



California State University, Fresno

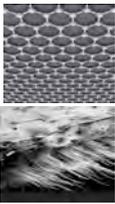
Undergraduate Program in Mechanical Engineering

Overview

The Mechanical Engineering undergraduate program is student-centered, providing high-quality instruction in engineering theory and the latest engineering developments as well as “hands-on” laboratory applications and optional internship training. Faculty hold doctorates in engineering, and most bring significant industrial, professional and academic experience to the classroom. Because of our optional, but highly regarded, internship program (Valley Industry Partnership (VIP) for cooperative education) CSU, Fresno engineering students “learn better” through two six-month internships terms in industry while enrolled in school during their undergraduate program. In addition, students can also earn internship salaries that help defray educational expenses all while graduating with one-year of engineering experience, thereby making them more employable. Finally, qualified students can participate in our “special” five-year Bachelors/Masters blended program.

Concentration Areas

Advanced Materials



The study of advanced materials enables the students to make substantive contributions in the areas of analytical, computational, and experimental methods in the development, characterization and application of advanced materials such as monolithic and composite structural ceramics, graphene, nanomaterials, semiconductors, magnetorheological fluids, polymer composites, etc. Analytical problem solving skills combined computational methods and sound technical fundamentals can form the basis for either direct application to engineering practice or to graduate work in mechanical engineering/engineering mechanics.

Alternative Energy Systems

The application of mechanical engineering to alternative energy systems has taken new directions as critical technologies are incorporated into high-technology energy conversion devices (e.g. combined cycle power generation, photovoltaics, wind turbine, geothermal, fuel cells, etc). The concentration in alternative energy systems and engineering prepares graduates to design quality products in this highly competitive international market.



Mechatronics Systems and Controls



The mechatronics systems concentration provides students with modern training in the rapidly evolving and technically relevant topic of mechatronics engineering. Because mechatronics represents the melding of mechanical engineering, electrical/electronic engineering, and computers, career opportunities are excellent. Students are educated to deal effectively with the complex synergism of sensors, mechanisms and embedded intelligence that are increasingly prevalent in consumer and commercial products.

Degree Program

The **Bachelor of Science in Mechanical Engineering (BSME)** requires a minimum of 123 semester credits. The BSME program has been continuously accredited by the Engineering Accreditation Commission of ABET <http://www.abet.org> since 1965. Qualified students can earn their Bachelors and Masters degrees in five years through a blended 150 unit plan of study.

Why California State University, Fresno?

- **The People:** A distinguished and multidisciplinary faculty, within a scintillating academic environment.
- **The Program:** The Department of Mechanical Engineering houses one of six undergraduate degree programs in the Lyles College of Engineering. Leading edge, inter- and multi-disciplinary educational and research programs (including undergraduate research) with close ties to the College of Science and Mathematics, Jordan College of Agricultural Science and Technology, and Lyles Center for Entrepreneurship and Innovation as well as centers such as UCAM (University Center for Advanced Manufacturing) other intramural centers are noteworthy aspects of the program.
- **The Place:** California State University, Fresno traces its roots to 1911 as Fresno State Normal School. The Lyles College of Engineering is the oldest, publicly-supported engineering college in the Central Valley of California. While engineering courses were first taught at “Fresno State” in 1922, the Department of Engineering was established in 1947, followed by a School of Engineering in 1963, and culminating in its renaming to Lyles College of Engineering in 2008 in recognition of a major financial gift to the College that was intended to enhance and grow engineering education in the Central Valley.

Primary Faculty

Sankha Banerjee, PhD is Assistant Professor of Mechanical Engineering and teaches materials, intro to design, advanced materials, mechanics, senior design, nanomaterials, nanotechnology. His research interests include development and characterization of hybrid energy systems, nanotechnology, nanomaterials, piezomaterials. He holds PhD and MS degrees in Mechanical Engineering from Rutgers, The State University of New Jersey, New Brunswick and a BTechME from Motilal Nehru National Institute of Technology, Allahabad, India.



Maziar Ghazinejad, PhD is Assistant Professor of Mechanical Engineering and teaches mechanics of materials, mechanical design, advanced mechanics of materials, mechanical systems, nanomaterials, nanotechnology. His research interests include development and characterization of nanomaterials, including graphene as well as nanotechnology. He holds a PhD in ME and a MSEE from University of California, Riverside; a MSME from Iran University of Science and Technology; and a BSME from University of Technology, Tehran, Iran.



Gemunu S. Happawana, PhD is Professor and Chair of Mechanical Engineering and teaches dynamics, controls, instrumentation, vibrations, advanced mathematics, vehicle dynamics. His research interests include photodiode lasers, vibrations, systems, dynamics, controls and wind energy. He holds a PhD in Mechanical Engineering and MS in Applied Mathematics from Purdue University, West Lafayette and a BSc in Mathematics from University of Colombo, Sri Lanka.



Michael G. Jenkins, PhD, PE is Professor of Mechanical Engineering and teaches mechanics of materials/solids, materials, machine element analysis/design, probabilistic design, manufacturing processes. His research interests include characterization of and design with brittle materials, development/verification of national/international standards/codes; analytical/numerical modeling of thermo-mechanical behavior/damage of materials. He holds a PhD in Mechanical Engineering from University of Washington-Seattle; a MSME from Purdue University, West Lafayette and a BSME from Marquette University.



Deify Law, PhD is Assistant Professor of Manufacturing Engineering and teaches fluid mechanics, thermodynamics, and CFD. His research includes multiscale modeling, two-phase flows, CFD, energy design. He received his PhD in Mechanical Engineering from Virginia Polytechnic Institute and State University (Virginia Tech) and his MSME and BSME degrees both from Iowa State University



Walter V. Loscutoff, PhD is Professor-emeritus of Mechanical Engineering and teaches freshman design, dynamics, applied mathematics, technical communication. His research interests lie in controls, instrumentation, emissions, mechanics, energy systems. He holds a PhD in Mechanical Engineering; a M.S. Applied Mathematics, and a BSME, all from University of California, Berkeley.



The M. Nguyen, PhD is Assistant Professor of Mechanical Engineering and teaches computational methods, engineering graphics, kinematics of machinery, instrumentations/measurements, senior capstone design. His research interests include advanced materials (e.g., magnetorheological materials), advanced design, numerical techniques, mechatronics, instrumentation/controls. He received both his PhD in Mechanical Engineering and his MSME from The University of Toledo and his BSME from The University of Oklahoma, Norman.



Ajith Weerasinghe, PhD is Assistant Professor of Mechanical Engineering and teaches heat and mass transfer, thermodynamics and energy systems. His research interests lie in alternative energy, especially photovoltaic materials and systems for solar energy power conversion, alternative energy systems, and life cycle analysis. He earned his PhD in Solar Cells, MERI from Sheffield Hallam University, England; his M.Phil, in Solar Power Electronics from Brunel Univ., London, England; and his B.Eng, Mechanical Engineering from Univ, of Leicester, England.



Walter Mizuno is full-time Lecturer in Mechanical Engineering and teaches dynamics, kinematics of machinery, design of machine elements, mechanical systems, thermodynamics, CAE, HVAC, senior design. His research interests relate to HVAC and thermodynamics. He holds MSME and BSME degrees both from University of California, Berkeley



For More Information

For more information about courses, degree requirements, research opportunities, or financial support visit our website at <http://www.fresnostate.edu/engineering/mechanical-engineering/> or send us an e-mail at ghappawana@csufresno.edu.

An on-line undergraduate application is available at <http://www.fresnostate.edu/academics/gradstudies/admission/applying.html>

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