



Jordan University of Science and Technology
Faculty of Engineering
Chemical Engineering Department

CHE592 Graduation Project (2) - JNQF Level: 7

First Semester 2023-2024

Course Catalog

3 Credit Hours. Completion of the same project started in CHE 591 with more details, theoretical and/or experimental work, design and calculations

Text Book

Title	?Plant Design and Economics for Chemical Engineers
Author(s)	1. Peters, M.S. and K.D. Timmerhaus
Edition	4th Edition
Short Name	REF # 1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
REF # 2	Systematic Methods of Chemical Process Design	Biegler, L. T., I. E. Grossmann, and A. W. Westerberg	1st Edition	
REF # 3	Process Design Principles	Seider, W. D., J. D. Seader, and D. R. Lewin	1st Edition	
REF # 4	Perry?s Chemical Engineers Handbook	Perry R.H. & Green D.W	7th Edition	
REF # 5	5. The Properties of Gases and Liquids	Reid, Prausnitz and Poling	4th Edition	
REF # 6	Computer Packages, eg. ASPEN, HYSIS	Hand Out	1st Edition	

Instructor

Name	Mr. SALAHEDDIN ABUYAHYA
Office Location	CH2 L-2
Office Hours	
Email	seabuyahya@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Thu : 15:30 - 16:30 Room: LAB

Prerequisites		
Line Number	Course Name	Prerequisite Type
224901	CHE490 Engineering Training	Prerequisite / Study
225910	CHE591 Graduation Project (1)	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	PLANT DESIGN OPTION: 1- Plant site location and Plant layout 2- Equipment design 3- Piping and Instrumentation (P&I diagram) 4- Utilities (steam, cooling water, etc) 5- Costing 6- Report + Presentation	From REF # 1, From REF # 2, From REF # 3, From REF # 4, From REF # 5, From REF # 6
Weeks 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	Practical Project option: 1-Literature survey 2- Experimental procedure 3- Modeling and simulation 4- Experimental results 5- Sensitivity study 6- Discussion of results 7- Report + Presentation	From REF # 1, From REF # 2, From REF # 3, From REF # 4, From REF # 5, From REF # 6

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Be knowledgeable about the kinds of design decisions that challenge process design teams [5SO4, 5SO5, 5SO6] [1L7C2]	15%	
Be able to understand process flowsheet and process selection [15SO1] [1L7K1]	15%	
Have an appreciation of the key steps in carrying out a process design [5SO1, 5SO2, 5SO6] [1L7S1]	15%	
Be familiar with the more widely used industrial separation methods [5SO1, 5SO2, 5SO6] [1L7S2]	15%	
Understand degrees of freedom in modeling process units and flowsheets, and be able to make design specifications and follow the iterations implemented to satisfy them . [5SO1, 5SO2, 5SO6] [1L7C4]	15%	
Demonstrate the ability to write a technical report and make an oral presentation [8SO3, 7SO5] [1L7C1]	15%	
Demonstrate an understanding of the professional work environment [5SO4, 5SO5] [1L7C1]	10%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
30	15	8	10	17	20	

Relationship to NQF Outcomes (Out of 100%)					
L7K1	L7S1	L7S2	L7C1	L7C2	L7C4
15	15	15	25	15	15

Evaluation	
Assessment Tool	Weight
Supervisor Evaluation	25%
Exit Exam	10%
Presentation - Oral Exam	20%
Final Report	45%

Policy	
Grouping	Students should formulate their group, of no more than 4 students per group, during the first weeks of the semester. This groups should maintain for Project I and Project II
Submission of reports	Reports should be submitted on due date and time; there will be a penalty of 10% reduction on the report grade for each day.

Computer Package	Although it is not obligatory, students are encouraged to perform the calculations using well-known computer packages, such as ASPEN or HYSYS, in addition to the traditional hand-calculations.
Student Conduct	It is the responsibility of each student to adhere to the principles of academic integrity. Academic integrity means that a student is honest with him/herself, fellow students, instructors, and the University in matters concerning his or her educational endeavors. Cheating or copying other reports will not be tolerated in this course. University regulations will be pursued and enforced on any cheating student.

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