CHEMICAL ENGINEERING (PH.D.)

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

Description

Our chemical engineering Ph.D. will give you intensive research experience alongside a solid foundation in the fundamental principles of chemical engineering, preparing you for highly selective careers in academia, research and related fields. You will collaborate with award-winning faculty in state-of-the-art labs, exploring areas such as tissue engineering, biophysics, catalysis, synthetic biology, and sensors.

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
CHBE 900	Seminar [1]	0 or 1
CHBE 923	Advanced Chemical Engineering Thermodynamics	3
CHBE 932	Advanced Chemical Engineering Kinetics	3
CHBE 940	Advanced Transport Phenomena	3

[1] Students should register for CHBE 900 for 1 credit each in their first two semesters and 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 PhD. degree requirement.

Students in the PhD program are expected to complete at least two core courses excluding CHBE 900 within the first year of graduate study.

Students with a GPA of 3.0 or better in the two core courses are eligible to take the qualifying exam. The qualifying exam will have a written and an oral component and will be administered by the graduate committee. The graduate coordinator / committee will conduct 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, 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

Program Learning Outcomes
Upon completion of the doctoral degree, the student will be able to:

- Use appropriate chemical engineering techniques, tools and methods to solve broadly defined engineering problems.
- Critically analyze the literature and determine the state-of-the-art in a given research topic.
- Write and defend an original research proposal.
- Use computational and/or experimental skills to solve an original research problem in the field of chemical engineering and critically evaluate the results.
- Demonstrate independence in conducting research and take ownership for its direction.
- Demonstrate oral and written communication skills through publications and presentations to a variety of audiences.