Donald Bren School of Information and Computer Sciences

School Overview

The Donald Bren School of Information and Computer Sciences (Bren School) embodies excellence, creativity and collaborative innovation in computer science and information technology. From its inception more than 40 years ago to its current status as the only independent computing school in the University of California system, the Bren School is well-positioned to continue its tradition of exploring and advancing the boundaries of a broad multidisciplinary field on a national and international scale.

The School offers a comprehensive set of undergraduate degree programs, each of which provide flexibility in tailoring the academic plan to best meet a student’s particular interests. A Bren School undergraduate education is a blend of scholarship, science, technology and practical application that forms an excellent foundation for professional life or graduate education.

Bren School graduates pursue a variety of careers. They specify, design and develop computer-based systems in many different domains, including biomedical, consumer, engineering, entertainment, environmental, finance, investment, law, management, manufacturing, education and pharmacology. Many also go on to careers in management, consulting, design and marketing.

Choices
We offer more than 100 courses covering a broad range of topics in depth.

Modern Majors
Seven streamlined majors for you to choose from, each carefully maintained to remain current.

Applied Learning
We encourage “learning by doing” – every major includes a number of capstone project courses where you work in a team to apply what you learned in the classroom.

Leadership
Many opportunities exist for you to learn about and practice your leadership skills.

Diversity
Learn with and from others whose backgrounds and experiences support, complement, challenge and expand your understanding of how to live and work in a multicultural society.

Faculty
Learn from top-notch researchers who earn industry honors as well as campus recognition for their excellence in teaching and mentoring students.

Undergraduate Research
Many Bren School faculty engage undergraduates in their groundbreaking research.

Honors Opportunities
The Bren School offers its own honors program in addition to UCI’s Campuswide Honors Program.

Entrepreneurship
Learn from successful ventures how you, too, can start your own company with your ideas.

You and Your Career
Over the next decade, the U.S. Bureau of Labor Statistics predicts almost 2 million new jobs in computing, with five of the top 10 fastest-growing jobs (and rising salaries) in computer science and information technology — just the kind of career for which the Bren School prepares you. Our alumni work at Pixar, IBM, Yahoo, NASA, Microsoft, Google, Blizzard, Broadcom and many other world-renowned organizations; many are key leaders within these companies.

To learn more about the Bren School visit http://www.ics.uci.edu/prospective

Undergraduate Degree Programs
[For each major, completion of requirements leads to a Bachelor of Science (B.S.)]

Business Information Management:
Offered jointly with The Paul Merage School of Business, this major lies at the intersection of computer science and information technology with business management. Students will receive a firm grounding in mathematics, statistics, software engineering and design, economics and business accounting, management science, and information technology. Most businesses are especially data-driven and use information technology to achieve their strategic analysis and decision-making goals. Students interested in learning how to adapt, create and use computer science principles and tools in various business environments are encouraged to explore this major.

Computer Game Science:
This major combines computer science with a focus on designing, building, and understanding computer games and other forms of interactive media. Students will receive a firm grounding in the fundamentals of computer science, as augmented with courses in film and media studies, mathematics, physics, and game technology. The major strongly emphasizes design, team work, and the understanding of computer games and related technologies and media in a social and cultural context. Students interested in learning the concepts and tools underlying computer games, and applying those concepts and tools to create their own, are encouraged to explore this major.

Computer Science:
The Computer Science major emphasizes the principles of computing that underlie our modern world, and provides a strong foundational education to prepare students for the broad spectrum of careers in computing. This major can serve as preparation for...
either graduate study or a career in industry. Students receive a solid background in low-level architecture and systems, middle-level infrastructure, algorithms and mathematical foundations. This is a highly flexible degree that allows students to explore a broad range of topics in modern computing. Students choose from one of eight specialization areas to achieve focus in their upper-division studies. Additional electives can be used to satisfy a second specialization or obtain a broader understanding of the field.

Computer Science and Engineering
Offered jointly with The Henry Samueli School of Engineering, this major offers a blend of computer science and computer engineering. The major has a strong orientation towards hardware, with courses such as circuit design, network design and digital signal processing. It also addresses the software techniques needed to make the hardware usable, with courses such as operating systems and embedded systems. Embedded devices increasingly drive innovation in consumer goods and products, and often are used in large quantities to form sensor networks that monitor the weather, environment, physical structures, etc. Students interested in learning how such devices are designed and constructed are encouraged to explore this major.

Informatics:
Students in this major learn how to design, develop, and evaluate software applications with a focus on how and where these will be used in the real world. Leveraging real-world examples and case studies throughout, students receive a firm grounding in software engineering and design, human-computer interaction, computer-supported collaborative work, information visualization, and the impact of information technology on organizations and society. We live in a digital society in which we continuously interact with and are driven by software. Students with an affinity for design and an interest in learning how to design effective and usable software systems are encouraged to explore this major.

Information and Computer Science
Note: Open as a change of major option to current UCI students only.
This major provides a broad overview of the topics covered in the other majors. Students who want a broad exposure, or who wish to combine some unique set of courses in their study plan, are encouraged to explore this major.

Software Engineering
The Software Engineering major gives students a strong foundation in software engineering as well as a solid basis in computer science. Students who complete the major will be able to be productive members of software engineering teams in a variety of application domains including, but not restricted to, Web and mobile applications. The acquired technical knowledge and appreciation for lifelong learning, combined with the ability to place software in the social context in which it is developed, empowers students to create novel applications that have the potential to bring social change.

ICS Undeclared Pre-Major (for freshmen only)
New freshmen who want to first explore their interests in computer science and information technology before committing to a specific major may apply as ICS Undeclared. This option allows freshmen all the benefits of being a Bren School student, including access to an academic counselor who will help you structure a first-year academic plan that includes a core set of lower-division computer science and math courses common to the majors.

Not Sure Which Major is Right for You?
Visit or call the Bren School undergraduate counselors in the Student Affairs Office, Information and Computer Science Building I, Suite 352, (949) 824-5156, or email at ucounsel@uci.edu. The counselors will help you explore the majors, and inform you about events for prospective students. The Associate Dean for Student Affairs is also available at adsa@ics.uci.edu to provide a faculty member’s perspective about the academic degree options and ways to best meet your academic, research and career goals.

Complementing the Bren School Undergraduate Experience
There are several ways to add depth, scope and experiential learning to your academic program of study. An academic counselor will help a student determine the most efficient way to add another major, minor, or concentration to his or her academic plan.

The Bren School of ICS Honors Program invites juniors and seniors to pursue advanced work in one of many research areas. Students participate in an honors seminar, conduct independent research under the guidance of a faculty member (for a minimum of two quarters), and write a research paper for review by the faculty advisor and the Honors Program advisor. Successful completion of the Bren School Honors Program earns the student a certificate and medal from the school, as well as special notation on the student’s transcript. More information is available at http://honors.ics.uci.edu.

Additionally, Bren School students may broaden their educational experience by participating in other programs for which they meet the eligibility guidelines. Examples include: Campuswide Honors Program, Education Abroad Program, UCI California Teach Initiative, UCI SAGE (Student Achievement Guided by Experience) Scholars Program, and Undergraduate Research Opportunities Program (UROP).

Career Exploration and Preparation
Bren School students have multiple career exploration and preparation opportunities; these include information sessions with industry and company representatives, and workshops on resume-building strategies, and interviewing and networking skills. Students learn about internship opportunities and full- or part-time positions through the School’s own employment listings program and through the UCI Career Center (www.career.uci.edu). Other Career Center services include: tool-based assessment, consultation with professional counselors, an On-Campus Interview Program, and graduate and professional school preparation.

State-of-the-Art Facilities and Computing Resources
Donald Bren Hall, completed in 2007, houses classrooms, faculty offices, research labs and meeting spaces designed to maximize the use of technology, promote faculty/student interactions and facilitate collaborative scholarly work.

The Bren School supports a wide range of instructional machines and several specialized labs for students’ use. All registered students have access to the resources provided by the Office of Information Technology (http://www.oit.uci.edu/), which includes open access computer labs and mobile internet access across most of the campus.