



University of California, Santa Barbara Objectives for the Undergraduate Program

B.S. in Chemical Engineering

Educational Objectives

- Our graduates will be innovative, competent, contributing chemical engineers.
- Our graduates will demonstrate their flexibility and adaptability in the workplace, so that they remain effective engineers, take on new responsibilities, and assume leadership roles.
- Our graduates will continually develop new skills and knowledge through formal and informal mechanisms.

Student Learning Outcomes

Upon graduation, students from the ChE program at UCSB are expected to have:

1. Fundamentals – The fundamental knowledge of mathematics, computing, science, and engineering needed to practice chemical engineering, and the ability to apply this knowledge to identify, formulate, and solve chemical engineering problem;
2. Laboratory – The ability to design and conduct experiments and to analyze and interpret data;
3. Design – The ability to design a system, component, or process to meet desired specifications, while recognizing, assessing and mitigating potential hazards; the ability to use modern engineering tools necessary for engineering practice;
4. Advanced Training – Knowledge beyond the basic fundamentals in chemical engineering and/or related technical fields as preparation for a continuing process of lifelong learning, a recognition of the need for and the ability to engage in lifelong learning;
5. Teamwork/Communication – The ability to function productively in multidisciplinary teams working towards common goals; the ability to communicate effectively through written reports and oral presentations;
6. Engineering & Society – The broad education necessary to understand the impact of engineering solutions in a global/societal context; a knowledge of contemporary issues; an understanding of professional and ethical responsibility.