Chemical Engineering, PhD

ESCHEMEPHD

Program description

Degree awarded: PHD Chemical Engineering

The chemical engineering faculty offer a graduate program leading to the PhD in chemical engineering.

Areas of research emphasis include atmospheric aerosols, biomolecular engineering, biosensors, chemical therapies for neurodegenerative diseases, electrochemistry, electronic materials processing, engineering education, flexible display technology, fuel cells, inorganic membranes, process design and operations, protein synthesis, transport phenomena in living systems and water purification.

A graduate handbook detailing information on graduate studies in chemical engineering is available on the school's website. For additional details, students should contact the graduate advising office in the School for Engineering of Matter, Transport and Energy.

At a glance

- College/School: Ira A. Fulton Schools of Engineering
- Location: <u>Tempe</u>

Degree requirements

84 credit hours, a written comprehensive exam, an oral comprehensive exam, a prospectus and a dissertation

Required Core (9 credit hours)

CHE 533 Transport Processes I (3) CHE 543 Thermodynamics of Chemical Systems (3) CHE 544 Chemical Reactor Engineering (3)

Technical Electives (18 credit hours)

Other Requirements (5 credit hours)

CHE 591 Seminar (5)

Research (12 credit hours) CHE 792 Research (12)

Additional Research/Electives (28 credit hours)

Culminating Experience (12 credit hours)

CHE 799 Dissertation (12)

Additional Curriculum Information

Technical electives are selected from within or outside the chemical engineering program.

Admission requirements

Applicants must fulfill the requirements of both the Graduate College and the Ira A. Fulton Schools of Engineering.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree in any field from a regionally accredited institution.

Applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in the last 60 hours of their first bachelor's degree program, or applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program.

All applicants must submit:

- 1. graduate admission application and application fee
- 2. official transcripts
- 3. personal statement
- 4. resume or curriculum vitae
- 5. three letters of recommendation
- 6. proof of English proficiency

Additional Application Information

An applicant whose native language is not English is required to achieve a minimum score of 100 on the internet-based TOEFL, regardless of their current residency.

Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about <u>ASU tuition and financial aid</u> options to find out which will work best for them.

Application deadlines

Fall

Spring expand

expand

Program learning outcomes

Program learning outcomes identify what a student will learn or be able to do upon completion of their program. This program has the following program outcomes:

- Demonstrate an understanding of key concepts of thermodynamics in the field and how to apply those concepts in their Ph.D. research.
- Write creative engineering documents that show an understanding of their experimental research and appropriately records and analyzes their results.
- Construct a research plan that provides detailed experimental procedures and provides a novel research approach.

Career opportunities

Professionals with a chemical engineering doctoral degree have strong opportunities at all levels in research, design and manufacturing at companies of all sizes; at national laboratories (DOE, DOD, NASA); and in academics. Analytical skills learned in chemical engineering are also valued in other nonengineering positions.

Career examples include:

- engineer
- engineering manager or director
- engineering professor
- lecturer
- process engineer
- research engineer

Contact information

<u>Chemical Engineering Program</u> | ECG 202 <u>semtegrad@asu.edu</u> | 480-965-2335