handle these matters, check with the department or major program office if you have any questions about which requirements apply to you.