DOCTOR OF PHILOSOPHY (PHD) DEGREE IN THE FIELD OF CHEMICAL ENGINEERING

Program Learning Outcomes for the MS and PhD Degrees in the field of Chemical Engineering

Upon completing the MS and PhD degrees in the field of Chemical Engineering, students will be able to:

1. Demonstrate a solid foundation in the fundamentals of chemical engineering in four areas: applied mathematics, kinetics and reaction engineering, thermodynamics, and transport phenomena.
2. Apply advanced knowledge from several major areas of modern chemical engineering.
3. Conduct independent research by working on research projects, individually and in interdisciplinary groups.
4. Demonstrate professional written and oral communication skills.

Requirements for the MS and PhD Degrees in the field of Chemical Engineering

MS Degree Program

The MS degree is a thesis masters degree. For general university requirements, please see Thesis Master's Degrees (https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-thesis-masters-degrees/). For additional requirements, regulations, and procedures for all graduate programs, please see All Graduate Students (https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/). Students pursuing the MS degree in the field of Chemical Engineering must complete:

- A minimum of 30 graduate semester credit hours of coursework taken at the 500-level or above (including thesis credit hours).
- A minimum of 18 credit hours, which must include:
  - 5 courses (15 credit hours) of core Chemical Engineering (CHBE) courses (taken in the first two semesters), and
  - 1 course (3 credit hours) selected from departmental (CHBE) course offerings, taken at the 500-level or above.
- A minimum of 18 approved advanced credit hours (coursework taken at the 500-level or above) with a minimum grade of B- (2.67 grade points) in each course.
- An original research thesis and submit it to the Office of Graduate and Postdoctoral Studies.
- Pass a public oral examination in defense of the thesis.

The requirements listed in the General Announcements (GA) satisfy the minimum requirements for this degree program. In certain instances, courses (or requirements) not officially listed here may be substituted upon approval of the program's academic advisor, or where applicable, the department or program's Director of Graduate Studies. Course substitutions or any exceptions to the stated official curricular requirements must be approved by the Office of Graduate and Postdoctoral Studies (https://graduate.rice.edu/). Students and their academic advisors should identify and clearly document the courses to be taken.

Summary

Code	Title	Credit Hours
Total Credit Hours for the MS Degree in the field of Chemical Engineering		30

Requirements for the PhD Degree in Chemical Engineering

PhD Degree Program

For general university requirements, please see Doctoral Degrees (https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-doctoral-degrees/). For additional requirements, regulations, and procedures for all graduate programs, please see All Graduate Students (https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/). Students pursuing the PhD degree in the field of Chemical Engineering must:

- Satisfactorily complete 24 credit hours of advanced coursework (taken at the 500-level or above), including the required 5 core courses, taken in the first two semesters. Students who already have an MS degree in chemical engineering can petition for departmental approval to be excluded from a required core course or courses, but must satisfactorily complete the 24 required credit hours.
- Prepare and present a thesis proposal.
- Complete a publishable thesis representing research that is an original and significant contribution to the field of chemical and biomolecular engineering.
- Pass a public oral examination in defense of the thesis.
- Fulfill a residency requirement.
- Complete the teaching assignments.

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Summary

Code	Title	Credit Hours
Total Credit Hours for the PhD Degree in the field of Chemical Engineering		90

Policies for the PhD Degree in the field of Chemical Engineering

Department of Chemical and Biomolecular Engineering Graduate Program Handbook

The General Announcements (GA) is the official Rice curriculum. As an additional resource for students, the department of Chemical and Biomolecular Engineering publishes a graduate program handbook for the MS degree, which can be found here: https://gradhandbooks.rice.edu/2023_24/Chemical_Biomolecular_Engineering_MS_Handbook.pdf and a graduate program handbook for the PhD degree, which can be found here: https://gradhandbooks.rice.edu/2023_24/Chemical_Biomolecular_Engineering_PhD_Handbook.pdf

Transfer Credit

For Rice University's policy regarding transfer credit, see Transfer Credit (https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/#transfer). Some departments and programs have additional restrictions on transfer credit. Students are encouraged to meet with their academic program's advisor when considering transfer credit possibilities.

Departmental Transfer Credit Guidelines

Students pursuing the PhD degree in the field of Chemical Engineering should be aware of the following departmental transfer credit guidelines:

- Requests for transfer credit will be considered by the program director on an individual case-by-case basis.

Additional Information

For additional information, please see the Chemical and Biomolecular Engineering website: https://chbe.rice.edu/

Opportunities for the PhD Degree in the field of Chemical Engineering

Additional Information

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