SHILEY-MARCOS SCHOOL OF ENGINEERING

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Vision
The Shiley-Marcos School of Engineering is a community of scholars recognized for developing engineers with technical excellence, global perspective and social awareness.

Mission
The Shiley-Marcos School of Engineering is distinguished by student-centered education that emphasizes modern engineering skills and development of the whole person. We are dedicated to effective teaching, meaningful scholarship and compassionate service.

Our engineering programs are crafted to meet the traditions of USD for quality undergraduate education, the need for a more broadly-educated engineer capable of meeting the future demands and challenges of changing technology in a global economy and society, and the curriculum requirements for professional accreditation. The programs are nine-semester, integrated programs of study leading to a Bachelor of Science/Bachelor of Arts (BS/BA) dual degree in a specified field of engineering. In addition to a sound preparation in engineering science, design, and professional practice, the curricula address written and oral communication, human values and relations, and ethics.

The computer science program is a four-year program rooted in the system of principles and theory which deals with what computers do. As an academic discipline within the liberal arts tradition, computer science has ties with many other disciplines including mathematics, the natural sciences and engineering.

Unique Features
The engineering programs are undergraduate programs culminating in a unique dual BS/BA degree that is a consequence of the combination of intensive technical education and the USD emphasis on a broad liberal education. Each engineering program has breadth and depth in the engineering discipline, including an extensive laboratory component in outstanding laboratory facilities dedicated to undergraduate instruction. USD engineering students can expect a personalized education in small classes with a curriculum that emphasizes preparation for work in industry and the development of professionalism and values.

Professional Accreditation
The engineering programs are accredited by the Engineering Accreditation Commission (EAC) of ABET, http://www.abet.org, the recognized accreditor of college and university programs in engineering. ABET accreditation demonstrates the engineering programs’ commitment to providing its students with a quality education. The university is committed to achieving and maintaining professional accreditation to cover all engineering graduates. The electrical engineering program, the industrial & systems engineering program, and the mechanical engineering program have each achieved this goal and have been accredited since
1992, 2001 and 2008, respectively. The BS/BA in Engineering degree will pursue accreditation when it has awarded it first degrees.

**Academic Advising**

All students in the Shiley-Marcos School of Engineering are assigned a faculty advisor who tracks the student’s progress toward attaining their degree. The advisor and student work together to ensure that the student is making satisfactory progress toward graduation. First-year students are assigned an advisor when they enroll in an engineering or computer science preceptorial class during their first semester. Transfer students are initially advised by the Associate Dean of Engineering or the chair of the appropriate program and then assigned a permanent engineering advisor.

**Recommended Prior Preparation**

To complete an engineering program following a standard pattern, incoming students should be prepared to enroll in calculus, English composition, and the third semester of a second language. Background deficiencies in any of the above areas may be removed at USD, but this will increase the minimum requirements for graduation in an engineering major.

Transfer students and other students seriously considering an engineering major are encouraged to contact the Shiley-Marcos School of Engineering to receive academic advising at the earliest opportunity. The first two years of the engineering programs at USD are closely coordinated with those of many community colleges and state universities in California, making it possible to transfer from such institutions to USD with minimal disruption. While the engineering programs are designed to be completed in 9 semesters, students may be able to complete engineering degree requirements in four years with a combination of prior preparation, AP credit and intersession or summer study.

**Special Restrictions on the Use of the Pass/Fail Option**

For engineering majors, the pass/fail option is not permitted in any course required by specific course prefix and title in the appropriate required program of study, or for the major-required electives. With the foregoing exceptions, the general university pass/fail regulations apply. See Academic Regulations (catalogs.sandiego.edu/undergraduate/academic-regulations) for more information on pass/fail.

**Engineering Residency Requirement**

Engineering programs require that a minimum of 24 units of upper division engineering classes be taken at USD.

**Special Program Pattern for NROTC, ROTC and AFROTC Students**

NROTC, ROTC and AFROTC requirements add 18 to 21 units to the standard program for engineering majors. To meet the needs of the involved officer training corps and the major, a special program pattern has been constructed utilizing Intercession and Summer Session. The NROTC scholarship covers the full engineering program. However, benefits beyond four years must be requested through the naval science department.

**Engineering Advisory Board**

The purpose of the Engineering Advisory Board is to help the engineering programs form plans and implement strategies for growth that serve the San Diego technical community while the programs serve the mission of the university. The current board draws its membership from among highly placed leaders in the technical community across several important industries, including telecommunications, energy, aerospace & defense, biotechnology, and semiconductor electronics. Since 1994, the Engineering Advisory Board has helped USD engineering to form plans and implement strategies in the following areas: 1) long-range planning for the continued development of engineering at USD; 2) development and promotion of cooperative programs and relations with industry and the San Diego community; 3) assisting in seeking sources of support for engineering and science programs and facilities; and 4) advising the USD engineering faculty and administration on issues related to the growth and evolution of the engineering program.

**Center for Cyber Security Engineering and Technology**

The University of San Diego’s Center for Cyber Security Engineering and Technology (CCSET) is designed to develop and coordinate opportunities for world-class education, research and service to address threats to information systems. CCSET assists business, government, law enforcement, and private citizens to better prepare and respond to highly motivated, highly trained adversaries who are responsible for billions in lost revenue each year; catastrophic disruptions in service; terrorism and activism; a dark web of criminal activity; and constant peril to critical infrastructure.

University of San Diego’s Center for Cyber Security Engineering and Technology is committed to mitigating cyber security risks developing and coordinating opportunities for education, research, outreach, and service to secure the future prosperity and freedom of in the digital realm. This effort combines the best technology, world-class curriculum and programs, and the mindset to approach the challenge holistically. Stakeholders from engineering, technology, law, policy, business and major industry sectors will all play a role in improving cyber security. USD is committed to uniting these communities to find real solutions, and changing the mentality in cyber security from reactive to proactive.