



AMMAN - JORDAN

المستوى الذهبي

جامعة كل العرب

**Course Syllabus**  
**Faculty of Arts and Science**  
**Academic Department: Chemistry**  
**Academic Year 2022 / 2023 Semester: second**

<b>Course Title:</b>	Industrial Chemistry
<b>Course No.:</b>	1722420
<b>Prerequisite:</b>	1022371 + 1022221
<b>Concurrent:</b>	None
<b>Department:</b>	Chemistry
<b>Coordinator:</b>	
<b>Mode of Instruction</b>	<b>Blended Learning</b> - 2 hours in-class (Synonym) learning 1 hour online asynchronous learning using Edu-Gate

**\*Instructor:**

Lecturer	Office Phone	Room No.	Office Hours	E-mail

**Course Description**

This course serves as an introduction to industrial chemistry. Various aspects related to the commercial production of some chemicals and related products from natural raw materials; construction materials; material and energy balances and industrial water treatment will be presented

**Intended Learning Outcomes**

Upon the completion of the course, this module should lead to the following learning outcomes:

**A. Knowledge and Understanding (Student should):**

- A1. Classify the chemical industry in terms of products, raw materials, scale and types of transformations.
- A2. Discuss with the help of relevant flow diagrams, equations, operating conditions and equipment principles the manufacture of some inorganic compounds.
- A3. Describe metal extraction process.

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Course Learning Outcomes Alignment Matrix									
PLO	A1	A2	A3	B1	B2	B3	C1	C2	C3
1.1	√								
1.2		√							
2.1		√							
2.2			√						
2.3		√							
2.4			√						
2.5				√		√			
2.6							√	√	
3.1									√
3.2								√	
3.3						√			
4.1					√				
4.2								√	
4.3						√			
4.4									√

Course Contents and Schedule

Week	Day and Date	Topics to be covered	Method of instruction	CLOs	PLOs
1		Introduction to Industrial Chemistry: Introduction; Importance of the chemical industry; Primary inorganic materials	In-class lecture	1.1 1.2	A1, A2
			In-class lecture		
2		Introduction to Industrial Chemistry: Introduction; Importance of the chemical industry; Primary inorganic materials	In-class lecture	1.1 1.2	A1, A2
			In-class lecture		



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3		Manufacture of ammonia NH <sub>3</sub>	In-class lecture	2.1, 2.2, 2.3	A2, A3
			In-class lecture		
4		Anhydrous acids: - Manufacture of Nitric acid HNO <sub>3</sub> - Manufacture of Sulfuric acid H <sub>2</sub> SO <sub>3</sub> - manufacture of Phosphoric acid H <sub>3</sub> PO <sub>4</sub>	In-class lecture	2.1, 2.2, 2.3	A2, A3
			In-class lecture		
5		Fertilizers • Nitrogen fertilizers	In-class lecture	2.5, 3.3, 4.3	B3
			In-class lecture		
6		Fertilizers Phosphoric Fertilizers	In-class lecture	2.5, 3.3, 4.3	B3
			In-class lecture		
7		Manufacture of chlorine gas Cl <sub>2</sub> and NaOH	In-class lecture	2.1, 2.2	A2, A3
			In-class lecture		
8.					
9		Extraction of metals Iron -	In-class lecture	2.2, 2.4	A3
			Online (Asynchronous)		
10		Extraction of metals - Aluminum - Copper	In-class lecture	2.2, 2.4	A3
			Online (Asynchronous)		
11		manufacture of Ceramics	In-class lecture	2.4	A3
			Online (Asynchronous)		
12		manufacture of Ceramics	In-class lecture	2.4	A3
			Online		



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			(Asynchronous)		
13		manufacture of glass	In-class lecture	2.4	A3
			Online (Asynchronous)		
14		purification of water	In-class lecture	3.1	C3
			Online (Asynchronous)		
15		purification of water	Assignment	3.2, 4.1, 4.2, 4.3, 4.4	C2, C3, B2, B3
			Online (Asynchronous)		
16.	Final Exam				

**Grading Plan and Assessment Tools**

Assessment Tools	Weights	Due date
Mid-term	30%	TBA
Assignments	10%	TBA
Quizzes	20%	TBA
Inter active lectures	-	-
Group Work	-	-
Presentation	-	-
Reports	-	-
Project	-	-
Case-Study	-	-
Final Exam	40%	TBA



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## Supplementary Reading

### Textbook:

Industrial inorganic Chemistry, Karl Heinz Bbchel Hans-Heinrich Moretto & Peter Woditsch. 2<sup>nd</sup> edition, WILEY-VCH, 2000.

### References:

1. an Introduction to Industrial Chemistry, C. A. Heaton(editor), 2<sup>nd</sup> edition, BLACKIE ACADEMIC &. PROFESSIONAL, 1994.
2. Inorganic Chemistry, Huheey, Keiter and Keiter,4th edition, Harper Collins, 1993.



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APPLIED SCIENCE PRIVATE UNIVERSITY



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## جامعة كل العرب

**Subject Coordinator**

**Signature:** .....

**Head of Curriculum Committee**

**Dr. Hussam Miqdad**

**Signature:** .....

**Department Head**

**Dr. Hussam Miqdad**

**Signature:** .....

**Faculty Dean**

**Dr. Hadeel Al Saed**

**Signature:** .....

**Copy to:**

- Department Head.
- Head of Curriculum Committee.
- Course File.

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UF 28 / 2 رمز النموذج:

رقم القرار 24 / 233

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