

WHY CHOOSE

UNIVERSITY OF CALIFORNIA SANTA BARBARA

CHEMICAL ENGINEERING

THE CONVERGENCE OF EDUCATION AND ENGINEERING

In naming UCSB one of its 25 "hottest colleges," *Newsweek* states "If there's a more beautiful campus than this one at the edge of the Pacific, we haven't seen it..."



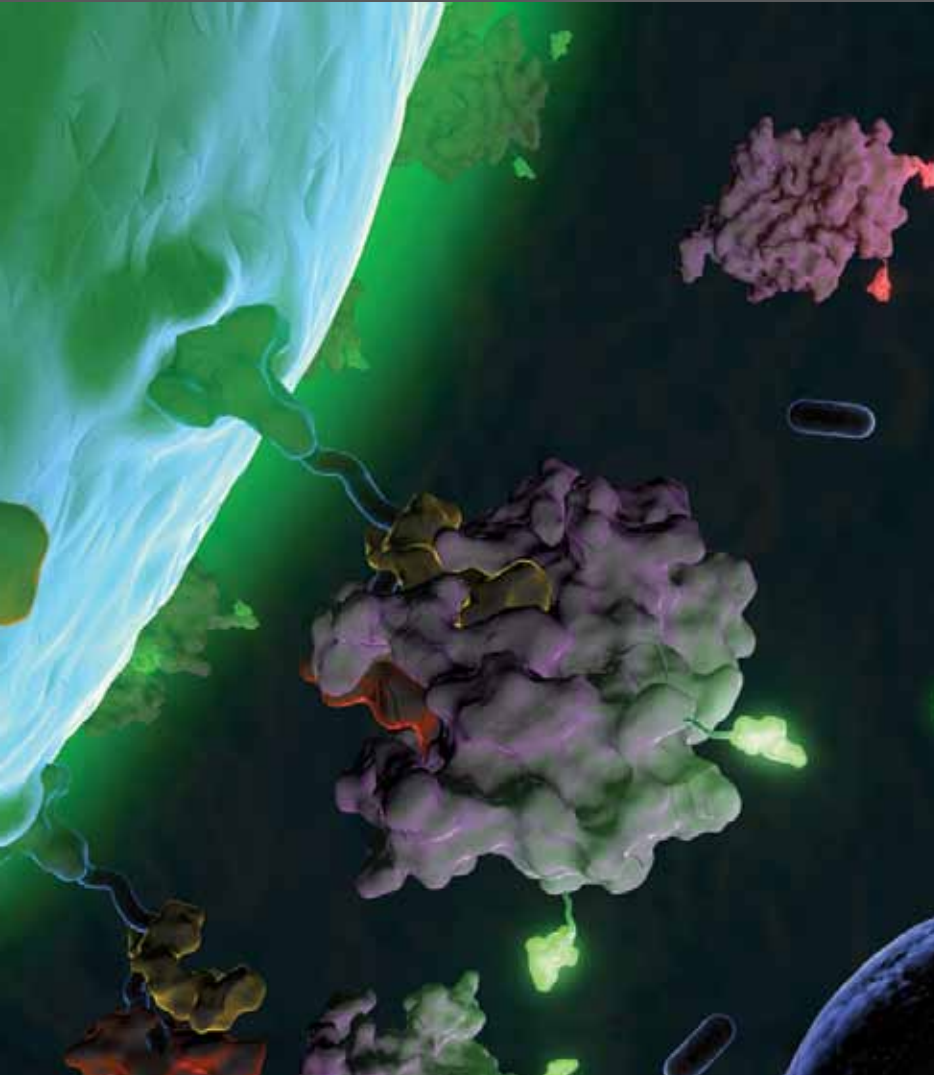
WHY STUDY CHEMICAL ENGINEERING?

Do you like problem solving and making things work? Are you interested in chemistry, math, and computers? If you answered yes, then Chemical Engineering may be for you.

It is an exciting time to be a chemical engineer. We live in a society where the benefits of technology are readily apparent: computers, the internet, medical technology, and a dazzling array of consumer products. But our society must address critical issues that involve energy, the environment, national security, and health care delivery. Because our curriculum includes advanced chemistry and bioscience courses, chemical engineers are uniquely qualified to help solve these important problems.

why choose U.C. Santa Barbara

“...For many students, that would seal the deal, but UCSB also boasts Nobel Prize winners on its faculty, top research centers in science and technology and an extensive study-abroad program.”



WE ARE QUALIFIED

Chemical Engineering undergraduates receive the finest engineering education, including:

- The Department of Chemical Engineering is ranked 9th in the U.S., and 2nd among UC schools, by *U.S. News and World Report*
- Distinguished faculty and an excellent student to faculty ratio (10 to 1)
- State-of-the-art curriculum and modern laboratories
- Wide variety of elective courses
- UC Education Abroad program (in 35 countries)
- BS/MS program options in Materials or Economics
- Research opportunities with 21 engineering research centers
- Accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012
phone: (410) 347-7700

Chemical Engineering

why I chose...



Shannon Murphy: Entered as a Freshman

What made you choose UCSB as your engineering destination?

There were a lot of colleges, mostly in California, that I was looking at before choosing UCSB. At first I just wanted to stop by UCSB because it's a beautiful area, but when I came to UCSB after visiting other campuses, I realized that this campus offered some things that other campuses didn't. As I walked around, I got the feeling that the students and faculty were truly happy to be here, unlike other campuses, and were very willing to help me out. I also got one-on-one attention with staff advisors and a faculty member during my very first visit, so I was pretty much sold on UCSB after that visit.

What do you like most about your major and the courses that you've taken so far?

My favorite thing about chemical engineering is the endless possibilities that come with such a degree. The Chemical Engineering Department here understands the impact that we will make when we graduate, so they try very hard to help us succeed. I really like that it's a relatively small department so you get one-on-one contact with your TAs and Professors. All of our professors know us by name, and we feel comfortable going into their offices and talking with them. Since the class sizes are small, I know everyone else in my major, so it is easier for us to collaborate on projects. The students and faculty both foster a very comfortable and successful learning environment.

Is there something that you wished you knew in high school about college that you could pass along to prospective students?

I wish I was better at time management, although that's one of the things you learn as you go through college. I came to UCSB without knowing anyone, so I had to get out of my comfort bubble to make new friends. I did the Freshman Summer Start Program, a program where you come to UCSB during summer session, take a few classes, and become familiar with college life before all of the stress of the fall quarter. It turned out to be a great decision, a ton of fun, and that is where I've made most of my life-long friends.

What kinds of things have you participated in to enrich your education while at UCSB?

There are a lot of different programs that you can become involved with here, such as academic clubs like the American Institute of Chemical Engineers and Tau Beta Pi, the national engineering honor society. I also studied abroad at the University of Edinburgh in Scotland during my junior year. It was one of the most enriching experiences that I've had.

How do you balance your academic and personal life at UCSB?

Our motto here at UCSB is "work hard, play hard." It's a given that you will be working hard as an engineer, and there will be many late nights of programming and studying. But it's good to know that after all that hard work there is the gorgeous weather and friendly people to relax and have fun with. Having a place like Isla Vista to live in enriches the whole college experience and I feel lucky to live here. I mean, how many people can say that they live on the Pacific Ocean with all of their closest friends less than a mile away?

what's going on...

ARE YOU IN DEMAND?

Starting salaries for the class of 2008
Chemical Engineering National Average*
UC Santa Barbara:

\$63,165

\$67,625

Chemical engineers are expected to have employment growth of 8% over the next decade, according to the United States Bureau of Labor Statistics. Most employment growth for chemical engineers will be in service-providing industries such as professional, scientific, and technical services, particularly for research in energy and the developing fields of biotechnology and nanotechnology. According to our recent surveys, **UCSB Chemical Engineering students have higher starting salaries than the national average.**

* According to the 2008 National Association of Colleges and Employers

Education Highlights

BS/MS Programs

Outstanding students can earn a baccalaureate and master's degree in 5 years.

Engineering Honors Program

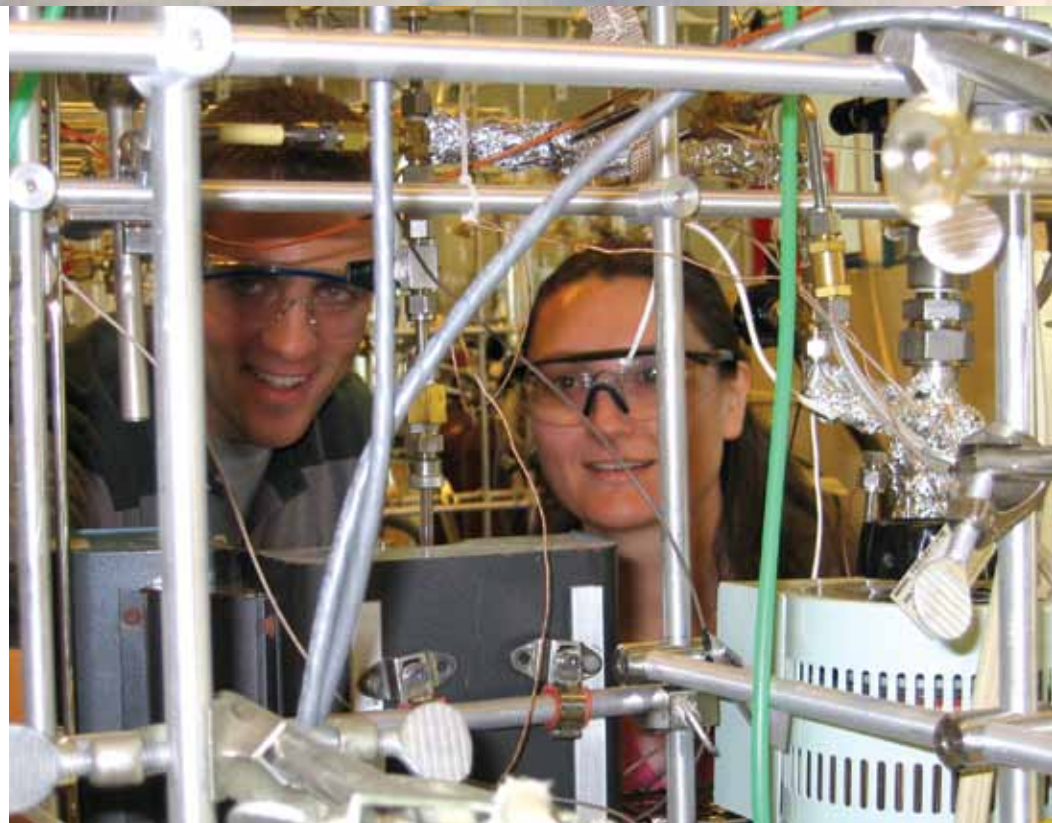
Privileges include: priority registration, residential housing scholars floors, research opportunities, and honors courses. The College also has a chapter of Tau Beta Pi, the national engineering honors society.

Research/Internships

Many opportunities exist for undergraduates to be involved in research and receive either course credit or a salary.

Professional Societies

Active student chapters of professional societies include the American Institute of Chemical Engineers, the Society of Women Engineers, and Engineers Without Borders.



Student Justin Butler performs research on new catalysts with Professor Susannah Scott

Special Programs

The College coordinates a diverse range of programs for student support, including mentoring, tutoring services, study skills workshops, and career planning. We also partner with the MESA Center on campus, which offers special services to first-generation college students.

Scholarships

Numerous scholarships are available to continuing students in the college.
www.engineering.ucsb.edu/current_undergraduates/scholarships

Entrepreneurial courses

The Technology Management Program provides classes in management, entrepreneurship, and marketing where students can earn a Technology Entrepreneurship Certificate.
www.tmp.ucsb.edu

what you do...

Solving Real World Problems

Chemical engineers are basically problem solvers. We develop processes that transform raw materials into useful products. Because of our broad technical background, chemical engineers are employed in a wide variety of industries that include: chemical manufacturing, energy conversion, plastics, biotechnology, pulp and paper, and semiconductor processing. Others are employed by government agencies and consulting firms. In mid-career, a chemical engineer might start his or her own company.

As a chemical engineer, you might:

- create new catalysts for alternative energy sources such as biodiesel
- develop improved techniques for detecting dangerous substances
- design pharmaceutical processes for promising new drugs
- develop processes with reduced greenhouse gas emissions

What you will study in Chemical Engineering

- Freshmen are introduced to the practice of Chemical Engineering in their first term at UCSB.
- Students are exposed to a balance of fundamental theories and principles in science and engineering with the practical skills necessary to apply them. A broad selection of technical electives encourage students to pursue special interests in biotechnology, health care, materials science, energy and the environment.
- Chemical Engineering majors compliment their classroom education by participation in research, industrial internships, membership in professional societies, and by studying abroad. They participate in a variety of competitions and conferences furthering their engineering knowledge and making valuable connections in industry.

Oh, the places you can go...

Education Abroad Program

The College encourages its students to participate in the U.C. Education Abroad Program to enhance their educational experience. Participants stay registered at UCSB while abroad and make timely progress towards their degrees. Nearly all participants say their EAP experiences were life-changing, career-enhancing, and the highlight of their education.

<http://eap.ucsb.edu>

“EAP was an experience of a lifetime: you come away with memories and friendships that will stay with you forever. It truly was one of the best things I have ever done!”

Shannon Murphy – Chemical Engineering major
EAP Student at University of Edinburgh, United Kingdom



why I transferred...

Antonio Ortiz
Transfer Student

What made you choose UCSB?

The proximity of a top-ranked Chemical Engineering institution near my home was definitely the leading factor for me choosing UCSB. I attended Ventura College and came in as a junior transfer.

Have you participated in any summer programs?

Last year I did a summer research internship at UCSB's California NanoSystems Institute through their Internships in Nanosystems Science, Engineering and Technology (INSET) program. I did research on multiple sclerosis as part of the eight-week program working with a mentor under a UCSB Professor. The weeks of research culminated in a presentation to UCSB students and faculty.

What activities did you participate in to enhance your education prior to coming to UCSB?

Prior to coming to UCSB I was involved in many activities at Ventura College. I was part of the executive board of two organizations, the Society of Hispanic Professional Engineers and the Society for the Advancement of Chicanos and Native Americans in Science, as well as an active member in the MESA Program. The benefits for participating in those programs were opportunities to practice and hone my leadership and time-management skills. I established a network and made new friends while learning to balance work, life, and fun.

What would you tell a student preparing to transfer to a major research institution in an engineering field?

Follow assist.org and meet with the transfer advisor that visits your community college. Pursue research internships geared for community college students like EPSEM and INSET, both give you insight into the university culture and afford you the opportunity to determine if performing research is your cup of tea. Lastly, be prepared to kick it up a couple notches. You are not at your community college anymore so be prepared to really work.

What are your future plans?

My plans are to earn a masters degree in Business Administration with an emphasis in entrepreneurship. I plan on taking advantage of the Technology Management Program here at UCSB, because somewhere down the line I'd like to manage my own business. For my short-term plans, I've recently secured an internship at Raytheon, so I'm very excited about that.



Admissions

The College of Engineering seeks to enroll well-prepared students who exceed UC's minimum academic requirements, students who will bring passion, creativity and dedication to their college experience.

Given the strength of its programs and its national reputation, it is not surprising that UCSB's College of Engineering receives applications from more qualified students than can be admitted. Each applicant must apply to a specific major, and those with the strongest qualifications are admitted. The exact level of performance required to gain admission to the College varies from year to year and from major to major depending on the size and quality of the applicant pool and the number of available enrollment spaces. The College accepts applications for the fall term only and gives preference to freshmen and upper-division transfer students (those who have completed at least 90 transferable quarter units).

High School Preparation

When admitting freshmen, the College considers: GPA in college preparatory courses and standardized test scores (with an emphasis on mathematics grades and scores); completion of coursework beyond the university's A-G requirements; advanced placement; and honors courses, especially in science and mathematics. For more information about applying to UCSB as a freshman see: www.admissions.ucsb.edu/

SAT Reasoning Test (or ACT plus Writing) and two SAT Subject Tests

UC A-G courses:

- A. Two years of history or social science
- B. Four years of college-preparatory English
- C. Three years of mathematics (four years recommended) to include pre-calculus or calculus
- D. Two years of laboratory science (three years recommended) to include two of the following: biology, chemistry or physics
- E. Two years of language other than English (three years recommended)
- F. One year-long approved arts course from a single discipline (dance, drama, music or art)
- G. Two semesters of college-preparatory electives beyond the requirements above

For course information specific to your California High School see: <https://doorways.ucop.edu/list/>

Opportunities to get a head-start on your freshman year:

UCSB offers many opportunities for incoming students, from the Freshman Summer Start Program where students can get an early start on classes, to summer bridge programs which offer hands-on work with scientific research projects. For a complete list of summer opportunities, see: www.engineering.ucsb.edu/prospective_undergraduates/summerop_fresh



Transfer Preparation

For general University of California Transfer Admissions information, please see: www.universityofcalifornia.edu/admissions/undergrad_adm/paths_to_adm/transfer.html

California Community College students should refer to www.assist.org for course articulations and information on the California Community College Transfer Admissions Guarantee.

Required Courses:

One year calculus for engr.	Three semesters calculus-based physics
Differential equations	One year general chemistry and labs
Linear algebra	One year organic chemistry and labs
Vector calculus	MATLAB®

When admitting transfer students, the College of Engineering considers the amount of preparatory coursework completed, grades earned in those courses, and cumulative transferable GPA. Consequently, transfer students should focus on completing all engineering preparatory courses offered at their college with the best grades possible and then finishing their General Education requirements after matriculation to UCSB. IGETC is not recommended for this major. Successful recent transfer applicants to engineering majors at UCSB had completed more than 75% of the preparation for the major courses with a GPA of 3.0 or above. **The average time to degree for an engineering transfer student at UCSB is 2.5 to 3 years.**

Opportunities for transfer students:

- Shorten your time to degree by attending UCSB the summer before you begin your first fall quarter as a transfer student
- Participate in the Summer Transitions Program for new transfers
- Engage in scientific research through a summer enrichment program

For a complete list of transfer student opportunities, see: www.engineering.ucsb.edu/prospective_undergraduates/summerop_trans

College of Engineering Transfer Admission Advising

admissions@engineering.ucsb.edu
(805) 893-6139

Need More Information?
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