

Post-Graduate Program In Chemical Engineering Dept

1. Overview

Chemical Engineers play a vital role in industrial development and economic prosperity in the Kingdom of Saudi Arabia due to the vast contribution of the chemical and petrochemical industries in the overall Saudi economy. This in addition to the recent expansions in materials and processed minerals of non- petroleum origin and establishing specialized centers for Research and Development (R & D) in most of the industrial firms and scientific institutions for developing operations and products and to over come problems that face the industry and find the optimum solutions.

From this point of view and since the University is the main body that provide qualified national man-power who can take the challenge to catch the ongoing new technologies through scientific research, the importance of a post graduate studies program in Chemical Engineering arises.

2. Program Objectives

1. The program aims at meeting the needs of the Kingdom for qualified individuals with such a highly specialized degree. Graduates are expected to lead in research and development.
2. Strengthening the links between the university and industry through post graduate research in specific industrial problems.
3. Developing and conducting fundamental Chemical Engineering researches.

3. M.Sc. Program

3.1. Specializations (Options)

1. Transport Phenomena.
2. Process Control.
3. Chemical Industries.
4. Material Engineering.
5. Water Treatment and Desalination.

3.2. Admission Requirements

1. Obtaining B.Sc. in Chemical Engineering with grades of at least “Very Good” from KSU or any recognized university.
2. Conditional admission may be granted to students having grades of “Good”.
3. In case of admission of students with B.Sc. degree from disciplines other than Chemical Engineering, completion of additional courses may be required from those students.
4. Students with B.Sc. degree from discipline other than Chemical Engineering and have specialization related to Chemical Engineering are eligible to apply for this program conditionally upon the approval of the departmental board.

3.3. Program Structure

By courses and research.

3.4. Number of Credits

Student must complete 24 credit units. The student is also required to conduct a scientific research and write a thesis in one of the Chemical Engineering topics. The curriculum is designed as follows:

1. *Compulsory M. Sc. Courses*
 - i. **501 CHE: Advanced Thermodynamics.**
 - ii. **511 CHE: Transport Phenomena.**
 - iii. **502 CHE: Advanced Reaction Engineering.**
 - iv. **501 GE: Computer Simulation of Engineering Systems.**
2. *Three courses from one of the departmental M. Sc. Options. (9 credit units)*
3. *One general course either Mathematics or Statistics.*

4. Ph.D Program

4.1. Specializations (Options)

1. Transport Phenomena.
2. Process Control.
3. Chemical Industries.
4. Material Engineering.

4.2. Admission Requirements

1. Obtaining M. Sc. In Chemical Engineering with grades of at least “Very Good” from KSU or any recognized university.
2. The applicant is required to score at least 500 in the TOEFL *or* to take an English Language Test to be given by the Institute of Languages and Translation with a coordination of Engineering College, KSU. (This requirement *must* be satisfied before registering the Project Thesis.)
3. In case of admission of students with M. Sc. Degree from disciplines other than Chemical Engineering, completion of additional courses may be required from those students.
4. Students with M.Sc. degree from discipline other than Chemical Engineering and have specialization related to Chemical Engineering are eligible to apply for this program conditionally upon the approval of the departmental board.
5. Applicants may ask to make an interview that will be conducted by the department
6. Admission will be final if the students pass two semesters with GPA “Very Good” not including summer semester.

4.3. Program Structure

By courses and research.

4.4. Course requirements

The student must pass 18 credits as follows:

1. Six credits, compulsory for all specialization. These are:
 - i. **602 ChE: Advanced Chemical Reaction Engineering (2)**
 - ii. **618 ChE: Unsteady State Transport Phenomena.**
2. Twelve credits in specific specialization option to be specified by the departmental board for one batch for that specialization. A maximum of two master courses from the same specialization option can be taken upon the approval of the departmental board. These two courses should be new and not taken by the student before.

Courses- Description: