

GRADUATE PROGRAM

# Chemical and Biomolecular Engineering

<http://engineering.uci.edu/dept/cbe/graduate>



The principal objectives of the graduate curriculum in chemical and biomolecular 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 industry, research and 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 conducting research in energy, biotechnology and soft matter
- Highly collaborative, interdisciplinary research culture
- Active and engaged graduate student association, which participates in departmental affairs

## 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

- Advanced Power and Energy Program
- Beckman Laser Institute
- Center for Complex Biological Systems
- Flow Cytometry Core Facility
- Genomics High Throughput Facility (GHTF)
- Institute for Design and Manufacturing Innovation (IDMI)
- Integrated Nanosystems Research Facility (INRF)
- Irvine Materials Research Institute (IMRI)
- Laboratory for Fluorescence Dynamics
- 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 either take additional prerequisite courses, or perform a self-study of the core chemical engineering topics and pass a placement test before enrolling in the corresponding graduate core courses.

## 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. 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.