



WESTERN ILLINOIS UNIVERSITY

Pre-Chemical Engineering

Department of Chemistry, College of Arts & Sciences

Major Program

An applied branch of the science of chemistry, chemical engineering is different from other areas of engineering. Because study in chemical engineering requires a thorough knowledge of the basic principles of chemistry, Pre-Chemical Engineering students at Western Illinois University take a standard Chemistry major's program for two or three years before transferring to a chemical engineering program to complete engineering degree requirements. Some students earn a bachelor's degree in Chemistry at Western, and then they enter a graduate program in Chemical Engineering.

Preparing for Chemical Engineering

Our program was designed as a preparation for studying Chemical Engineering at the University of Illinois, but if you complete all courses satisfactorily, you may be accepted into almost any chemical engineering program. Under Western's dual degree program, students are allowed to earn two bachelor's degrees: a Chemistry degree from Western and a Chemical Engineering degree from the institution to which they transfer. Such programs usually require three years of study at Western and two years of study at another institution. For those students taking the 3-2 dual degree program, third-year courses would be for those of a Chemistry major.

About half of our students transfer to the curriculum in Chemical Engineering at the University of Illinois at Urbana-Champaign. Those remaining transfer to such schools as the University of Missouri at Rolla, Iowa State University at Ames, the Illinois Institute of Technology in Chicago, and the University of Illinois at Chicago. An adequate grade point average and appropriate courses are required for admission to all of these programs.

Electives should be used to fulfill graduation requirements. At the University of Illinois, the Chemical Engineering department is in the College of Liberal Arts, which requires two years of study in a single foreign language in high school or one year in college and full-year course sequences in humanities and social studies.

If you are interested in a career in chemical engineering in high school, you should take every available mathematics course and at least one year each of biology, chemistry, and physics if they are offered. If you could not take these courses in high school, you can still study chemical engineering, but you may have to alter your college program to make up for high school deficiencies. Good high school grades and ACT/SAT scores, coupled with the proper motivation and willingness to work hard, indicate you can succeed in this demanding and rewarding field.

Faculty

Courses in the department are taught by faculty holding doctoral degrees from distinguished universities around the world such as the University of Mysore (India), Kansas State University, Lucknow University (India), University of Victoria (Canada), and University of Loyola. All are dedicated educators, skilled in fostering active student participation. They are also active researchers and have to their credit many research publications and presentations in the areas of their specialties.

HIGHER VALUES IN HIGHER EDUCATION

Scholarships

The Department of Chemistry awards numerous scholarships. Detailed information on scholarships is available from the department, (309) 298-1538; Western's Scholarship office, (309) 298-2001; or on the Web at wiu.edu/Scholarship or wiu.edu/Chemistry.

Honors in Chemistry

To be eligible for the Centennial Honors College, entering freshmen must have an ACT composite score of at least 28 OR have a 26 or 27 composite ACT and be in the top 15% of their graduating class OR have an ACT composite score of at least 24 and be in the top 10% of their high school graduating class. Transfer students with at least 12 semester hours and up to 59 semester hours of undergraduate courses are admitted with a grade point average of at least 3.3 OR 3.4 for 60 semester hours or more. To find out more, visit wiu.edu/Honors.

General honors seminars in the humanities, sciences, and social sciences provide students with opportunities to explore key academic issues with distinguished faculty members. In the Chemistry department, honors students take courses for honors credits and, as seniors, prepare an honors thesis under the direction of a department faculty member.

Student Activities

For students interested in chemistry, the department offers the Chemistry Club, an association affiliated with the American Chemical Society.

Special Opportunities

The department offers small classes with accessible faculty and personalized advising in Currens Hall. There are two electronic classrooms and teaching/research laboratories, as well as a Physical Sciences Library that subscribes to more than 60 journals and online literature searching through the Chemical Abstract Service. Undergraduates have access to the department's state-of-the-art equipment and facilities, which are augmented by the existence of a graduate program. The modern instrumentation available for teaching and research includes FPLC, HPLC, FT-NMR, FT-IR, UV-Vis, and GC-MS spectrometers; capillary electrophoresis; and a high-speed centrifuge.

After College

Chemical engineers manipulate molecules in an efficient, low-cost manner to produce the large quantities of materials needed by today's industry. They may be involved in such tasks as moving chemicals and petroleum by pipeline; designing production facilities for pharmaceuticals, plastics, paints, and fertilizers; and developing more energy-efficient, pollution-free plant processes. The new and rapidly expanding field of biotechnology requires chemical engineers who understand both chemicals and microorganisms. Often, the chemical engineer is a manager who directs the operation of plants and processes. Chemical engineers also teach in universities, and some have their own consulting companies. Chemical engineers are consistently paid more than other types of engineers. Because there are so few engineers in this field, starting salaries are typically high. Approximately 20% of today's chemical engineering students are women.

For More Information

The department welcomes visitors. Call the Department of Chemistry at (309) 298-1538 or e-mail the adviser: JL-Sandrik@wiu.edu. You can also learn more about the department by visiting wiu.edu/chemistry.

For Your General Outlook

Detailed descriptions of the courses noted below can be found in the *Undergraduate Catalog*.

<i>Semester 1</i>	<i>Semester 2</i>	<i>Semester 3</i>	<i>Semester 4</i>
Chem 201 (4)	Chem 202 (4)	Chem 331 (5)	Chem 332 (4)
Math 133 (4)	Math 174 (4)	Math 231 (4)	Math 333 (3)
Math 183 (1)	Phys 198 (4)	Phys 200 (4)	CS 225 (3)
Phys 197 (4)	Electives (4)	Electives (2)	Eng 280 (3)
Eng 180 (3)			Electives (3)



wiu.edu/chemistry

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