

INDUSTRIAL CHEMISTRY, M.S.

Credits: 37
CIP Code: 400599

Program Overview

The Master of Science degree in Industrial Chemistry is for those students who wish to work in a company environment while pursuing the Master of Science Degree in Industrial Chemistry. Students in this program are generally directed by their company to pursue the additional skill set to advance them in the company environment.

Admissions Requirements

In addition to the General Admissions Requirements as published in this Catalog, applicants to the **Master of Science Degree in Industrial Chemistry** must have completed two semesters each of physics and calculus. GRE Required.

Program Objectives

1. Introduce students to the fundamental laboratory and technical concepts and background concepts in the core areas of organic, analytical, physical and inorganic chemistry.
2. Prepare students to be proficient in the methods of scientific inquiry in the field of industrial chemistry and its associated disciplines.
3. Prepare student to engage in scholarly research methods and discoveries of the discipline.
4. Prepare student for advanced studies, professional careers in industrial chemistry and related fields, or other scholarly endeavors.

Student Learning Outcomes

Students pursuing the **Master of Science Degree in Industrial Chemistry** will:

1. Apply scientific knowledge and quantitative and qualitative skills to analyze and solve problems in the area industrial chemistry.
2. Apply fundamental concepts in the core areas of organic, analytical, physical and inorganic chemistry to execute experimental projects.
3. Utilize technical skill sets to collect, analyze and interpret data to conduct independent project-based research.
4. Effectively communicate information on industrial chemistry in written and oral formats to scientific and non-scientific audiences.
5. Practice professional ethics in the conduct of scientific inquiry, scholarly research, and independent scientific thinking.

Degree Requirements

In addition to the General Degree Requirements as published in this Catalog, students pursuing the **Master of Science Degree in Industrial Chemistry** are required to pass basic examinations during the first week of registration in order to insure that they begin graduate work at a level commensurate with their background. The examinations include the subject matter covered by the following courses: general chemistry, qualitative analysis, organic chemistry, physical chemistry, and mathematics through calculus.

A candidate for the **Master of Science Degree in Industrial Chemistry** must complete a minimum of thirty-seven (36) graduate credits in a program of

study and internship **or** thesis research approved by the Department Chair in consultation with the student and his/her major professor.

Industrial Chemistry

Code	Title	Hours
Required Courses in Chemistry		
CCHE 508	Seminar in Chemistry ¹	1
CCHE 512	Instrumental Methods	3
CCHE 521	Advanced Inorganic Chemistry	3
CCHE 531	Mechanistic Organic Chem I	3
CCHE 532	Organic Synthesis	3
CCHE 541	Thermodynamics	3
CCHE 542	Quantum Mechanics	3
CCHE 561		3
CCHE 562		3
CCHE 571	Intro to Polymer Chemistry	3
Graduate Elective in Business Administration		
Select three credits ²		3
Thesis or Internship		
Select one of the following:		6
CCHE 7X0, Thesis Research Area of Study (Variable Credits) ³		
CCHE 800 ³		
Total Hours		37

¹ Required of all graduate students and must be taken for two semesters to earn one hour of credit.

² See the School of Business Administration course listings.

³ Must be approved by the Department Chair in consultation with the student's major area professor.

Qualifying Examinations Industrial Chemistry, M.S.

Course	Title	Hours
First Year		
First Semester		
CCHE 521	Advanced Inorganic Chemistry	3
CCHE 531	Mechanistic Organic Chem I	3
CCHE 541	Thermodynamics	3
Hours		9
Second Semester		
CCHE 512	Instrumental Methods	3
CCHE 542	Quantum Mechanics	3
CCHE 532	Organic Synthesis	3
Hours		9
Second Year		
First Semester		
CCHE 561		3
CCHE 571	Intro to Polymer Chemistry	3
CCHE 508	Seminar in Chemistry ¹	0
CSB XXX	Business Administration Elective ²	3
Hours		9
Second Semester		
CCHE 562		3

CCHE 508	Seminar in Chemistry ¹	1
CCHE 800	or CCHE 7X0 Thesis Research ³	3
Hours		7
Third Semester		
CCHE 800	or CCHE 700 Thesis Research ¹	3
Hours		3
Total Hours		37

¹ Required of all graduate students and must be taken for two semesters to earn one hour of credit

² See the School of Business Administration course listings.

³ Must be approved by the Department Chair in consultation with the student's major area professor.