

WHY CHOOSE

UNIVERSITY OF CALIFORNIA SANTA BARBARA

MECHANICAL 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 MECHANICAL ENGINEERING?

Does energy fascinate you? Do you like to fix or improve parts and machines? Do you have – or want – a great tool collection? Do you question why one design works better than another? If you answered yes, then Mechanical Engineering may be your field.

Mechanical Engineering applies the principles of motion, energy, and force to create mechanical solutions. They build tools, machines, and other devices that make life easier and better. Mechanical Engineering incorporates a broad range of expertise from technical, social, environmental, and economic fields, and is considered to be the jack-of-all trades among the engineering professions.

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

Mechanical Engineering undergraduates receive the finest engineering education, including:

- Campus ranked 12th for best public university by *U.S. News and World Report*
- State-of-the-art teaching and research laboratories
- Excellent student to faculty ratio (12 to 1)
- True four-year programs
- Opportunities for participation in student design competitions in nationally recognized events
- Balanced emphasis on engineering education and hands-on design activities
- Research opportunities through 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

Mechanical Engineering

why I chose...



Eric Martin: Entered as a Freshman

Why did you choose to study at UCSB?

I chose UCSB for multiple reasons, the first being I was aware of its upcoming prestige as an engineering institution, and secondly, one of my neighbors went here and she totally raved about it. I guess it didn't hurt that it's right on the ocean too.

What has been one of your favorite experiences in studying at UCSB?

Studying engineering here at UC Santa Barbara, you have the benefit of courses taught by Professors, not Lecturers. You get to know everyone in your class and your class level, and after four years of that, you build this camaraderie. It's almost like that high school feel where you are comfortable in your surroundings after spending so much time there, and with comfort comes your ability to strive and excel in what you are studying and learning.

Have you participated in any activities to enhance your education?

To take advantage of my engineering education, other than participating in various clubs on campus (engineering or non-engineering related), I have studied abroad twice. I spent a summer in Spain, in Granada, and a semester in Cape Town, at the

University of Cape Town. I think I was the first engineer to go to Africa from this school, but it was very easy to accomplish and they worked with my needs and as a result I will still be graduating in four years.

What are your future plans?

As far as life after Santa Barbara, I will be attending the new university in Saudi Arabia, the King Abdullah University of Science and Technology (KAUST), to get a master's degree in environmental science and engineering with a focus on renewable energies, air and water quality, and green planning. And beyond that, who knows? I have a passion for international culture and travel so if I am lucky enough maybe I'll get to use what I have learned somewhere across the Atlantic or maybe here at home.

what's going on...

ARE YOU IN DEMAND?

Starting salaries for the class of 2008

Mechanical Engineering National Average: * \$ 57,009

UC Santa Barbara Average: \$56,600

Mechanical engineers are projected to have a 4% employment growth over the next decade, according to the United States Bureau of Labor Statistics. Some new job opportunities will be created due to emerging technologies in biotechnology, materials science, and nanotechnology. Additional opportunities outside of mechanical engineering will exist because the skills acquired through earning a degree in mechanical engineering often can be applied in other engineering specialties. According to our recent surveys, UCSB Mechanical Engineering students have starting salaries close to the national average.

* According to the 2008 National Association of Colleges and Employers

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: Engineers Without Borders, the Society of Automotive Engineers, the American Society of Mechanical Engineers, and the Society of Women Engineers.



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...

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.ucop.edu>

"I was surprised to find the American students more serious about their studies abroad than other visiting students. The host students were very welcoming socially, but very competitive in the academic arena."

Matthew Wingert – Mechanical Engineering major
EAP Student at Hong Kong University of Science and Technology

Solving Real World Problems

The broad range of career paths for mechanical engineers includes almost every part of industry or business, including: automotive, aerospace, and defense industries. Mechanical Engineering is the second largest of the engineering disciplines, and nearly half of mechanical engineers go into manufacturing of computer and electronic products, machinery, and transportation equipment. The opportunities for mechanical engineers are broadened with the rise of biotechnology, material science and nanotechnology.

Recent graduates in mechanical engineering are now employed at Boeing, Chevron, Cisco Systems, Toshiba, MythBusters, Northrop Grumman, Stryker Endoscopy, and Walt Disney Imagineering. Two students have started their own company for developing medical devices.

Some students are continuing their education at graduate schools, including: Georgia Tech, Caltech, and Stanford.

What you will study in Mechanical Engineering

- Freshmen are introduced to their major with a group design project in their freshman year. Students are exposed to a balance of fundamental theories and principles in science, gaining hands-on expertise utilizing state-of-the-art tools for computational design, analysis and manufacturing that are increasingly used in industry.
- A broad selection of technical electives encourage students to pursue special interests in design and manufacturing, energy and environmental issues, thermal and fluid sciences, materials, dynamics and controls, robotics, and medical technology.
- Students compliment their classroom education by participating in research, industrial internships, membership in professional societies, and by studying abroad.
- Courses are taught by accessible faculty who are recognized leaders in their research fields, including an advanced structures course taught by Chancellor Yang.
- Mechanical Engineering students culminate their studies with a year-long capstone project requiring design problem solving, creative thinking, project planning, and teamwork.



why I transferred...

Virginia Shields
Transfer Student

What made you choose UCSB?

I chose UCSB because they have an outstanding program. It was a really beautiful location and it was close to home, which I wanted.

What has been your favorite experiences studying at UCSB?

Working and living in the Computer Aided Design (CAD) lab has been my favorite academic experience because that is where I've made all of my friends. Mechanical Engineering students spend a lot of time there, which is actually a lot of fun.

I recently participated in a junior design project where we worked on developing an "apnea" monitor as a potential solution for the prevention of Sudden Infant Death Syndrome. The project won a Most Marketable Design award, which was very exciting.

Is there something you wished you knew at Community College to prepare you to transfer to an engineering major?

If I could give advice to a transfer student coming to a university, I would say don't be afraid to take more than two years at your Junior college. Make sure you have the required courses completed to be well prepared to start your engineering courses at UCSB.

Have you participated in any organizations at UCSB?

I have spent some time with the Society of Women Engineers, which is a student organization on campus. It has been a lot of fun to get to meet the other women in the engineering programs.

What kinds of things do you do to balance your academic and personal life while at the University?

While at UCSB, I don't just do engineering; I'm a ballerina. I recently was in Swan Lake with the State Street Ballet and I dance as much as I can because it really helps keeps me sane.

What are your future plans?

After I graduate, my future plans are to find a good position to get my feet wet so that I can get some engineering experience and then take my Professional Engineers exam and progress from there.



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 course general chemistry and lab
Linear algebra	Statics
Vector Calculus	Strength of Materials
Dynamics	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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