The principal objectives of the graduate curriculum in chemical and biochemical engineering are to develop and expand students’ abilities to solve new and more challenging engineering problems and to promote their skills in independent thinking and learning in preparation for careers in manufacturing, research or teaching. These objectives are reached through a program of coursework and research designed by each student with the assistance, advice and approval of a primary faculty adviser and a faculty advisory committee.

**DEGREES OFFERED**
M.S. & Ph.D.

**HIGHLIGHTS**
- World-class faculty addressing current grand challenges in energy and the environment
- Highly collaborative, interdisciplinary research culture
- Active and engaged graduate student association, which participates in department affair
RESEARCH FOCUS AREAS

• Biomolecular Engineering
• Biomaterials
• Biophotonics and Optoelectronics
• Electrochemistry and Energy Materials
• Metabolic Engineering and Synthetic Biology
• Nuclear Chemistry and Separations
• Soft Matter and Complex Fluids
• Systems Biology

AFFILIATED FACILITIES

• Beckman Laser Institute
• Flow Cytometry Core Facility
• Genomics High Throughput Facility (GHTF)
• Institute for Design and Manufacturing Innovation (IDMI)
• Irvine Materials Research Institute (IMRI)
• Laser Spectroscopy Facility
• Mass Spectrometry Facility
• Nuclear Reactor Facility
• Sue and Bill Gross Stem Cell Center Core

RECOMMENDED BACKGROUND

It is strongly recommended that students have background and training in core chemical engineering topics (transport phenomena, thermodynamics and reaction kinetics) as well as a strong background in mathematics, chemistry and physics. A student who enters the program without undergraduate preparation in chemical engineering is required to take three to five additional prerequisite courses (MATH 3A and MATH 3D, and CBEMS 45B–CBEMS 45C, CBEMS 110, CBEMS 112, and CBEMS 125A).

RELATIONSHIP OF M.S. AND PH.D. PROGRAMS

Students applying with the objective of a Ph.D. are admitted to the M.S./Ph.D. program only if they are likely to successfully complete a Ph.D. program. These students do not formally reapply to the Ph.D. program after completing the M.S. degree. Students who apply to the M.S.–only program must formally apply for the Ph.D. program if they desire to continue for the Ph.D. Financial support is usually reserved for those students who plan to complete the Ph.D. The normative time to complete M.S. and Ph.D. degrees is two and five years, respectively.