Majors and Careers

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Choosing a Major

Many students select their University major, the field of study which represents their principal academic interest, at the time they fill out their *University of California Undergraduate Application for Admission and Scholarship.* Some students, however, are not ready to choose a major at the time they apply and that's OK, and still others may wish to change to a different major after they have enrolled.

In preparation for choosing a major, students need to familiarize themselves as much as possible with UCI and its academic programs. Entering students are exposed to a wide range of areas of study, and it is not unusual for students to become enthusiastic about academic disciplines previously unfamiliar to them. At UCI, a number of traditionally separate academic disciplines have strong interrelationships, so that the academic environment is influenced by broad interactions among disciplines. As a complement to classroom study, UCI encourages its students to become involved in a variety of educational experiences such as independent study, laboratory research, field study, writing workshops, computing, and arts productions. Such experiences can help students identify additional areas of interest.

The *UCI General Catalogue* is a good place to find specific information about programs available and requirements. Students are encouraged to talk to academic advisors and faculty and to go to any department to learn more about its programs of study, its requirements for graduation, and possible enrollment limitations. While academic advisors may not be familiar with all fields, they can suggest ways to investigate other areas of study and be helpful in planning a lower-division program which will keep several options open. Courses and workshops designed to assist students in choosing a major are offered by the UCI Division of Career Pathways, the Division of Undergraduate Education, and some of the academic units.

All students are required to choose a major by the time they reach junior status. It is important to look well ahead to this decision and to think about it carefully during the freshman and sophomore years. When considering possible majors, students should keep in mind that some major programs require quite specific preliminary study. At the same time, excessive early concentration could reduce a student’s options and could cause the student to need more than four years to obtain the baccalaureate degree. Furthermore, courses required for graduation (such as General Education) need to be considered. For these reasons, it is desirable for students to plan their programs carefully and thoughtfully, seeking a balance between exposure to a variety of academic areas and completion of courses which are prerequisite to a major under consideration. A qualified student interested in two areas of study may graduate with a double major by fulfilling the degree requirements of any two programs. Certain restrictions may apply; students should check with their academic advisor.

Each school or program has its own standards for change of major. Once a student selects a major, or decides to change majors, the student should visit the academic advising office for their prospective major to obtain current information about prerequisites, program planning, and policies and procedures. For most majors, students may request a change of major by submitting an online application through the StudentAccess system. Further information and a list of excluded majors is available on the University Registrar’s website (http://www.reg.uci.edu/request/changemajor/).

All schools with exceptional requirements have major-change criteria approved by the Academic Senate and published on the Division of Undergraduate Education's Change of Major Criteria website (http://www.changeofmajor.uci.edu). Students changing majors may meet the approved major-change criteria of the unit they wish to enter that are in place at the time of their change of major or those in effect up to one year before.

Division of Undergraduate Education - Undergraduate/Undeclared

Students who enter the University as freshmen or sophomores, who are uncertain about their major, and who wish to explore their options, experiment, and then decide, may participate in Undergraduate/Undeclared Advising administered by the Division of Undergraduate Education. The Division is devoted to enriching the learning environment for lower-division students, especially those in the freshman year. Detailed information about the Undergraduate/Undeclared Advising Program is available in the Division of Undergraduate Education section (http://catalogue.uci.edu/divisionofundergraduateeducation/).

Preparation for Graduate or Professional Study

Undergraduate students should keep the possibility of future graduate or professional study in mind as they plan their academic programs, and they should discuss their career goals with their advisors. Students who have an idea of the direction in which they would like to go should familiarize themselves with the basic requirements for postbaccalaureate study and keep those requirements in mind when selecting courses. Furthermore, students should supplement their undergraduate programs by anticipating foreign language or other special requirements at major graduate schools and by related research, or intensive work in areas outside their major that are of special relevance to their intended graduate work. Students should consult the graduate advisor or academic counselor in the academic unit corresponding to their area of interest and visit the UCI Career Center which offers a number of services useful to those considering graduate or professional study.

General information for prospective graduate students is available on the Graduate Division website (http://www.grad.uci.edu/), while information about UCI's graduate education policies and procedures is available at the Irvine Division of the Academic Senate website (http://www.senate.uci.edu).

Preprofessional Preparation

Law

Law schools educate lawyers to serve the entire spectrum of legal issues (e.g., tax, criminal, entertainment, or immigration law), and across a wide variety of careers in private, public, and nonprofit sectors. As a result, a wide range of academic backgrounds can serve as good preparation for a career in law. Law schools look less for specific areas of study than they do for evidence of academic excellence. A good record in physics or classics, for example, will be preferred over a mediocre record in history or political science. Most law schools give equal preference to students from all academic disciplines. Courses that demand strong writing and analytical work (e.g., logic, writing, mathematics, research methods, and statistics) build skills that are the key to doing well on the Law School Admissions Test (LSAT) and succeeding in law school and the legal profession.

UCI offers a number of law-related courses that students in any major may take. The School of Humanities offers a Humanities and Law minor, emphasizing courses that require critical reading and analysis, and courses that focus on theoretical and applied analytical perspectives on ethical, political, and social issues relevant to the law. Further, the globalization and increased diversity of our world puts a premium on strong language skills and an understanding of multiple cultures. The School of Social Sciences offers courses in the study of law, international relations, and economics of law and recommends that students take some political science courses as well. The School of Social Ecology offers many law-related courses in both substantive law (such as environmental and criminal law) and in law and society and criminal justice. Social Ecology majors are provided the opportunity to apply theories learned in the classroom to actual problems through its field study program. Students may pursue fieldwork in both public and private law practices, law enforcement, and corrections agencies. Through these placements, students gain direct experience and have the opportunity to shadow professionals in these areas.

Students should know that law schools look closely at five aspects of a student's application: grades, LSAT results, the applicant's statement of purpose, in-depth letters of recommendation, extracurricular activities, and law-related work experience. Students should be aware that not everyone who applies is admitted to law school. One consideration in selecting an undergraduate major is alternative careers should one's goals change.

Medicine and Other Health-Related Sciences

Although health science educators strongly recommend that students obtain a bachelor's degree prior to admission to the health sciences, there is no preferred major. Many UCI students, who plan to enter the health professions major in Biological Sciences because much of the basic course work for that major is also required for medical school admission; however, students may major in any academic field as long as they also take the prerequisite courses required by professional health science schools. In general, the minimum amount of undergraduate preparation required includes one year each of English writing/composition, physics, biology with laboratory, chemistry (to include inorganic, organic, and biochemistry), and mathematics (especially calculus and statistics). Courses in cell biology, developmental biology, genetics, molecular biology, physiology, and computer science are recommended. In addition, some health sciences schools have additional course requirements or recommendations, for example, English and/or a foreign language, in particular, Spanish.

Although many factors ultimately are considered when reviewing applicants for admission, admission committees look carefully at the undergraduate grade point average; academic performance in biology, chemistry, physics, and math coursework; the results of the Medical College Admission Test (MCAT); the student's personal essay and/or interview; letters of recommendation; clinical exposure; research experience, especially in a biological, medical, or behavioral science; and extracurricular activities which demonstrate the applicant's ability to interact successfully with a diverse population of individuals.

Since medical programs cannot accommodate all qualified applicants and competition for entrance is keen, it is important to keep in mind alternative career opportunities should one not be accepted to a health science school, or should one decide to pursue instead, one of the expanding number of health-related programs now available.

Business/Management

The contemporary executive or manager must be a creative thinker, make complex decisions, and have the ability to perceive and participate in the full scope of an enterprise while understanding its role in the economy. Effective management requires leadership ability, strong problem-solving skills, the ability to successfully deploy and manage information technologies, effective oral and written communication skills, analytical skills, an understanding of global economic trends, and a basic knowledge of behavioral processes in organizations.

Although not required for preprofessional school preparation, The Paul Merage School of Business offers a major in Business Administration and a major in Business Information Management with the Donald Bren School of Information and Computer Sciences. The Merage School also offers minors in Management, Accounting, and Innovation and Entrepreneurship as a supplement to any undergraduate major. The Management minor can provide students with a broad understanding of management theory and practice and may be helpful to students in determining whether they wish to pursue a career in business or management or undertake graduate-level study in management. The Accounting minor prepares students for careers in the accounting field or for graduate-level study. The minor in Innovation and Entrepreneurship provides extensive academic and practical training for students to embark on careers as entrepreneurs (innovating to form new companies) and intrapreneurs (innovating within existing companies).

Students can also supplement their major course work to develop the skills needed for business and management by taking electives such as calculus, statistics, economics, psychology, sociology, computer science, and political science. Also, students are encouraged to take intensive course work in the culture, history, geography, economy, politics, and language of specific foreign countries.

For admission purposes, the majority of graduate schools of business look at five areas: grades, scores on the Graduate Management Admission Test (GMAT), the applicant's statement of purpose, in-depth letters of recommendation, evidence of leadership in school and community activities, and work experience. Substantive work experience is becoming an increasingly important prerequisite for many programs.

Students from a variety of undergraduate disciplines including liberal arts, social sciences, physical or biological sciences, computer science, and engineering are encouraged to apply to UCI's Paul Merage School of Business.

Career Opportunities

UCI's academic units which offer undergraduate education leading to the bachelor's degree provide students with opportunities to explore a wide range of interests leading to a career choice or to further education at the graduate or professional level. The lists which follow show the varied career areas pursued by UCI graduates. Any major can lead to a number of careers. Additional discussions of careers are presented in individual academic unit sections.

Arts Career Areas

Acting, Advertising, Animation, Arts Administration, Art Therapy, Broadcasting, Choreography, Community Development, Composition, Conducting, Conservation/Restoration, Consulting, Criticism, Curating, Digital Arts Production, Direction, Environmental Design, Graphic Design, Illustration, Instrument Repair/Tuning, Interior/Industrial Design, Journalism, Law, Librarianship, Lighting, Marketing, Medical Illustration, Music Therapy, Performance, Photography, Photo Journalism, Physical Fitness, Printing, Production, Publicity, Public Relations, Publishing, Set/Stage/Costume Design, Stage Management, Talent Management, Teaching, Tourism, Visual Resources Management, Writing

Graduates of the Claire Trevor School of the Arts may choose to become professional actors, art historians, artists, dancers, or musicians. There are many other careers to explore in numerous arts-related areas, or graduates may wish to combine part-time professional performance with supplemental work. The field of arts administration is an increasingly important career area, offering opportunities to work with opera and dance companies, repertory theatre companies, museums, state and local arts councils, community arts organizations, and arts festivals.

Biological Sciences Career Areas

Bioanalysis, Biochemistry, Biomedical Engineering, Cell Biology, Chiropractic Medicine, Dentistry, Developmental Biology, Dietetics, Environmental Management, Forestry, Genetic Engineering, Health Administration, Industrial Hygiene, Marine Biology, Medical Technology, Medicine, Microbiology, Nurse Practitioner, Occupational Therapy, Oceanography, Optometry, Osteopathy, Plant Biology, Pharmacology, Pharmacy, Physicians' Assistant, Physical Therapy, Podiatry, Public Health, Quality Control, Research, Sales, Speech Pathology, Teaching, Technical Writing and Editing, Veterinary Medicine

The health field is one of the fastest-growing career areas in the country. Work sites may include private corporations, educational institutions, hospitals, health care complexes, private foundations, city and county governments, state agencies, the federal government, and many others.

Education Sciences Career Areas

Administration and Leadership, Adult and Family Services, After School Learning and Development, Child and Adolescent Learning and Development, Curriculum Design, Digital Media, Education Publishing, K-12 Education, Language Learning, Learning Technologies, Policy Analytics, Research and Evaluation, School and Vocational Counseling, Student Affairs

Graduates of Education Sciences are prepared for careers in the global knowledge economy, with opportunities to apply learning modalities and technologies in multicultural contexts. Graduates may choose from diverse career opportunities in public education, informatics, higher education, and education software development. Employers include government, private industry, and non-profit organizations. Many graduates will pursue advanced degrees leading to instructional certification, academic research, or administrative leadership.

Engineering Career Areas

Aerospace, Biochemical, Biomedical Devices and Instrumentation, Biomedical Imaging, Biotechnology, Chemical Engineering, Communications, Computer Architecture, Computer Engineering, Computer Software, Control Systems, Digital Signal Processing, Earthquake Safety, Electric Power, Electronics, Electro-optics, Environmental Control, Environmental Engineering, Flood Control, Geotechnical, High-Speed Image Processing, Hydraulics, High-Frequency Devices and Systems, Land Development and Urban Planning, Manufacturing Engineering, Materials, Process Control, Propulsion and Power, Public Works, Reliability, Robotics, Structures, Traffic, Transportation, Water Resources, Water Supply

These are some areas for employment available to UCI engineering graduates. Career paths typically involve one or more of the following: design, research and development, manufacturing or construction, operations, consulting, applications and sales, management, or teaching. At UCI they will have had the choice of Aerospace, Biomedical, Biomedical: Premedical, Chemical, Civil, Computer, Computer Science and Engineering, Electrical, Environmental, Materials Science and Engineering, or Mechanical Engineering. However, they will frequently find challenging positions in related areas such as industrial engineering, for which their general and specialty course work at UCI, followed by formal or informal, on-the-job training will qualify them. Approximately half of UCI's Engineering graduates obtain advanced degrees from UCI or other universities, and almost all engage in continuing

education to keep abreast of advances in technology. Many Engineering graduates build on their engineering background and enter graduate programs to obtain degrees in the fields of administration, law, medicine, physics, or mathematics.

Humanities Career Areas

Advertising, Banking, Broadcasting, Business, Counseling, Communications, Diplomacy, Education, Film and Television, Foreign Service, Government Service, Human Resources, Insurance, International Relations, Journalism, Law, Library Science, Management/Administration, Marketing, Medicine, Personnel, Politics, Public Administration, Public Relations, Publicity, Publishing, Research, Sales, Screenwriting, Social Service, Social Welfare, Teaching, Technical Writing, Tourism, Translating/Interpreting, Writing

The School of Humanities prepares students to be global citizens and leaders in today's world. Students not only master a body of knowledge, but they also develop a set of portable skills needed for a lifetime. Humanities majors are well-suited for widely-varied careers because they are taught to read closely, to observe critically, to think logically and analytically, to research methodically, and to communicate effectively across cultures. They can develop varied, long, and successful careers because of their heightened social and emotional intelligence and ability to learn and adapt on the job. Diverse career fields available to Humanities graduates include entry-level positions in both the public and private sectors or professional-level opportunities combining the degree with further specialization. Humanities graduates may also elect to enter into professional graduate programs such as education, law, library science, medicine (with proper prerequisites), or public administration. Business and industry utilize Humanities graduates for various management training programs including areas in banking, sales, and insurance. Graduates with special skills in oral and written communications may look to positions with newspapers, advertising agencies, public relations firms, radio and television stations, publishing houses, as well as non-profit organizations such as museums. Technical writers are in demand, particularly those who have had some preparation in engineering, computer science, and/or the sciences. Opportunities for graduates fluent in languages other than English can be found in areas like government, business, social service, counseling, foreign service, and international trade.

Information and Computer Science Career Areas

Applications Programming, Bioinformatics, Computer-Aided Design, Computer Animation, Computer Architecture, Computer Networks, Computer Simulation, Computer Systems Design, Cybersecurity, Databases, Digital Media and Learning, Information Systems Design and Consulting, Embedded Systems, Machine, Learning, Management Information Systems, Multimedia Applications, Parallel and Distributed Systems, Software Engineering, Human-Computer Interface Design, Supercomputing, Systems Administration, Systems Analysis and Design, Systems Programming, Business Information Management

Graduates of the Donald Bren School of Information and Computer Sciences (ICS) pursue a variety of careers. Many graduates specify, design, and develop a variety of computer-based systems comprised of software and hardware in virtually every application domain, such as aerospace, automotive, biomedical, consumer products, engineering, entertainment, environmental, finance, gaming, investment, law, management, manufacturing, and pharmacology. ICS graduates also find jobs as members of research and development teams, developing advanced technologies, designing software and hardware systems, and specifying, designing, and maintaining computing infrastructures for a variety of institutions. Some work for established or start-up companies while others work as independent consultants. After a few years in industry, many move into management or advanced technical positions. Some ICS students also use the undergraduate major as preparation for graduate study in computer science or another field (e.g., medicine, law, engineering, management).

Nursing Science Career Areas

Direct Patient Care in Hospitals, Clinics, Communities, and Homes, Advance Primary Care Practice (e.g., Nurse Practitioner), Higher Education (e.g., Nursing Professor), Health-related Research, Health Care Administration, Provider Relations, Policy Analysis, Policy Development, Risk Assessment, Global Health, Consulting, Program Evaluation, Incident/Disease Investigation, Research Methodology, Data Analysis, Clinical Trials, Social and Economic Development, Health Policy and Law, Women's Health, Children's Health, Health and Behavior, Design of Health Care Systems, Pharmaceutical Production and Development, Biotechnology, Medicinal Chemistry, Medicine, Pharmacy, Health Promotion, Health Care Delivery Systems, Physical Restoration and Rehabilitation, Program Management and Design, Disease Prevention and Control, Community Health and Outreach, Health Forensics, Health Insurance and Management, Information Technology, Marketing, Public Relations

Graduates of Nursing Science are prepared for a wide range of unparalleled career opportunities at the frontiers of many emerging and established fields in health care, industry, government, research, and education. Opportunities include working with private corporations, hospitals, medical clinics, health care agencies, pharmaceutical industry, biotechnology industry, local and state government agencies, the federal government, educational providers, court and probation systems, and many others. Graduates can use their education and training to enter a rich variety of graduate programs and to earn professional degrees in related fields.

Pharmaceutical Sciences Career Areas

Pharmaceutical Production and Development, Biotechnology, Medicinal Chemistry, Medicine, Pharmacy, Health Promotion, Health Care Delivery Systems, Physical Restoration and Rehabilitation, Program Management and Design, Disease Prevention and Control, Community Health and Outreach, Health Forensics, Health Insurance and Management

Graduates of Pharmacy and Pharmaceutical Sciences are prepared for an unparalleled range of career opportunities in emerging and established biomedical fields in industry, government, research institutes, and education. Opportunities include working in private corporations, hospitals, medical clinics, health care agencies, pharmaceutical industry, biotechnology industry, local and state government agencies, the federal government, educational providers, court and probation systems, and many others. Graduates have a rich variety of choices in filling professional positions in any of these

settings or first pursuing additional training at the graduate level in pharmaceutics, chemistry, pharmacology, or biological sciences. Earning an advanced professional degree in pharmacy, medicine, dentistry, physician assistant, nursing, or public health is yet another popular option.

Physical Sciences Career Areas

Actuarial Science, Aerospace, Analytical Chemistry, Applied Physics and Chemistry, Astrophysics/Astronomy, Bioscience, Computers, Data Science, Energy Science, Electronics, Engineering Applications, Environmental Science, Food Chemistry, Forensic Chemistry, Geoscience, Inorganic Chemistry, Instrumentation, Laboratory Science, Lasers, Materials Science, Medicine, Nuclear Science, Optical Devices, Organic Chemistry, Pharmacology, Physical Chemistry, Plasma Physics, Quality Control, Radiation Science, Radiology, Solid State Devices, Space Science, Statistics, Teaching

Graduates of the School of Physical Sciences have backgrounds appropriate to a variety of areas in research, teaching, and management. Career opportunities for physical scientists are found in federal, state, and local government as well as in private industry. Chemists may work in research and development and in jobs dealing with health, pollution, energy, fuel, drugs, and plastics. Water districts, crime labs, and major chemical and oil companies are also good resources for employment. Earth System Science and Environmental Science and Policy majors will find employment in areas such as hazardous waste treatment, resource extraction, pollution remediation, and as consultants to government and high-technology fields. Mathematics graduates find employment in both government and the private sector in such technical fields as operations research, computer programming, marketing research, actuarial work, banking, retail management, and scientific research. Physics and Applied Physics graduates find professional positions in education, research and development, and in the electronic and aerospace industries. Possible careers include science teaching and writing, computer and electrical engineering, device and instrumentation development, nuclear and reactor physics, environmental and radiological science, laser and microchip development, astronomy, and geophysics.

Public Health Career Areas

Global and International Health, Disease Prevention, Surveillance, Natural Disasters, Emergency Preparedness and Response, Environmental Health Science, Epidemiology, Health Behavior, Health Psychology, Health Economics, Engineering and Health, Health Policy Analysis, Health Care Management, Health Services Administration, Biostatistics, Health Communication, Health Informatics, Complementary and Alternative Medicine, Health Promotion, Health Demography, Health Insurance, Community Health, Health Risk Assessment, Forensics, Biotechnology, Vaccinology, Genetic Engineering, Health Geography, Health Education, Infectious Disease Prevention, Chronic Disease Prevention, Wellness, Clinical Trials, Urban Health, Rural Health, Water Quality, Nutrition and Food Protection, Air Quality and Health, Health Geology, Vulnerable Populations, Burden of Disease Assessment

The increase in human population, widening diversity of socioeconomic and cultural attributes, rapid mobility, and internet-enabled broadening of social networks are compelling reasons to pursue pursuing careers in public health. Government policies that affect access to health care resources may also influence our ability to prevent disease and promote health in populations. Graduates of the Joe C. Wen School of Population and Public Health are prepared for careers in research, teaching, and public health practice in private and public sectors. Challenges in public health require acquisition and ready deployment of fundamental knowledge and practical skills. Employment opportunities exist at city and county health care agencies, state departments of public health, national institutions such as the Centers for Disease Control and Prevention, and international agencies such as the World Health Organization. Private foundations and corporations employ public health graduates, including, for example, the Bill and Melinda Gates Foundation and various health insurance providers. Nonprofit organizations and community service groups also employ public health degree holders. Graduates who are interested in academic career tracks focusing on research and/or teaching will find employment at various units within public and private universities and think-tanks.

Social Ecology Career Areas

Administration, Architecture, Biostatistics, Clinical Psychology, Corrections/Probation, Counseling, Education, Educational Support Services, Environmental Design, Environmental Planning and Consulting, Epidemiology, Government Service, Health Service, Hospital Administration, Housing Development, Human Resources, Law, Management/Administration, Mental Health, Program Coordination, Psychology, Public Health Research, Public Relations, Real Estate/Development, Research and Research Design, Social Service, Teaching, Urban Planning, Water Quality Control

Graduates of the School of Social Ecology may hold positions as urban planners, environmental consultants, juvenile probation officers, counselors, elementary and secondary school teachers, legal aides, coordinators of juvenile diversion programs, social workers, mental health workers, special education teachers, architectural consultants, and elected officials, just to cite some examples of career choices. Many School of Social Ecology graduates have used their training to enter graduate programs and obtain advanced degrees in the fields of law; clinical, community, social, developmental, and environmental psychology; public health; public and business administration; environmental studies; urban planning; social welfare; criminology; and the administration of justice.

Social Sciences Career Areas

Banking, Correction/Probation, Counseling, Environmental Analysis, Finance, Foreign Service, Government Service, Health Services, Human Services, Industrial Relations, International Affairs, Labor Relations, Law, Library Science, Management/Administration, Marketing, Personnel, Psychology, Public Relations, Publishing, Real Estate, Research, Sales, Statistical Analysis, Teaching, Writing

Business and industry often look to social science graduates to fill positions in management, finance, marketing and advertising, personnel, production supervision, and general administration. In the public sector, a wide variety of opportunities are available in city, county, state, and federal government.

Teaching is a frequently chosen career at all levels from elementary school teacher to university professor. In addition, many graduates enter professional practice, becoming lawyers, psychologists, researchers, or consultants in various fields.