

CHEMICAL ENGINEERING (MS)

Overview

With the ever-increasing pace of technological development in society, new opportunities are becoming available that require chemical engineering graduates with increased levels of specialization. The Department offers a Master of Science degree in Chemical Engineering that blends scholarship and research with advanced coursework to provide excellent training for students to pursue careers in the chemical industry. Graduate students have opportunities to undertake cutting-edge research with faculty for both thesis and project work. In addition, a coursework-only program is also offered by the department for those who wish to further their professional development by pursuing a graduate degree.

Admission to the MSChE Program

The following Admission Requirement criteria supplement the Graduate School admission criteria (see Categories of Admissions (<https://www.southalabama.edu/bulletin/current/colleges-schools/graduate-school/>)):

1. A Bachelor's degree in chemical engineering or a related field such as chemistry, physics, mathematics, or engineering.
2. A grade-point average of 3.0 or greater (A=4.0) on all undergraduate work.
3. Applicants whose native language is not English must provide one of the following official language test results:
 - Written TOEFL minimum score of 550
 - Internet-Based TOEFL minimum score of 79
 - IELTS minimum band score of 6.5
 - Pearson PTE Academic minimum overall score of 58
 - Duolingo English test minimum score of 100

Note that we do not require nor consider GRE scores in our review of applications. Each applicant will be reviewed by the Admissions Committee, which carries out a holistic review of all applications and welcomes personal discussions with each applicant to discuss specific circumstances. This committee reserves the right to evaluate additional credentials such as, but not limited to, coursework taken and letters of recommendation. Students with a Bachelor's degree in a major other than chemical engineering can qualify for admission by taking a prescribed series of additional undergraduate preparatory courses depending on their background. These undergraduate preparatory courses will not count toward the Master's degree.

The minimum credit hour requirements for the different options of the MSChE degree are:

- Thesis Option 30 credit hours
- Project Option 30 credit hours
- Course Option 33 credit hours

Graduation Plan

(30-33 Total Hours)

The Graduation Plan for each Option is an example of a suggested course schedule; individual student plans may vary. Students should consult an academic advisor to create a personalized plan.

Thesis Option

Course	Title	Hours
First Year		
Fall		
CHE 520	Adv Transport Phenomena I	3
CHE 501	Chemical Engineering Seminar	1
Select one of the following Thesis/Project Option Electives:		3
CHE 590	Special Topics -	
SE 601	Systems Eng Fundamentals	
MA 507	Adv Ordinary Differential Eqns	
MA 508	Adv Partial Differential Eqns	
ST 540	Stat in Research I	
ST 545	Stat in Research II	
Hours		7
Spring		
CHE 521	Adv Transport Phenomena II	3
CHE 551	Adv Chem Engineering Modeling	3
CHE 501	Chemical Engineering Seminar	1
Hours		7
Summer		
CHE 592	Directed Independent Study	3
Thesis Option students are required to take Responsible Conduct of Research (RCR) training from CITI Program prior to graduation.		0
Hours		3
Second Year		
Fall		
CHE 510	Adv Chemical Thermodynamics	3
CHE 599	Thesis	3
CHE 501	Chemical Engineering Seminar	1
Hours		7
Spring		
CHE 525	Chemical Reactor Analysis	3
CHE 599	Thesis	3
CHE 501	Chemical Engineering Seminar ¹	0
Hours		6
Total Hours		30

Project Option

Course	Title	Hours
First Year		
Fall		
CHE 520	Adv Transport Phenomena I	3
CHE 501	Chemical Engineering Seminar	1
Select one of the following Thesis/Project Option Electives:		3
CHE 590	Special Topics -	
SE 601	Systems Eng Fundamentals	
MA 507	Adv Ordinary Differential Eqns	
MA 508	Adv Partial Differential Eqns	
ST 540	Stat in Research I	
ST 545	Stat in Research II	
Hours		7
Spring		
CHE 521	Adv Transport Phenomena II	3
CHE 551	Adv Chem Engineering Modeling	3
CHE 501	Chemical Engineering Seminar	1
Hours		7
Summer		
CHE 592	Directed Independent Study	3
Project Option students are required to take Responsible Conduct of Research (RCR) training from CITI Program prior to graduation.		0
Hours		3

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Second Year

Fall		
CHE 510	Adv Chemical Thermodynamics	3
CHE 594	Project in Chem Engineering	3
CHE 501	Chemical Engineering Seminar	1
Hours		7
Spring		
CHE 525	Chemical Reactor Analysis	3
CHE 594	Project in Chem Engineering	3
CHE 501	Chemical Engineering Seminar ¹	0
Hours		6
Total Hours		30

Course Option

Course	Title	Hours
First Year		
Fall		
CHE 520	Adv Transport Phenomena I	3
Graduate Elective I	Course Option Electives ²	3
MA 507	Adv Ordinary Differential Eqns	3
Hours		9
Spring		
CHE 521	Adv Transport Phenomena II	3
CHE 551	Adv Chem Engineering Modeling	3
Graduate Elective II	Course Option Electives ²	3
Hours		9
Second Year		
Fall		
CHE 510	Adv Chemical Thermodynamics	3
MA 508	Adv Partial Differential Eqns	3
SE 601	Systems Eng Fundamentals	3
Hours		9
Spring		
CHE 525	Chemical Reactor Analysis	3
Graduate Electives III	Course Option Electives ²	3
Hours		6
Total Hours		33

¹ In Thesis and Project Options, CHE 501 must be taken four times but gives 0 credit hours the final time.

² Course Option Electives must be approved by the Department Graduate Coordinator.