The Jack Baskin School of Engineering

In a rapidly changing world, the purpose of engineering remains constant: to use science to solve practical problems and improve people's quality of life. The world's challenges in energy, health, security and the environment require engineers who can apply knowledge and leverage technology to benefit society. The Jack Baskin School of Engineering offers a rich educational and research environment for both students and faculty, helping to ensure that current and future engineers are equipped to face new global challenges.

Making a world of difference. Learn more at soe.ucsc.edu.

Strategically Focused Curricula & Research

The Jack Baskin School of Engineering is known for interdisciplinary research and education formed from core departments of Applied Mathematics and Statistics, Biomolecular Engineering, Computer Engineering, Computer Science, Electrical Engineering and the Technology and Information Management Program. In order to help meet current and emerging global challenges, we are strategically building new interdisciplinary programs within these departments. These programs include:

Assistive & Rehabilitative Technology

As technology advances, so does our ability to help those with special needs. Our research in assistive and rehabilitative technology is making life richer for a larger population. Advances include computer vision for the blind through retinal prosthetics and robotic arms for stroke rehabilitation.

Bioengineering

At the intersection between biology, medicine and mathematics, bioengineering provides an opportunity to improve quality of life and advance global health. We specialize in bioinformatics, robotics, electronic instrumentation and therapies. Concentrations include biomolecular, bioelectronic and rehabilitation engineering.

Information & Communication Infrastructure

The world continues to demand advances in information and communications technology. We are meeting that demand with programs in computer security, networking and storage systems – areas that are key to increased performance of technological systems.

Mathematical & Statistical Modeling

Solving real-world problems of a scientific or decision-making nature often requires sophisticated methods for data interpretation, uncertainty quantification and modeling of complex systems.

Our programs in advanced dynamic models and Bayesian statistics are designed to provide the tools for insightful mathematical and statistical descriptions of such systems.

Games & Playable Media

Games are a new form of computational media, and a rapidly growing international industry. We are leaders in artificial intelligence, interactive narrative, natural language dialog, and computational cinematography, as applied to games.

Robotics & Control

Robots and robotic systems can impact and improve society on multiple levels. We combine systems engineering with mechanical design to advance theoretical and applied research in adaptive optics, autonomous robotic systems, and medical robotic systems.

Software & Services Engineering

We address a broad spectrum of software systems, from database management and networking support to data visualization, animation and computer gaming applications.

System Design

Key to meeting the demand for next-generation technology is the ability to design computer systems that are more efficient and have increased data processing capabilities and storage. Our research emphasizes low-power, thermal-aware, reliable systems.
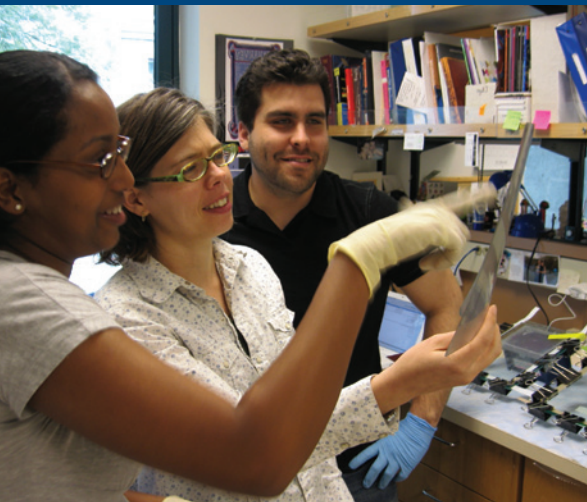
Jack Baskin School of Engineering... At A Glance

Undergraduate Majors & Minors

Applied Mathematics (minor)

Bioengineering (B.S.)

Bioinformatics (B.S., combined B.S./M.S., combined B.S./Ph.D., minor)

Computer Engineering (B.S., combined B.S./M.S., minor)

Computer Science (B.A., B.S., minor)

Computer Science: Computer Game Design (B.S.)

Electrical Engineering (B.S., minor)

Information Systems Management (B.S., minor)

Robotics Engineering (B.S.)

Statistics (minor)

Graduate Programs

Bioinformatics and Biomolecular Engineering (combined B.S./M.S., combined B.S./Ph.D., M.S., Ph.D.)

Centers as Infrastructure for Innovative Discovery

Our School's strategy has been to promote major innovative research efforts by incubating and launching new research centers. These centers have created a rich ecosystem of partnerships among academia, industry and government, resulting in emerging preeminence as a leading engineering school for the 21st century. Following is a partial list of centers:

Center for Biomolecular Science & Engineering (CBSE)

CBSE is home to interdisciplinary research in biology, chemistry and engineering, where scientists explore new biological and biomedical frontiers in genome sequencing, bioinformatics, computational biology and proteomics.

Center for Games & Playable Media

This Center's mission is to create new technologies and design approaches that will enable games of the future. It houses the School's five game-related research labs, including the Expressive Intelligence Studio, one of the largest technical game research groups in the world.

Center for Information Technology Research in the Interest of Society (CITRIS)

Leveraging IT as a central component, researchers in CITRIS are focused in the areas of health care, environmental monitoring and education.

W. M. Keck Center for Nanoscale Optofluidics (CfNO)

This state-of-the-art nanofabrication facility is instrumental in developing devices that integrate microfluidics technology with high-sensitivity optical detection. Applications include detection of small numbers of pathogens for medical diagnostics and biothreat detection.

Genome Sequencing Center

Researchers in the Genome Sequencing Center use high-throughput sequencing and bioinformatics to understand genetic variation and its function in health, disease and biological systems.

Storage Systems Research Center (SSRC)

SSRC faculty and students collaborate with Silicon Valley industry and the National Laboratories to conduct advanced research to secure data storage, indexing and search, cloud computing, file systems, reliable data storage, data deduplication and future storage technologies.

The Center for Research in Intelligent Storage (CRIS)

CRIS is a research partnership between universities and industry with the goal of direct transfer of university-developed ideas, research results and technology to U.S. industry to improve its competitiveness in world markets.

Center for Sustainable Energy & Power Systems (CenSEPS)

CenSEPS research in clean energy technology will facilitate a transition toward sustainable forms of energy. Research platforms include systems testbeds for co-optimization of energy generation, distribution and consumption; and sensor networks and intelligent infrastructure for energy systems.

Center for Stock Assessment Research (CSTAR)

Work at CSTAR focuses on using mathematical, statistical and computer models to solve important environmental and ecological problems associated with commercially important fish species.

Computer Engineering (combined B.S./M.S., M.S., Ph.D.)

Computer Science (M.S., Ph.D.)

Electrical Engineering (M.S., Ph.D.)

Graduate Training Program in Biomedical Sciences & Engineering (see pbse.ucsc.edu)

Statistics & Applied Mathematics (M.S., Ph.D.)

Technology & Information Management (M.S., Ph.D.)

Student Life

Association for Computing Machinery (ACM)

Biomedical Engineering Society (BMES)

Entrepreneurial program

Honors program

Institute of Electrical and Electronics Engineers (IEEE)

Multicultural Engineering Program (MEP)

National Society of Black Engineers (NSBE)

Society of Hispanic Professional Engineers (SHPE)

Society of Women Engineers (SWE)

Study abroad

Tau Beta Pi Engineering Honor Society (TBP)

Undergraduate research programs

...By The Numbers

90
FACULTY
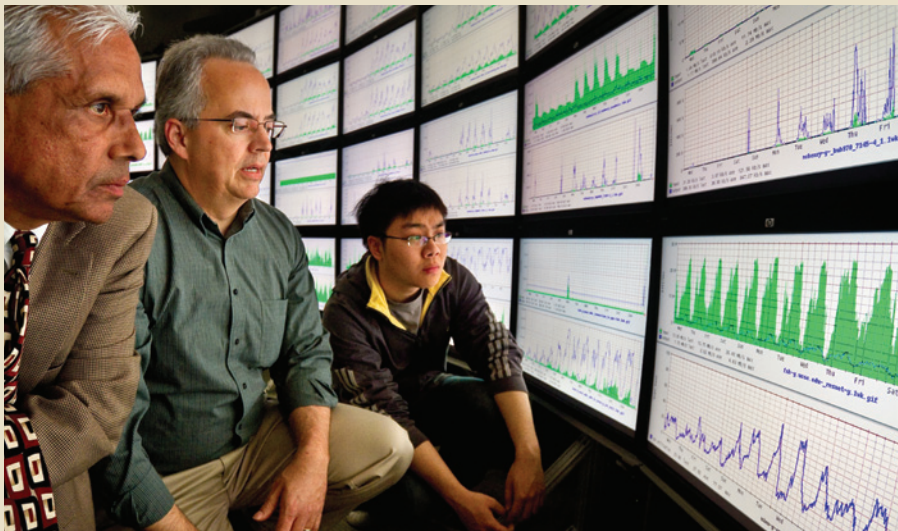
1,042
UNDERGRADUATE STUDENTS

346
GRADUATE STUDENTS

Source: UCSC Bird's Eye View.

Academic year 2009-10.

UNIVERSITY OF CALIFORNIA
SANTA CRUZ

Learn More

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