



Course Syllabus
According to JORDAN National Qualification
Framework (JNQF)

Course Name: Inorganic Chemistry laboratory

Course Number: 11012223

General Course Information:

Course title	Inorganic Chemistry laboratory
Course number	11012223
Credit hours	3 Credit hours
Education type	Face-to-Face
Prerequisites/corequisites	11011204 + 11012222 مترامن أو
Academic Program	Bachelor
Program code	01
Faculty	Faculty of science
Department	Department of Chemistry
Level of course	3rd year
Academic year /semester	First semester 2022/2023
Awarded qualification	BSc degree of chemistry
Other department(s) involved in teaching the course	None
Language of instruction	English
Date of production/revision	2022/2023

Course Coordinator:

Coordinator's name	Ms. Dareen Hemedat
Office No	
Office Phone extension number	2635
Office Hours	
Email	dareenhmedat@yahoo.com

Other Instructors:

Instructor name	
Office No	
Office Phone extension number	
Office Hours	
Email	

Course Description (English/Arabic):

English	Experiments in Synthesis and characterization of transition –metal complexes.; Characterization methods used are: melting point determination, Electrical conductance; polarimeter, magnetic susceptibilities, IR and UV/VIS
Arabic	تجارب في تحضير و تشخيص مجموعة من المركبات التناسقية لعدد من العناصر الانتقالية بطرق فيزيائية و كيميائية مختلفة وباستخدام عدد من أجهزة التحليل الكيميائي المختلفة .

Textbook: Author(s), Title, Publisher, Edition, Year, Book website.

1. Inorganic Chemistry Laboratory manual, Isra University 2018-2019

References: Author(s), Title, Publisher, Edition, Year, Book website.

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

1. Collected Manual, Department of Applied Chemical Science

Course Educational Objectives (CEOs):

1.	To enhance the theoretical knowledge a acquired in the inorganic chemistry classes and to give the student the chance to apply what they have learned practically
2.	Carry out chemical experiments with the proper procedures, record experimental observations accurately, and interpret and evaluate the experiment data
3.	Able to design work both individually and as part of team

Intended Learning Outcomes (ILO's):

1.	Subject Intended learning outcomes (ILOs) describe what students are expected to know and be able to do at the end of the course. These outcomes are related to the knowledge, skill and competence that students acquire:	Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	Descriptors**
2. A	Knowledge and Understanding:				
3. A1	Student will be able to recognize fundamentals of inorganic chemistry by performing experiments	1	1	1	k
4. B	Intellectual skills:				
5. B1	Student will be able to analyze experiments data and presenting the results	2	2	4	s
6. C	Subject specific skills:				
7. C1	Student will be able to synthesis inorganic complex, purification, of inorganic compounds and identification of inorganic compounds using (conductivity, magnetic susceptibility, IR, UV, ...etc).	1,2,3	2,3	3,4	S,c
8. D	Transferable skills:				
9. D1	Student will be learn how to work individually and with partners effectively	3	7	3	c

***Bloom Taxonomy Levels**

Level #	1	2	3	4	5	6
Level Name	Knowledge	Comprehension	Application	Analysis	Evaluation	Synthesis

**** Descriptor (National Qualification Framework Descriptors): K : Knowledge, S: Skill, C: Competency.**

Program Learning Outcome (PLOs):

Program Learning Outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviours that students acquire as they progress through the program. A graduate of the (Chemistry) program will demonstrate:		Descriptors**		
		K	S	C
1.	An ability to acquire and apply new knowledge as required across different fields of chemistry, using appropriate learning strategies.	✓		
2.	An ability to identify, formulate, and solve problems by applying principles and theories of chemistry, science and mathematics based on critical thinking.		✓	
3.	An ability to develop and conduct appropriate experimentation, analyze, interpret data, and draw conclusions.		✓	
4.	An ability to apply scientific principles and theories of chemistry to serve community in health, economic and environmental sectors.			✓
5.	An ability to communicate effectively with a wide range of audiences			✓
6.	An ability to recognize ethical and professional responsibilities in the field of chemistry, and make informed judgments that consider the impact of chemistry in global, economic, environmental and societal contexts.			✓
7.	An ability to function effectively as a part of a team, take on leadership positions, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives			✓

**** Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency)**

Weekly Schedule (please choose the type of teaching)

- ☐ ✓ (6 hrs Face – To - Face)
- ☐ Hybrid (2 Lectures Face – To - Face +1 Lecture Asynchronous)
- ☐ Hybrid (1 Lectures Face – To - Face +1 Lecture Asynchronous)
- ☐ Online (2 Lectures Synchronous +1 lecture Asynchronous)

Week	six Hours (face to face)	Second Hour (.....)	Third Hour (.....)	Ach. ILOs	Ach. PLOs	Descriptors *
1	Safety rules and Laboratory Apparatus			C1&A1	2,3	s
2	The preparation of potassium tri(oxalato)aluminate.			C1 & B1&A1&D1	1,2,3, 7	s

3	The preparation of potassium tris(acetylacetonato)aluminium			C1&B1&A1&D1	1,2,3,7	s
4	The preparation of potassium tris(oxalato)manganates (III)			C1 & B1&A1&D1	1,2,3,7	s
5	Synthesis of Mn(acac) ₃			C1 & B1&A1&D1	1,2,3,7	s
6	Preparation of tris(thiourea)copper(I)sulfate and copper analysis			C1 & B1&A1&D1	1,2,3,7	s
7	Midterm Exam					
8	Synthesis of [Co(acac) ₃]			C1 & B1&A1&D1	1,2,3,7	s
9	Synthesis of [Cr(acac) ₃]			C1 & B1&A1&D1	1,2,3,7	s
10	Optical isomerism: preparation and resolution of [Co(en) ₃] ³⁺			C1 & B1&A1&D1	1,2,3,7	s
11	Geometrical isomers: Cis and trans isomers of K[Cr(ox) ₂ (H ₂ O) ₂].2H ₂ O.			C1 & B1&A1&D1	1,2,3,7	s
12	Conductance measurements : The preparation of trinitrotri-aminocobalt(III) and [Co(NH ₃) ₃ (Cl)3H ₂ O]			C1 & B1&A1&D1	1,2,3,7	s
13	Final Exam					

* K: Knowledge, S: Skills, C: Competency

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- (6 hrs Face – To - Face)
- Practice Labs
- Discussion Forums
- Quizzes
- Other Interactive online activities
- Reports

Course Policies:

A- Attendance policies:

The maximum allowed absences is 15% of the lectures.

B- Absences from exams and handing in assignments on time:

Midterm exam can be retaken based on approval of excuse by the instructor's discretion.

Not handing assignment on time will incur penalties.

C- Academic Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.

- Online Activities (Course Videos, Practice labs, Discussion Forums, Quizzes) **20%**
- Midterm **30 %**
- Final Exam **50 %**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

Required equipment:

- PC / Laptop with webcam and mic
- Internet Connection
- Access to the IU E-Learning Platform at: <https://elearn.iu.edu.jo/>
- E-learning plan
- Satisfaction questionnaires for online and face-to-face learning
- Software for e-learning
- Training

Assessment Tools implemented in the course:

- Final Exam
- Midterm Exam
- Quizzes
- Homework
- Practice Labs
- Discussion Forums
- Periodic reports for learning assessment
- Improvement plans for online or face-to-face teaching

Responsible Persons and their Signatures:

Course Coordinator	M.Sc. Dareen Hmedat	Completed Date	16/ 10 / 2022
		Signature	Dareen Hmedat
Received by (Department Head)	Dr. Manal Al Khabas	Received Date	/ /
		Signature	