

## Course Syllabus

1	<b>Course title</b>	Inorganic 3	
2	<b>Course number</b>	0303322	
3	<b>Credit hours</b>	3	
	<b>Contact hours (theory, practical)</b>	3	
4	<b>Prerequisites/corequisites</b>	0303321	
5	<b>Program title</b>	BSc. In Chemistry	
6	<b>Program code</b>	0303	
7	<b>Awarding institution</b>	Science	
8	<b>School</b>	Science	
9	<b>Department</b>	Chemistry	
10	<b>Course level</b>	Third Year	
11	<b>Year of study and semester (s)</b>	Fall 2023/2024	
12	<b>Other department (s) involved in teaching the course</b>	N/A	
13	<b>Main teaching language</b>	English	
14	<b>Delivery method</b>	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online	
15	<b>Online platforms(s)</b>	<input type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....	
16	<b>Issuing/Revision Date</b>	8/10/2023	

### 17 Course Coordinator:

Name: Deeb Taher

Contact hours: 8.30-9.30 (sum, Tue, Thu)

Office number:

Phone number: 0791601872

Email: d.taher@ju.edu.jo

**18 Other instructors:**

Name:

Office number:

Phone number:

Email:

Contact hours:

Name:

Office number:

Phone number:

Email:

Contact hours:

**19 Course Description:**

As stated in the approved study plan.


**20 Course aims and outcomes:**
**A- Aims:**

To learn the principles of main-group (s and p block) element chemistry with an emphasis on synthesis, structure, bonding, and reaction mechanisms.

**B- Students Learning Outcomes (SLOs):**

CLO-1. The Group 13 Elements: Occurrence, extraction and uses, Physical properties, The elements, Simple hydrides, Halides and complex halides, Oxides, oxoacids, oxoanions and hydroxides, Compounds containing nitrogen, Aluminium to thallium: salts of oxoacids, aqueous solution chemistry and complexes, Metal borides, Electron-deficient borane and carbaborane clusters: an introduction.

CLO-2. The Group 15 Elements: Occurrence, extraction and uses, Physical properties, The elements, Hydrides, Nitrides, phosphides, arsenides, antimonides and bismuthides, Halides, oxohalides and complex halides, Oxides of nitrogen, Oxoacids of nitrogen, Oxides of phosphorus, arsenic, antimony and bismuth, Oxoacids of phosphorus, Oxoacids of arsenic, antimony and bismuth, Phosphazenes, Sulfides and selenides, Aqueous solution chemistry.

CLO-3. The Group 16 Elements: Occurrence, extraction and uses, Physical properties and bonding considerations, The elements, Hydrides, Metal sulfides, polysulfides, polyselenides and polytellurides, Halides, oxohalides and complex halides, Oxides, Oxoacids and their salts, Compounds of sulfur and selenium with nitrogen, Aqueous solution chemistry of sulfur, selenium and tellurium.

CLO-4. The Group 17 Elements: Occurrence, extraction and uses, Physical properties and bonding considerations, The elements, Hydrogen halides, Metal halides: structures and energetic, Interhalogen compounds and polyhalogen ions, Oxides and oxofluorides of chlorine, bromine and iodine, Oxoacids and their salts, Aqueous solution chemistry.

CLO-5. The Group 18 Elements: Occurrence, extraction and uses, Physical properties, Compounds of xenon, Compounds of krypton and radon.

Upon successful completion of this course, students will be able to:

0303322 Inorganic 3.		Student Outcomes (SO)						
		SO-1	SO-2	SO-3	SO-4	SO-5	SO-6	SO-7
Course Learning Outcomes (CLO)	CLO-1	✓	✓					
	CLO-2	✓	✓					
	CLO-3	✓	✓					
	CLO-4	✓	✓					
	CLO-5	✓	✓					

## 21. Topic Outline and Schedule:

Week	Lecture	Topic	Student Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1.1	The Group 13 Elements: Occurrence,	CLO-1	Face to Face	Power point	NA	Quizzes + Exam	fourth edition, Housecroft & Sharpe's Inorganic Chemistry
	1.2	extraction and uses,	CLO-1	Face to Face	Power point		Quizzes + Exam	
	1.3	Physical properties,	CLO-1	Face to Face	Power point		Quizzes + Exam	
2	2.1	The elements	CLO-1	Face to Face	Power point		Quizzes + Exam	
	2.2	Simple hydrides,	CLO-1	Face to Face	Power point		Quizzes + Exam	
	2.3	Halides	CLO-1	Face to Face	Power point		Quizzes + Exam	
3	3.1	complex halides,	CLO-1	Face to Face	Power point		Quizzes + Exam	
	3.2	Oxides	CLO-1	Face to Face	Power point		Quizzes + Exam	
	3.3	oxoacids,	CLO-1	Face to Face	Power point		Quizzes + Exam	
4	4.1	oxoanions and hydroxide	CLO-1	Face to Face	Power point		Quizzes + Exam	

		s,						
	4.2	Compounds containing nitrogen,	CLO-1	Face to Face	Power point		Quizzes + Exam	
	4.3	Aluminium to thallium: salts of oxoacids,	CLO-1	Face to Face	Power point		Quizzes + Exam	
5	5.1	aqueous solution chemistry and complexes,	CLO-1	Face to Face	Power point		Quizzes + Exam	
	5.2	Metal borides,	CLO-1	Face to Face	Power point		Quizzes + Exam	
	5.3	Electron-deficient borane and carbaborane clusters: an introduction.	CLO-1	Face to Face	Power point		Quizzes + Exam	
6	6.1	The Group 15 Elements: Occurrence, extraction and uses, Physical properties,	CLO-2	Face to Face	Power point		Quizzes + Exam	

	6.2	The elements, Hydrides, Nitrides, phosphides,	CLO-2	Face to Face	Power point		Quizzes + Exam	
	6.3	arsenides, antimonides and bismuthides,	CLO-2	Face to Face	Power point		Quizzes + Exam	
7	7.1	Halides, oxohalides and complex halides,	CLO-2	Face to Face	Power point		Quizzes + Exam	
	7.2	Oxides of nitrogen,	CLO-2	Face to Face	Power point		Quizzes + Exam	
	7.3	Oxoacids of nitrogen,	CLO-2	Face to Face	Power point			
8	8.1	Oxides of phosphorus, arsenic, antimony and bismuth,	CLO-2	Face to Face	Power point		Quizzes + Exam	
	8.2	Oxoacids of phosphorus,	CLO-2	Face to Face	Power point		Quizzes + Exam	
	8.3	Oxoacids of arsenic, antimony and bismuth,	CLO-2	Face to Face	Power point		Quizzes + Exam	

		Phosphazenes,						
9	9.1	Sulfides and selenides, Aqueous solution chemistry.	CLO-2	Face to Face	Power point		Quizzes + Exam	
	9.2	The Group 16 Elements: Occurrence, extraction and uses,	CLO-3	Face to Face	Power point		Quizzes + Exam	
	9.3	Physical properties and bonding considerations,	CLO-3	Face to Face	Power point		Quizzes + Exam	
10	10.1	The elements,	CLO-3	Face to Face	Power point		Quizzes + Exam	
	10.2	Hydrides, Metal sulfides,	CLO-3	Face to Face	Power point		Quizzes + Exam	
	10.3	polysulfides	CLO-3	Face to Face	Power point		Quizzes + Exam	
11	11.1	polyselenides and polytellurides,	CLO-3	Face to Face	Power point		Quizzes + Exam	
	11.2	Halides, oxohalides and complex	CLO-3	Face to Face	Power point		Quizzes + Exam	

		halides, Oxides,						
	11.3	Oxoacids and their salts,	CLO-3	<b>Face to Face</b>	Power point		Quizzes + Exam	
12	12.1	Compoun ds of sulfur and selenium with nitrogen,	CLO-3	<b>Face to Face</b>	Power point		Quizzes + Exam	
	12.2	Aqueous solution chemistry of sulfur, selenium and tellurium.	CLO-3	<b>Face to Face</b>	Power point		Quizzes + Exam	
	12.3	The Group 17 Elements: Occurren ce,	CLO-4	<b>Face to Face</b>	Power point		Quizzes + Exam	
13	13.1	extraction and uses,	CLO-4	<b>Face to Face</b>	Power point		Quizzes + Exam	
	13.2	Physical properties and bonding considerat ions,	CLO-4	<b>Face to Face</b>	Power point		Quizzes + Exam	
	13.3	The elements, Hydrogen halides,	CLO-4	<b>Face to Face</b>	Power point		Quizzes + Exam	



		Metal halides						
14	14.1	structures and energetic,	CLO-4	Face to Face	Power point		Quizzes + Exam	
	14.2	Interhalogen compounds and polyhalogen ions,	CLO-4	Face to Face	Power point		Quizzes + Exam	
	14.3	Oxides and oxofluorides of chlorine, bromine and iodine,	CLO-4	Face to Face	Power point		Quizzes + Exam	
15	15.1	Oxoacids and their salts, Aqueous solution chemistry.	CLO-4	Face to Face	Power point		Quizzes + Exam	
	15.2	The Group 18 Elements: Occurrence, extraction and uses, Physical properties,	CLO-5	Face to Face	Power point		Quizzes + Exam	
	15.3	Compounds of xenon,	CLO-5	Face to Face	Power point		Quizzes + Exam	



		Compounds of krypton and radon.						
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## 22 Evaluation Methods:

Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Quizzes	20	All	All	Every week	Face to Face
Mid	30	All	All	8	Face to Face
Final	50	All	All	16	Face to Face

## 23 Course Requirements

(e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc): N/A

## 24 Course Policies:

### A- Attendance policies:

Attendance is taken each class.

Six unexcused absences will result an "F" grade.

### B- Absences from exams and submitting assignments on time:

The highest four marks from all the quizzes will be considered. No make-up exams will be held for the quizzes, regardless of the excuse.

Course Coordinator will take care for student whom absent for the midterm exam.

Dean Office will take care for student whom absent for the final exam.

### C- Health and safety procedures:

N/A

### D- Honesty policy regarding cheating, plagiarism, misbehavior:

Students are expected to adhere to the standards of academic honesty. Collaboration and discussion are encouraged, cheating of any kind is not tolerated.



E- Grading policy:

F- Available university services that support achievement in the course:

## 25 References:

A- Required book(s), assigned reading and audio-visuals:

Inorganic Chemistry 4th Edition by Catherine Housecroft (Author), Alan Sharpe (Author)

B- Recommended books, materials, and media:

## 26 Additional information:

Name of Course Coordinator: Deeb Taher	Signature: -----	Date: 9/7/2023
Head of Curriculum Committee/Department: Deeb Taher	Signature: -----	
Head of Department: Firas Awwadi	Signature: -----	
Head of Curriculum Committee/Faculty: -	Signature: -----	
Dean: -----	Signature: -----	