

CHEMICAL ENGINEERING (PH.D.)

<https://ceps.unh.edu/chemical-engineering/program/phd/chemical-engineering>

Description

Ph.D. Admission Requirements

Students admitted to the Ph.D. program normally have a master's degree in chemical engineering. Exceptional students with a baccalaureate degree in chemical engineering are eligible for admission to the program. To be admitted, students must present evidence that they have a strong foundation in chemical engineering. Applicants must submit current scores (within five years) from the general test of the Graduate Record Examination. International students are required to submit TOEFL test scores. IELTS scores are accepted on a case-by-case basis, and students must have a minimum score of 6.5.

Requirements

Ph.D. Degree Requirements

PhD students will complete the following core chemical engineering courses:

Code	Title	Credits
CHE 900	Seminar ¹	2
CHE 923	Advanced Chemical Engineering Thermodynamics	3
CHE 932	Advanced Chemical Engineering Kinetics	3
CHE 940	Advanced Transport Phenomena	3

¹ Students should register for CHE 900 for 2 credits in their first two semesters and CHE 900 for 0 credits each additional semester until their degree is granted.

Those students admitted with a master's degree in chemical engineering are required to take an additional 3 elective courses at the 800- or 900-level to complete the course work requirements. Those students admitted with a baccalaureate degree in chemical engineering are required to complete an additional 5 elective courses at the 800- or 900-level to complete the course work requirements. Courses taken within the UNH School of Law, College of Life Sciences and Agriculture, and the Paul College of Business and Economics can apply with approval. Electives must be assessed with a letter grade and cannot be pass/fail. Students take electives after consulting with their advisers. The courses the students have taken to fulfill their B.S. degree requirement cannot be counted toward their Ph.D. degree requirement.

Students in the PhD program are expected to complete the 3 required core courses within the first year of graduate study. After completion of the core courses, the graduate coordinator will administer a qualifying exam on the core subjects. The graduate coordinator also conducts an annual review of each student's progress in the program. All course work, including electives, should be completed by the end of the second year of study and must be completed before the student can be advanced to candidacy.

To advance to candidacy, the student must prepare a research proposal, which is different from his/her PhD dissertation research, and defend the

proposal in an oral examination before a doctoral guidance committee. After successful completion of the oral qualifying examination, the student is advanced to candidacy and upon recommendation of the graduate coordinator, a doctoral dissertation committee is appointed by the dean of the graduate school. The doctoral dissertation committee supervises and approves the dissertation and administers the final dissertation defense.

There is no language requirement.

Student Learning Outcomes

- The ability to apply knowledge of mathematics, science and engineering.
- The ability to design and conduct experiments safely, as well as to analyze and interpret data.
- The ability to identify, formulate and solve chemical engineering problems.
- The ability to design a process that meets desired specifications with consideration of environmental, safety, economic and ethical criteria.
- An appreciation of contemporary issues relevant to chemical engineering.
- Completed the UNH general education/Discovery program and obtained a broad education useful to understand the impact of engineering solutions in a global and societal context.
- The ability to use computers effectively for engineering practice.
- An appreciation of professional and ethical responsibility.
- The ability to communicate effectively.
- Skills to search for information in the library and on the internet.
- These skills will be used in their pursuit of lifelong learning.
- The capacity of function and work effectively alone and in a team environment.