



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

CHE422 Chemical Industries - JNQF Level: 7

First Semester 2023-2024

**Course Catalog**

3 Credit Hours. Fundamentals of chemical and metallurgical industries, study of selected industries such as water treatment, industrial gases, ceramic, cement and glass industries, fertilizers industries, sulfuric acid, phosphoric acid, etc., case studies on industries related to consumer products.

**Text Book**

<b>Title</b>	Shreve?s Chemical Process Industries
<b>Author(s)</b>	G. Austin
<b>Edition</b>	5th Edition
<b>Short Name</b>	textbook
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Ref # 1	Industrial Chemistry	1. E. Stocchi	5th Edition	
Ref # 2	Encyclopedia of Chemical Technology	Kirck & Othmer,	5th Edition	
Ref # 3	Chemical Process Technology	Jacob Moulijn, Michiel Makkee and Annelies Van Diepen,	1st Edition	
Ref # 4	Perry?s Chemical Engineers? Handbook	Perry, R.H., and Green, D.W.	8th Edition	

**Instructor**

Name	Prof. Mohammad Al Harahsheh
Office Location	-

Office Hours	
Email	msalharahsheh@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue, Thu : 08:30 - 09:30 Room: CH2109

Prerequisites		
Line Number	Course Name	Prerequisite Type
223621	CHE362 Unit Operations	Prerequisite / Study
223640	CHE364 Mass Transfer	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2	Brief overview of Chemical Processing, Chemical Technology and the role of Chemical Engineer.	<b>Chapter 1, 2</b> From <b>textbook</b>
Weeks 2, 3	Water and wastewater Industries.	<b>Chapter 3</b> From <b>textbook</b>
Week 4	Industrial Gases.	<b>Chapter 7</b> From <b>textbook</b>
Week 5	Sulfuric Acid	<b>Chapter 19</b> From <b>textbook</b>
Weeks 5, 6	Introduction to fertilizer industries	<b>Chapter 16</b> From <b>textbook</b>
Week 7	Introduction to ceramic industries	<b>Chapter 9</b> From <b>textbook</b>
Week 8	Cement industries	<b>Chapter 10</b> From <b>textbook</b>
Week 9	Potash Industry	<b>Chapter 17</b> From <b>textbook</b>

Weeks 10, 11, 12	The last part of the course is a descriptive project that will be submitted and presented by each group of students for a topic related to Chemical Process Technology	
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Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Describe the role of Chemical Engineering in chemical industry [1SO4] [1L7K1]	10%	
Explain the role of Chemical processing and the work of chemical engineer [1SO4] [1L7S2]	10%	
Illustrate technological aspects of different chemical industries including: water conditioning and environmental protection, Industrial Gases, Ceramic Industries, Portland cements, Phosphorus Industries, and Potassium Industries [5SO1] [5L7K1]	55%	
Investigate cases on emerging and other existing chemical technologies by applying teamwork learning strategies and project based learning activities [3SO7] [2L7S3]	25%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
55			20			25

Relationship to NQF Outcomes (Out of 100%)		
L7K1	L7S2	L7S3
65	10	25

Evaluation	
Assessment Tool	Weight
Mid Exam	35%
Project	25%
Final Exam	40%

Policy	
Attendance	Since class discussion is a major course ingredient, regular attendance is mandatory. Attendance records will be taken into consideration in any borderline grade decisions.
Exam Policy	There will be no make-up exams except in extreme circumstances at the discretion of the instructor. The instructor has to be informed in advance (by email, phone, personal ...). You will be asked to provide proper documentation.
Disabled students	Students with any sort of limitation or disability should discuss its consequences with the instructor prior to the start of the course.

Emergency Provisions	In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Here are ways to get information about changes in this course: <ul style="list-style-type: none"><li>- E-learning announcements</li><li>- Instructor email (<a href="mailto:ghmalkawi@just.edu.jo">ghmalkawi@just.edu.jo</a>)</li></ul>
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