Chemical Engineering, MS

ESCHEMEMS

Program Description

Degree Awarded: MS Chemical Engineering
The chemical engineering faculty offer a graduate program leading to the MS 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 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: Tempe

Accelerated Program Options

This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an accelerated bachelor's plus master's degree with:

Chemical Engineering, BSE

Acceptance to the graduate program requires a separate application. Students typically receive approval to pursue the accelerated master's during the junior year of their bachelor's degree program. Interested students can learn about eligibility requirements and how to apply.
Degree Requirements

33 credit hours and a thesis, or
33 credit hours including the required applied project course (CHE 593)

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 (15 or 18 credit hours)

Other Requirement (3 credit hours)
CHE 591 Seminar (3)

Culminating Experience (3 or 6 credit hours)
CHE 593 Applied Project (3)
CHE 599 Thesis (6)

Additional Curriculum Information
This degree has two options: a thesis option and a nonthesis option. The nonthesis option requires an applied project. Both options require a faculty advisor. All students are admitted to the nonthesis option until a faculty advisor has been secured and agrees to allow the student to change to the thesis option.

The composition of technical electives depends on the student's final culminating experience. At least one technical elective course of three credit hours must be taken outside of chemical engineering, and the academic unit must approve all elective coursework in order for the credits to be utilized on the plan of study.

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 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 must provide proof of English proficiency via a minimum score of 90 on the internet-based TOEFL, regardless of their current residency.

Admission to the 4+1 degree program requires a 3.50 ASU GPA (scale is 4.00 = "A") in degree-applicable courses. All applications are subject to review, and admission is not guaranteed.

Tuition Information
When it comes to paying for college, everyone’s situation is different. Students can learn about ASU tuition and financial aid options to find out which will work best for them.

Application Deadlines

Fall
Spring

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 culmination event (Applied project or M.S. thesis).
- Communicate the results of research performed related to chemical engineering concepts through written and oral presentations.
- Demonstrate an understanding of key concepts of kinetics in the field and how to apply those concepts in their culmination event (e.g., Thesis).

Career Opportunities
Professionals with a Master of Science in chemical engineering have strong opportunities at all levels in chemical engineering in research, design and manufacturing at companies of all sizes; national (DOE, DOD, NASA) laboratories; and 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

Chemical Engineering Program | ECG 202
semtegrad@asu.edu | 480-965-2335