

Chemical and Biochemical Engineering, PhD

The Department of Chemical and Biochemical Engineering provides a stimulating academic community where students engage in a highly personalized learning and research environment. The graduate program provides qualified students with deeper and broader training than is possible at the undergraduate level. The Doctor of Philosophy program provides students with opportunities to obtain specialized knowledge and expertise through advanced coursework in chemical engineering and related disciplines, to engage in interdisciplinary research opportunities, and to impact their communities through service learning. The department emphasizes research; most opportunities for graduates are in research and development.

Faculty within the department have focused research projects in biological and pharmaceutical systems, clean energy and water, air quality and climate, polymers and advanced materials, quantum chemical simulation, machine learning, and remote sensing; see Graduate Program on the Department of Chemical and Biochemical Engineering website.

Learning Outcomes

Graduates will:

- demonstrate a mastery of advanced chemical engineering concepts;
- effectively communicate scientific concepts and/or research results in both written and oral formats to scientific and general audiences;
- demonstrate the ability to perform independent research on an original topic in chemical engineering;
- demonstrate the ability to critically identify and solve research problems, summarize disciplinary information, and evaluate research findings;
- demonstrate knowledge of and commitment to safe and ethical behavior through adherence to best safety practices and academic integrity principles; and
- demonstrate the ability to serve as a STEM ambassador through outreach and service activities.