

King Faisal University College of Engineering

Name of the Program

Master of Science in Chemical Engineering

Program Overview

Program Mission

The program aims to provide high-quality education, conduct impactful scientific research, and foster community partnerships while stimulating lifelong learning to address Chemical Engineering challenges and national priorities through collaboration with industry and research centers.

Program Vision

The chemical engineering program strives to be globally distinguished by supporting and sustaining the success of its community and stakeholders through quality education and innovative research

Program Objectives

- To create new opportunities for graduate education in the kingdom and help prepare engineering graduates to assume leadership roles in academic research as well as in industry.
- To enhance research and development in the Kingdom and open a new window of collaboration with academic institutes and industry in the Kingdom.
- To train a pool of knowledgeable specialists who will be able to contribute positively to solving current and future problems of society.
- To provide opportunities for continuing professional development for practicing engineers and applied scientists.

Program Information

College	College of Engineering
Academic department	Chemical Engineering Department
Name of the Program	Master of Science in Chemical Engineering
Scientific Degree	Masters
Study Stream	Thesis Track Non-Thesis Track
Study Language	English
Study mode	On campus and Distance Education
Student status	Full-time student
Program Duration	Thesis Track: Two Years Non-Thesis Track: Two Years
Number of Credit Hours	Thesis Track: 30 Non-Thesis Track: 30

Admission Requirements

In addition to meeting the general admission requirements for graduate studies at the university:

- ❖ The applicant must hold a bachelor's degree from a recognized university by the Ministry of Education in the Kingdom of Saudi Arabia in Chemical Engineering or an equivalent field.
- ❖ The minimum cumulative GPA required is 3.50 out of 5.00, or its equivalent in the bachelor's degree.
- ❖ Since English is the language of instruction in the field of engineering, the applicant must obtain a minimum score of 50 on the TOEFL-iBT, or a minimum score of 5.5 on the IELTS, or an equivalent score on other approved tests.
Note: Applicants who hold a bachelor's degree from a program in which English is the language of instruction are exempted from the English proficiency requirement.
- ❖ Submission of two letters of recommendation.
- ❖ Submission of a copy of the academic transcript, including the grading scale.
- ❖ 6. Submission of an equivalency certificate for the bachelor's degree if it was obtained from outside the Kingdom of Saudi Arabia

Program Courses

Core Courses			
Course Code	Course Title	Credit Hours	Pre-Requisites
2204-511	Numerical Methods and Machine Learning for Chemical Engineers	3	None
2204-501	Advanced Chemical Engineering Thermodynamics	3	None
2204-502	Advanced Transport Phenomena	3	None
2204-503	Advanced Chemical Reaction Engineering	3	None
2204-597	Seminar	0	None
2204-598	Thesis (Thesis Track)	6	None
2204-599	Project (Non-Thesis Track)	6	None
Total		18	

Elective Courses			
Course Code	Course Title	Credit Hours	Pre-Requisites
2204-500	Advanced Engineering Mathematics	3	None
2204-512	Process Optimization	3	None
2204-513	Advanced Process Control	3	None
2204-514	Corrosion Prevention & Control	3	None
2204-515	Industrial Catalytic Processes	3	None
2204-516	Green Technologies and Processes	3	None
2204-517	Membrane Separation Processes	3	None
2204-518	Water Treatment Technologies	3	None
2204-519	Multiphase Flow	3	None
2204-520	Air Pollution and Control	3	None
2204-521	Polymer Engineering	3	None
2204-522	Special Topics in Chemical Engineering	3	None
2204-523	Chemical Process Safety	3	None
2204-524	Environmental Sustainability and Circular Economy	3	None
XXXX-xxx	Graduate course offered by other Departments	3	None
Total		45	

Proposed Study Plan

Suggested Study Plan – Thesis Track			
Level	Course Code	Course Title	Credit Hours
Level 1 (9 CH)	2204- 501	Advanced Chemical Engineering Thermodynamics	3
	2204- 511	Numerical Methods and Machine Learning for Chemical Engineers	3
	2204-5xx	Elective 1	3
Level 2 (9 CH)	2204-502	Advanced Transport Phenomena	3
	2204-503	Advanced Chemical Reaction Engineering	3
	2204-5xx	Elective 2	3
Level 3 (9 CH)	2204-598	Thesis	6
	2204-5xx	Elective 3	3
Level 4 (3 CH)	2204-597	Seminar	0
	2204-5xx	Elective 4	3

Suggested Study Plan – Non-Thesis Track			
Level	Course Code	Course Title	Credit Hours
Level 1 (9 CH)	2204- 501	Advanced Chemical Engineering Thermodynamics	3
	2204- 511	Numerical Methods and Machine Learning for Chemical Engineers	3
	2204-5xx	Elective 1	3
Level 2 (9 CH)	2204-502	Advanced Transport Phenomena	3
	2204-503	Advanced Chemical Reaction Engineering	3
	2204-5xx	Elective 2	3
Level 3 (9 CH)	2204-598	Project	6
	2204-5xx	Elective 3	3
Level 4 (3 CH)	2204-597	Seminar	0
	2204-5xx	Elective 4	3