

Chemical and Biochemical Engineering, MS

Requirements

The Master of Science program in chemical and biochemical engineering without thesis requires a minimum of 33 s.h. The Master of Science program in chemical and biochemical engineering with a thesis requires a minimum of 30 s.h. in approved graduate courses. Students who pursue the thesis option may earn up to 6 s.h. in CBE:5999 MS Thesis Research: Chemical and Biochemical Engineering. All students must maintain a UI cumulative grade-point average (GPA) of at least 3.00.

Students entering with a degree other than chemical engineering may need to take additional coursework to attain proficiency in core areas of chemical engineering.

The MS in chemical and biochemical engineering requires the following coursework.

Core Courses

Students must maintain a GPA of at least 3.25 in the five core courses.

Course #	Title	Hours
One of these:		
CBE:5104	Introduction to Literature Review and Technical Writing (non-thesis)	3
CBE:5105	Introduction to Literature Review and Proposal Writing (thesis)	3
All of these:		
CBE:5110	Intermediate Thermodynamics	3
CBE:5115	Transport Phenomena I	3
CBE:5120	Data Science in Chemical and Engineering Systems	3
One of these:		
CBE:3205	Introduction to Biochemical Engineering	3
CBE:5315	Polymer Chemistry	3
CBE:5425	Atmospheric Chemistry and Physics	3

Professional Development Experience

Professional growth extends beyond the curriculum and the research laboratory. Graduate professionals must be able to identify and lead educational and research enterprises that advance the scope and impact of the discipline.

Important skills include building professional networks, developing a comprehensive outlook for identifying emerging directions in the field, the ability to explain scientific and engineering principles to a variety of audiences, and more. Some examples of professional development experiences include an industrial internship, a second teaching assistant experience, teacher training, organizing a session at a

national conference, and organizing a local conference. A student's professional development experience must be developed in consultation with their research mentor and approved by the director of graduate studies. The professional development experience is required for MS thesis students.

Electives

Students supplement the core curriculum with electives tailored to their interests.

Additional Requirements

All thesis students must take ENGR:7270 Engineering Ethics during their first semester and CBE:5000 Seminar in Chemical and Biochemical Engineering each semester in residence. MS thesis students are required to present at CBE:5000. MS thesis students are also required to serve as a teaching assistant at least once during the duration of their graduate studies. Nonthesis students must take CBE:5100 Graduate Professional Development Seminar in each of their final two semesters in the program.

Students in the nonthesis program may petition for entry into the thesis program or the PhD program by requesting a change of status through the Graduate College. The request is reviewed by the Graduate Admissions Committee. If approved by the committee, the request is forwarded to the chemical and biochemical engineering faculty for final approval. Students then are assigned to research advisors as though they are newly admitted graduate students. For a detailed description of program requirements, see Graduate Program on the Department of Chemical and Biochemical Engineering website.

All students must pass a final examination.