

# MASTER OF SCIENCE IN CHEMICAL ENGINEERING

The objective of the Master of Science in Chemical Engineering program is to enable students to build a strong foundation in multiple areas of chemical engineering. The program requires 32 credit hours.

Students have the option of completing a thesis based on between six to eight credit hours of research (CHE 591) with the approval of a thesis adviser, completing a master's project with up to six credit hours of project coursework (CHE 594), or completing the program with coursework. In line with the department's approach to its graduate programs, a student has considerable flexibility, in consultation with their adviser, in formulating a program.

Before the completion of the first semester of graduate study, full-time students should select a permanent adviser. Graduate students pursuing the degree on a part-time basis should select a permanent adviser before registering for their tenth credit hour. The student, in consultation with the adviser, prepares a program of study that reflects individual needs and interests. Students with the thesis option are required to pass an oral comprehensive examination on their thesis and related topics. The examination committee consists of at least three appropriate faculty members who are nominated by the thesis adviser and approved by the department chair.

## Curriculum

### Master of Science in Chemical Engineering (Coursework Only Option)

Requirement	Credits
Minimum Credits Required	32
Maximum 400-Level Credit	12

  

Code	Title	Credit Hours
<b>Core Courses</b>		
<b>(12)</b>		
CHE 501	Transport Phenomena	3
CHE 503	Thermodynamics	3
CHE 525	Chemical Reaction Engineering <sup>1</sup>	3
CHE 530	Advanced Process Control	3
or CHE 535	Applications of Mathematics to Chemical Engineering	
<b>Professional Course</b>		<b>(3)</b>
CHE 506	Entrepreneurship and Intellectual Property Management	3
<b>Elective Courses</b>		<b>(17)</b>
Select 17 credit hours of 400-599 courses from any of the following disciplines: CHE, BME, MMAE, ECE, CAE, ENVE, BIOL, CHEM, PHYS and MATH <sup>2</sup>		17
<b>Total Credit Hours</b>		<b>32</b>

<sup>1</sup> Note: Interested students can substitute CHE 577 for CHE 525 with adviser consent.

<sup>2</sup> Other appropriate electives may be selected (with adviser approval) to satisfy the needs of the individual student and may be aligned with the research areas listed in the Department of Chemical and Biological Engineering section of this bulletin.

### Master of Science in Chemical Engineering (Master's Project Option)

Requirement	Credits
Minimum Credits Required	32
Maximum 400-Level Credit	12

  

Code	Title	Credit Hours
<b>Core Courses</b>		
<b>(12)</b>		
CHE 501	Transport Phenomena	3
CHE 503	Thermodynamics	3
CHE 525	Chemical Reaction Engineering <sup>1</sup>	3
CHE 530	Advanced Process Control	3
or CHE 535	Applications of Mathematics to Chemical Engineering	
<b>Professional Course</b>		<b>(3)</b>
CHE 506	Entrepreneurship and Intellectual Property Management	3

<b>Project Course</b>		<b>(1-6)</b>
CHE 594	Special Projects	1-6
<b>Elective Courses</b>		<b>(11-16)</b>
Select 11-16 credit hours of 400-599 courses from any of the following disciplines: CHE, BME, MMAE, ECE, CAE, ENVE, BIOL, CHEM, PHYS and MATH <sup>2</sup>		11-16

<sup>1</sup> Note: Interested students can substitute CHE 577 for CHE 525 with adviser consent.

<sup>2</sup> Other appropriate electives may be selected (with adviser approval) to satisfy the needs of the individual student and may be aligned with the research areas listed in the Department of Chemical and Biological Engineering section of this bulletin.

### Master of Science in Chemical Engineering (Thesis Option)

Requirement	Credits
Minimum Credits Required	32
Maximum 400-Level Credit	12

Code	Title	Credit Hours
<b>Core Courses</b>		<b>(12)</b>
CHE 501	Transport Phenomena	3
CHE 503	Thermodynamics	3
CHE 525	Chemical Reaction Engineering	3
CHE 530	Advanced Process Control	3
or CHE 535	Applications of Mathematics to Chemical Engineering	
<b>Thesis Research</b>		<b>(6-8)</b>
CHE 591	Research and Thesis for M.S. Degree	6-8
<b>Elective Courses</b>		<b>(12-14)</b>
Select 12-14 credit hours of 400-599 courses from any of the following disciplines: CHE, BME, MMAE, ECE, CAE, ENVE, BIOL, CHEM, PHYS and MATH <sup>1</sup>		12-14

<sup>1</sup> Other appropriate electives may be selected (with adviser approval) using eForms access through Graduate Degree Works to satisfy the needs of the individual student and may be aligned with the research areas listed in the Department of Chemical and Biological Engineering section of this bulletin.