

College of Engineering

Administration

Dean: Eugene A. Olevsky

Associate Dean for Graduate Studies and Research:
Temesgen Garoma Ararssso (Interim)

Associate Dean for Undergraduate Studies:
Yusef Ozturk (Interim)

Assistant Dean for Student Affairs: Theresa M. Garcia

Director of Veterans Internship: Brittany Field

General Information

The College of Engineering was established as a distinct unit of the university in 1958, although first courses named “Engineering” appeared in the 1922-23 catalog. The 1942-43 catalog was the first to announce the establishment of a “General Engineering” program leading to the Bachelor of Arts degree. The college is now organized into the Departments of Aerospace Engineering, Civil, Construction, and Environmental Engineering, Electrical and Computer Engineering, and Mechanical Engineering.

At the undergraduate level, the College of Engineering prescribes certain patterns of its courses, combined with those of other academic divisions of the university, leading to the Bachelor of Science degree in seven specific major fields of engineering. At the graduate level, the college offers the Master of Science degree in four of these fields and in bioengineering, a Master of Engineering degree, and doctoral degrees in bioengineering, electrical and computer engineering, mechanical and aerospace engineering, and structural engineering jointly with the University of California, San Diego.

Consistent with the role and mission of the California State University system, the faculty of the College of Engineering at San Diego State University believes its mission is to provide students with a quality undergraduate and graduate engineering education; to prepare graduates for professional careers and life-long learning; to promote the creation and dissemination of knowledge; to serve society through professional practice and community outreach; and to act as a catalyst for the technological development of the San Diego region.

Because the engineer’s work is predominantly intellectual and varied, and not of a routine mental or physical character, this program places emphasis on the mastery of a strong core of subject matter in the physical sciences, mathematics, and the engineering sciences of broad applicability. Woven throughout the pattern is a continuing study of the social facets of our civilization, because engineering graduates must expect to find their best expression as leaders, conscious of the social and economic implications of their decisions.

Although the profession of engineering presents in practice a variety of specialties, undergraduate students initially focus their attention on a pattern of coursework emphasizing engineering fundamentals. Students then are able to apply this knowledge of fundamentals in developing special expertise in their areas of specific interest.

Accreditation and Academic Association

The College of Engineering is a member of the American Society for Engineering Education. Undergraduate programs in aerospace engineering, civil engineering, computer engineering, construction engineering, electrical engineering, environmental engineering, and mechanical engineering are accredited by the Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org>.

Registration of Engineers

Professional registration of engineers is required for many fields of practice. Engineering students are encouraged to take the Fundamentals of Engineering examination prior to graduation. Graduation from an accreditation program such as San Diego State University facilitates registration as a Professional Engineer.

Curricula Offered

Refer to the Courses and Curricula section of this catalog for a complete listing of program requirements and courses offered by departments within the College of Engineering.

Doctoral Programs

Engineering Sciences:

Bioengineering (Ph.D.), Electrical and Computer Engineering (Ph.D.), Mechanical and Aerospace Engineering (Ph.D.), Structural Engineering (Ph.D.).

Master’s Degrees

Aerospace Engineering (M.S.), Bioengineering (M.S.), Civil Engineering (M.S.), Electrical Engineering (M.S.), Mechanical Engineering (M.S.), Master of Engineering (M.Engr.).

Bachelor’s Degrees

Aerospace Engineering (B.S.), Civil Engineering (B.S.), Computer Engineering (B.S.), Construction Engineering (B.S.), Electrical Engineering (B.S.), Environmental Engineering (B.S.), Mechanical Engineering (B.S.)

Minor

Engineering

Certificate Program

Rehabilitation Technology (offered with College of Education)

Research Centers and Institutes

Center for Electric Drive Transportation (CEDT)

Chunting C. Mi, Director

The Center for Electric Drive Transportation (CEDT) was established in 2011 with a grant from the U.S. Department of Energy Graduate Automotive Technology Education (GATE) program. The GATE initiative awarded \$6.4 million over the course of five years to support seven Centers of Excellence at American universities. The center focuses on three critical automotive technology areas: hybrid propulsion, energy storage, and lightweight materials. CEDT is dedicated to achieving the synergy among technological development, research, and graduate education in automotive engineering.

Center for Industrial Training and Engineering Research (CITER)

Gustaaf B. Jacobs, Director

The Center for Industrial Training and Engineering Research (CITER) structures and enhances collaboration between industrial partners and SDSU. The primary objective is to connect SDSU engineering departments, faculty members, undergraduate, and graduate students with engineers and staff scientists of local industry. For more information, visit <http://citer.sdsu.edu/citer>.

Center for Neural Technology (CNT - NSF ERC)

Samuel K. Kassegne, Deputy Director

The Center for Neural Technology is one of several Engineering Research Centers (ERCs) around the country funded by the National Science Foundation (NSF). The center is based at the University of Washington. San Diego State University, along with

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the Massachusetts Institute of Technology, are core partners of the center. The vision of the center is to revolutionize the treatment of spinal cord injury, stroke, and other debilitating neurological conditions by developing neural devices that will assist, improve, and restore sensory and motor function (<http://www.csne-erc.org>).

Center for Renewable Energy and Energy Efficiency (REEE)

Asfaw Beyene, Director

The Center for Renewable Energy and Energy Efficiency (REEE) has supported educational and research activities in energy related areas since 1985. Undergraduate and graduate students and faculty from the mechanical engineering and electrical and computer engineering departments are involved in obtaining solutions to problems presented by industrial sponsors. Institute research projects cover a wide range of areas from optimizing energy resources to international energy studies. For more information, visit <http://reee.sdsu.edu>.

Communication Systems and Signal Processing Institute (COSSPI)

Madhu S. Gupta, Director

This institute is engaged in educational, research, and service activities in the field of electronic communication systems, with an emphasis on radio frequency and digital signal processing aspects. Faculty, students, and industrial partners collaborate to advance the state-of-the-art in the institute's core areas of expertise, such as RF devices and integrated circuits, modems, receivers, transmitters, synthesizers, A-D and D-A converters, digital signal processing algorithms and hardware, antenna, and communication networks. Specific activities include research and design projects; development of products, software, algorithms, and techniques; and training programs including short courses. For more information, visit <https://electrical.sdsu.edu/COSSPI.php>.

Concrete Research Institute

Mohamad Ziad Bayasi, Director

The Concrete Research Institute supports educational needs in civil engineering curriculum and concrete research performed for sponsors from industry and governments. The institute encompasses a wide range of topics. The main emphasis is currently on concrete materials and structures. Civil and environmental engineering faculty members are involved with finding optimum design solutions in bridges, seismic resistant structures, residential buildings, and retaining walls. For more information, visit <http://www.engineering.sdsu.edu/research/institutescenters.aspx>.

Industrial Assessment Center (IAC)

Asfaw Beyene, Director

SDSU Industrial Assessment Center (IAC) is a program funded by the U.S. Department of Energy with a primary goal of (1) training the next generation of energy engineers by providing hands-on experience to undergraduate and graduate students and (2) promoting energy efficiency through service to small- and medium-sized manufacturing plants as well as other buildings with extensive energy use. The combined impact of these goals is expected to create clean jobs, enhance the competitiveness of U.S. industry in the global marketplace, help reduce the country's energy dependency, and promote clean environment by reducing emissions. For more information, visit <https://iac.sdsu.edu>.

Smart Health Institute

Kee S. Moon and Yusuf Ozturk, Co-Directors

Smart Health Institute establishes an area of excellence focused on enhancing research infrastructure to facilitate research and support education in fundamental sensor technologies, wireless networking algorithms, machine learning, decision support systems, and smart medical treatment methods. The center responds to the need for high quality, economically efficient healthcare that is rapidly becoming one of the key economic, scientific, and societal challenges. For more information, visit <https://smarthealth.sdsu.edu/>.