CHEMICAL ENGINEERING, B.S.E.

Program Educational Objectives

Within six years of graduation, our graduates are expected to achieve one or more of the following milestones:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. Communicate effectively with a range of audiences.
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. Acquire and apply new knowledge as needed, using appropriate learning strategies.

Learning Outcomes

- Students will apply knowledge of mathematics and chemistry to typical problems encountered in chemical engineering practice.
- Students will apply knowledge of engineering to typical problems encountered in chemical engineering practice.
- Students will demonstrate the use of chemical engineering science fundamentals in developing solutions of problems typical of those encountered in chemical engineering practice.
- Students will be able to design and conduct laboratory experiments, as well as to analyze and interpret data using factorial design methods.
- Students will be able to use chemical process simulators and other techniques, skills, and modern engineering tools necessary for chemical engineering practice.
- Students will be able to design a chemical engineering system, unit, or chemical process to meet desired needs.
- Students will be able to present technical material through oral presentations with visual aids.
- Students will be able to present technical material including analysis and conclusions through technical reports.
- Students will be able to work in multi-functional teams.
- Students will be able to find information and to learn independently.
- Students will demonstrate knowledge of and adherence to professional and ethical responsibility.
- Students will be able to describe how economic, political, and social issues affect and are affected by the chemical engineering profession.
- Students will comprehend the topics and ideas of familiar subjects in a foreign language.

Academic Standards

Program GPA

Program GPA requirement policies are described in the College of Engineering and Computing section of this bulletin. For the purpose of these policies, the following courses are used to determine the Program GPA for the Chemical Engineering B.S.E. program: all Lower Division Engineering courses, all Chemical Engineering Major courses, and all Engineering Electives.