Consider transferring to the **Jack Baskin School of Engineering**

*at the University of California, Santa Cruz*

**Why Engineering?**

It’s **exciting** because it’s about the future.

It’s **fulfilling** because you’re intellectually challenged and well-positioned to contribute to society.

It’s **important** because it gives you the tools for creating new technology.

There are about 1.5 million engineering **jobs** in the United States, and that number is projected to grow.

Engineering majors pursue careers in a **variety** of fields, not just engineering.

The field is becoming increasingly **diverse**, in terms of people and the application of the degree.

Engineering professionals emphasize **integration** with other corporate functions and activities.
Are you interested in finding the path from community college to a rewarding career involving technology, creativity, and leadership? Are you enjoying your studies in math and science but not sure how to apply them to the work you choose?

The Jack Baskin School of Engineering Offers Programs and Degrees in Six Academic Departments:

**APPLIED MATHEMATICS AND STATISTICS**
[www.ams.ucsc.edu](http://www.ams.ucsc.edu)
- Applied Mathematics and Statistics: M.S., Ph.D.
- Undergraduate Minor in Applied Mathematics
- Undergraduate Minor in Statistics

The Department of Applied Mathematics and Statistics focuses on modeling the world around us in order to solve real-world problems. The department uses an interdisciplinary approach to applications such as environmental analysis, risk assessment, and quality assessment in health and education, epidemiology, and astrophysics.

**BIOMOLECULAR ENGINEERING**
[www.bme.ucsc.edu](http://www.bme.ucsc.edu)
- Biomolecular Engineering and Bioinformatics: M.S., Ph.D.
- Bioinformatics: B.S., B.S./M.S.
- Bioengineering: B.S.
- Undergraduate Minor in Bioinformatics

Bioengineering focuses on the application of engineering tools and techniques to the problems of medicine and biological sciences. The field of bioinformatics combines mathematics, science, and engineering to explore and understand biological data from high-throughput experiments such as genome sequencing and gene expression chips.

**COMPUTER ENGINEERING**
[www.ce.ucsc.edu](http://www.ce.ucsc.edu)
- Computer Engineering: B.S., B.S./M.S., M.S., Ph.D.
- Bioengineering: B.S.
- Network Engineering: M.S.
- Undergraduate Minor in Computer Engineering
- Undergraduate Minor in Computer Technology

Computer engineering focuses on the design, analysis, and application of computers and on their applications as components of systems. Areas of research include VLSI design and packaging; CAD; high-speed network design; network protocol design; field programmable gate arrays; robotic systems; parallel computation; image processing; storage, retrieval, and transmission; and computer architecture.

**COMPUTER SCIENCE**
[www.cs.ucsc.edu](http://www.cs.ucsc.edu)
- Computer Science: B.A., B.S., M.S., Ph.D.
- Computer Science: Computer Game Design: B.S.
- Undergraduate Minor in Computer Science

Computer science is the study of the theoretical and practical aspects of computer technology and computer usage. Areas of research include analysis of algorithms, artificial intelligence, machine learning, computer graphics, computer animation, scientific visualization, computer vision, programming languages, software engineering, real-time systems, computer security, databases, parallel and distributed computation, operating systems, storage systems, and computer game design.

**ELECTRICAL ENGINEERING**
[www.ee.ucsc.edu](http://www.ee.ucsc.edu)
- Electrical Engineering: B.S., M.S., Ph.D.
- Bioengineering, B.S.
- Undergraduate Minor in Electrical Engineering

Electrical engineering is a broad discipline that addresses the design and understanding of devices, circuits, and systems that use electro-magnetic waves in electronic or optical signals for applications as varied as biomedical devices, astronomical telescopes, renewable energy systems, single molecule detection, cellular and wireless network technology, image processing, and next-generation computing devices.

**TECHNOLOGY AND INFORMATION MANAGEMENT**
[www.tim.ucsc.edu](http://www.tim.ucsc.edu)
- Technology and Information Management: M.S., Ph.D.
- Information Systems Management: B.S.
- Undergraduate Minor in Information Systems and Technology Management

Information systems management (ISM) is the application of information technology to support the major functions and activities of either a private-sector business or public-sector institution. The ISM program combines the intellectual content of computer science with that of business management economics.
Nanopore image used by UCSC researchers shows a double-stranded DNA molecule superimposed on the channel of the nanopore.

Dr. Jacob Rosen models the Exoskeleton prototype.

**ASSISTIVE TECHNOLOGY** Associate Professor of Computer Engineering Jacob Rosen is an expert in medical robotics and has developed a prototype of wearable exoskeleton arms that can be used for rehabilitation and physical therapy for people disabled by stroke or degenerative diseases. Dr. Rosen’s work is part of the undergraduate bioengineering program, and is expanding the undergraduate and graduate offerings in robotics as well as in assistive and rehabilitative technology.

**GENOME RESEARCH** The National Human Genome Research Institute (NHGRI) has awarded a $1.1 million grant to researchers in the Baskin School of Engineering to support their work on nanopore technology for analyzing DNA. This work is led by biomolecular engineers Mark Akeson and David Deamer. “Some of the most promising work we do is coming from the undergraduates in our group,” Akeson said. “One of our laboratories and four of our state-of-the-art nanopore devices are currently devoted to experiments by these students.”

**COMPUTER GAME DESIGN** Baskin Engineering Associate Professor of Computer Science Michael Mateas was recently selected as the first holder of the MacArthur Foundation Chair at UC Santa Cruz. Dr. Mateas’s research in computer gaming combines artificial intelligence, game design, and art, and pushes the frontiers of interactive entertainment and pioneering new models of training. His work aims to transform gaming into a key expressive medium throughout society.


**RENEWABLE AND SUSTAINABLE ENERGY** Professors of Electrical Engineering Ali Shakouri and Nobby Kobayashi are driving Baskin Engineering’s research and development of alternative and sustainable technologies. Their work explores direct energy conversion systems, nano-structured material and device design, and solid-state thermionic energy conversion components and systems. Baskin Engineering continues to expand its offerings in renewable energy technologies, as well as an international exchange program.

UCSC faculty lead the Thermionic Energy Conversion MURI Center, in collaboration with researchers at UC Berkeley, Harvard, MIT, Purdue, NCSU, and UCSB.

“Transferring to Baskin Engineering allowed me to expand my knowledge in engineering by getting involved in hands-on design projects as well as the opportunity to do research with the professors in the school of engineering. I highly recommend Baskin Engineering at UCSC because of their friendly advisors and dedicated professors, as well as their impact in future technology.”

David Alvarado, ’09 B.S. Electrical Engineering Transfer from DeAnza College

**Why the Jack Baskin School of Engineering at UC Santa Cruz?**

Founded in 1997, the Jack Baskin School of Engineering at UCSC prepares technologists and sponsors technology for our changing world. Baskin Engineering faculty conduct industry-leading research that is improving the way the world does business, treats the environment, and nurtures humanity.
Preparing for a Successful Transfer Into Baskin Engineering To Do Before You Apply:

All Baskin Engineering majors require a rigorous course of study to earn the degree. It is essential to take the requisite courses in mathematics, engineering, and science to prepare for upper-division course work at the university level before you apply for transfer. You must complete the following foundation courses to be considered for admission to Baskin Engineering:

- a year of calculus, equivalent to Mathematics 19A-B
- linear algebra; differential equations
- a year of calculus-based physics courses equivalent to Physics 5A, 5B and 5C
- two programming courses equivalent to Computer Science 12A, Computer Science 12B, or Computer Engineering 12/L.

For additional major specific preparation courses visit www.assist.org.

UNDERSTAND UCSC ADMISSIONS AND ELIGIBILITY REQUIREMENTS

If you want to pursue an engineering major at Baskin Engineering, you must first meet UCSC admissions requirements for transfer students and the Baskin Engineering admissions requirements.

When You’re Ready: UCSC Admission Requirements

The admission and selection process for transfer students to UCSC reflects the academic rigor and preparation needed for admission to a major research institution. Transfer student admissions requirements are different for California residents than for non-California residents. Admissions requirements for both California and non-California residents can be found by visiting: http://admissions.ucsc.edu/apply/transfer_guide.cfm.

Baskin Engineering Eligibility Requirements

Baskin Engineering encourages applications from transfer students. If you are a potential engineering student, here are a few points to consider:

Acceptance into Baskin Engineering is based on your overall college academic record, especially your grades in the individual foundation courses for your major. Baskin Engineering has a prerequisite structure for upper-division courses, so if you plan to transfer, you should complete as many of the lower-division requirements as you can.

Baskin Engineering requires letter grades on every transfer course you use to meet a foundation requirement.

You will need to complete more mathematics and engineering courses prior to transfer than the Intersegmental General Education Transfer Curriculum (IGETC) requires. As an engineering major, completion of major foundation courses is more important than completing IGETC.

Junior level transfer students applying to a Baskin Engineering major will be reviewed by department faculty as part of the admissions process. If you have completed 60 or more transferable semester units (or 45 transferable quarter units) you must indicate a Baskin Engineering major as your first choice or alternate major on the UC application. Students who do not indicate a Baskin Engineering major at the time of application will not be considered for admission after you have been accepted for transfer to UCSC.

Tips and Tools for a Successful Transfer

Important Tips

- California community college students receive priority consideration for transfer. UCSC gives junior-level community college students first priority over other transfer applicants—including those from four-year institutions and UC’s own intercampus transfer students.
- UCSC does not accept students who have completed 90 UC-transferable semester units (135 quarter units) or more from a combination of two-year and four-year institutions. If you have earned all of your credits from community college, you are not affected by this limit because UC grants a maximum of 70 semester (105 quarter) units in transfer from community college.
- UCSC selects eligible transfer students who have met and exceeded the eligibility requirements. With careful planning, you can select courses that will satisfy these requirements.
- All courses required for admissions eligibility and a minimum of 60 transferable semester (90 transferable quarter) units must be completed by the end of your spring term prior to fall enrollment at UCSC. Calculating your unit count may require some conversion between semester and quarter units. To convert semester units to quarter units, multiply the semester units by 1.5.

Important Tools

- Use the ASSIST database to help you select courses that will be transferable and satisfy lower-division course requirements. ASSIST is an online resource that is your information system for how to apply the credits you’ve earned at one public California college or university to another. www.assist.org
- Visit the Transfer Center at your community college early and often to learn about the resources available to assist you in the transfer process.
Baskin Engineering Selection Requirements and Review Process

Transfer applicants for a school of engineering major must indicate their interest on the UC application for admission.

You’ll be asked to complete and submit a supplemental application detailing your completed foundation courses.

The faculty reviews the supplemental applications, and they will determine whether you are approved, conditionally approved, or declined for the major.

When you are approved for acceptance and have course credit for all the foundation courses of your major, you must declare that major in your first term of enrollment at UCSC.

If you are conditionally approved, you will be evaluated based upon your performance in the foundation courses during your first term at UCSC. You should prepare to declare an alternate major outside the school of engineering in the event that you are unsuccessful in completing the remaining foundation courses.

If you are denied admission to Baskin Engineering, you may still be admitted to UCSC, but will have to pursue a major outside of the school of engineering.

HOW TO APPLY

UCSC accepts transfer students for fall quarter enrollment and in some years, for winter quarter enrollment also. (Please check with the Office of Admissions.) You must file the UC Application online to be considered.

Fall quarter admission applicants must file an application between November 1–30.

There is a non-refundable application fee. A fee waiver is possible depending upon family income and size, and you can apply within the online application.

Please visit admissions.ucsc.edu/apply/transfer_guide.cfm for more information about applying to UC Santa Cruz as a transfer student.

EASE THE WAY TO YOUR ENGINEERING DEGREE AT UCSC

Transfer Admission Guarantee Program

The Transfer Admission Guarantee Program (TAG) offers guaranteed admission to qualified junior-level transfers from any of California’s 110 community colleges that have chosen to participate. Baskin Engineering requires a special review in addition to the following points:

- You must have completed a minimum of 30 UC-transferable semester units, have earned a GPA of at least 3.0, and have registered at one of the participating community colleges.
- If you have completed 20 semester units at a four-year college or university, you’re not eligible for this program.
- Admission is guaranteed for the fall quarter only.
- You must file your TAG application between September 1-30.

WHAT TO EXPECT WHEN YOU TRANSFER

Baskin Engineering and UCSC want to help you make a smooth and successful transition from community college into a four-year engineering degree program. To assist you in the transfer process, Baskin Engineering provides a number of support programs and services both before and after you transfer.

Before you arrive at Baskin Engineering, you can take advantage of several programs and resources:

- Pre-application advising
- Academic advising and course planning assistance
- Engineering tours and information sessions offered seasonally
Campus directory
Admissions (admissions.ucsc.edu)................................. (831) 459-4008
Admissions (en español)............................................. (831) 459-2594
Disability Resource Center (www2.ucsc.edu/drc)............. (831) 459-2089
TDD/TTY ..................................................................... (831) 459-4806
Financial Aid and Scholarship Office (financialaid.ucsc.edu) (831) 459-2963
Housing Services (housing.ucsc.edu)............................... (831) 459-2394
Services for Transfer and Re-Entry Students (stars.ucsc.edu) (831) 459-2552

UCSC PROGRAMS AND SERVICES
After you have successfully gained admission into Baskin Engineering, there will continue to be a number of resources to help you make a successful academic and personal transition into Baskin Engineering and UC Santa Cruz. A sample of the resources available to you include the following:

- Academic advising, transcript evaluation, and pre-course enrollment advising
- Engineering Orientation Program
- Campus Orientation Programs
- Faculty and peer advisors
- Educational Opportunity Programs (EOP)
- Disability Resource Center (DRC)
- The Career Center
- Counseling and Psychological Services
- Residential learning communities
- Services for Transfer and Re-entry students

For more information about these programs, visit http://ua.soe.ucsc.edu/

BASKIN ENGINEERING STUDENT COMMUNITY
Baskin Engineering is a vibrant community of scholars and students focused on technology and its applications to every human endeavor. Undergraduate engineering students benefit from a variety of events and organizations specifically for engineering students. Examples include:

- Faculty-undergraduate lunches
- Undergraduate research opportunities
- Engineering student organizations like:
  - Association for Computing Machinery (ACM)
  - Institute for Electrical and Electronic Engineers (IEEE)
  - Information Systems Management Association (ISMA)
  - Multicultural Engineering Program (MEP)
  - National Society of Black Engineers (NSBE)
  - Security Santa Cruz
  - Society of Hispanic Professional Engineers (SHPE)
  - Society of Women Engineering (SWE)
  - Tau Beta Pi: Engineering Honor Society

This engineering brochure for transfer students is made possible through a grant from the National Science Foundation.