



AMMAN - JORDAN

المستوى الذهبي

جامعة كل العرب

Course Syllabus
Faculty of Arts and Science
Academic Department Chemistry
Academic Year 2021 / 2022 Semester: first

Course Title:	Inorganic Chemistry Lab
Course No.:	1722322
Prerequisite:	1722221
Concurrent:	-
Department:	Chemistry
Coordinator:	Dr. Faten Aladwan
Mode of Instruction	On- campus Learning - 2 hours in-lab. (Synonym) learning

***Instructor:**

Lecturer	Office Phone	Room No.	Office Hours	E-mail
Dr. Faten Aladwan	1411	222	S,T: 9:30-11 M.,W: 12:30 – 2	f_aladwan@asu.edu.jo

Course Description

This course aims to expose the students to standard techniques in synthesis as well as characterization of inorganic compounds, also, reinforces the material the student have learned in the inorganic chemistry courses and apply what they have learned practically. In addition, the theoretical aspects of inorganic synthesis including: techniques for synthesis and purification, identification of inorganic compounds (IR, UV, conductivity, magnetic susceptibility, etc), and thermodynamic and kinetic aspects of inorganic synthesis will be covered.

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. Acquire essential practical skills for performing inorganic chemistry experiments

Amman – Jordan : عمان – الأردن : فاكس: 5232899 _ Tel: 5609999



جامعة كل العرب

- A2. Become familiar with standard techniques in synthesis as well as characterization of inorganic compounds
A3. Demonstrate knowledge about structure and bonding of complexes

B. Cognitive and Intellectual Skills (Student should):

- B1. Become familiar with putting in practice the knowledge they gained from theoretical lectures in Inorganic Chemistry courses.
B2. Analyze and interpret experimental data, critically assess data in literature and extract useful results from it.

C. Subject Specific Skills (Student should):

- C1. Evaluate and manage the risks of chemical substances and laboratory procedures.
C2. Use of laboratory equipment and standard procedures and safety rules.

D. Transferable Skills (Student should):

- D1. Learn how to work individually and with partners effectively.
D2. Learn how to write scientific chemistry reports.

Program Learning Outcomes (PLOs):

1.1	Describe the fundamentals of chemistry including structure, reactivity and properties of chemical substances, different situation of reaction and the states of matter.
1.2	Construct essential facts, principles and theories across the four principal areas of chemistry, i.e. analytical, organic, inorganic and physical.
2.3	Analyze chemical and spectral data to identify and confirm chemical structures as well as determine chemical composition.
2.5	Solve the scientific problems using different mechanisms and procedures.
3.3	Select appropriate techniques and procedures for chemical synthesis and analysis.
4.3	Interpret data derived from laboratory observations and measurements in terms of their significance and the theory underlying them.
5.1	Assemble and use properly chemistry experimental setups
5.2	Perform correctly quantitative measurements requiring accurate and precise manipulations



جامعة كل العرب

Course Learning Outcomes Alignment Matrix									
PLO	A1	A2	A3	B1	B2	C1	C2	D1	D2
1.1			✓						✓
1.2			✓						✓
2.3		✓			✓				
2.5					✓				✓
3.3	✓	✓					✓		
4.3					✓				
5.1							✓	✓	
5.2	✓					✓			

Course Contents and Schedule

Week	Day and Date	Experiments	Method of instruction	CLOs	PLOs
1	Wed. 20/10/2021	[Cr(acac) ₃] and its derivatives [Cr(Br-acac) ₃] or [Cr(NO ₂ -acac) ₃]	In-class lecture	All CLOs	All PIOs
2	Wed. 27/10/2021	[Co(acac) ₃]	In-class lecture Quiz 1	All CLOs	All PIOs
3	Wed. 3/11/2021	K ₃ [Cr(ox) ₃].3H ₂ O	In-class lecture	All CLOs	All PIOs
4	Wed. 10/11/2021	K ₃ [Co(ox) ₃].3H ₂ O.	In-class lecture Quiz 2	All CLOs	All PIOs
5	Wed. 17/11/2021	[Mn(acac) ₃]	In-class lecture	All CLOs	All PIOs
6	Wed. 24/11/2021	[Co(NH ₃) ₆]Cl ₃ , [CoCl(NH ₃) ₅]Cl ₂	In-class lecture Quiz 3	All CLOs	All PIOs
7	Wed. 1/12/2021	<i>Cis-</i> and <i>Trans-</i> K [Cr(C ₂ O ₄) ₂ (H ₂ O) ₂]	In-class lecture	All CLOs	All PIOs
8.	MID Term Exam				



جامعة كل العرب

9	Wed. 15/12/2021	[Ni(acac) ₂] ₃ , [Ni(acac) ₂ (H ₂ O) ₂], [Ni(acac) ₂ (py) ₂]	In-class lecture	All CLOs	All PIOs
10	Wed. 22/12/2021	[Cr(acetate) ₂] ₂ .2H ₂ O.	In-class lecture Quiz4	All CLOs	All PIOs
11	Wed. 29/12/2021	Cu-acac complexes	In-class lecture	All CLOs	All PIOs
12	Wed. 29/12/2021	K ₃ [Fe(ox) ₃].3H ₂ O	In-class lecture Quiz 5	All CLOs	All PIOs
13	Wed. 5/1/2022	[Hg(dithizonate) ₂]	In-class lecture	All CLOs	All PIOs
14.	Final Exam				

Grading Plan and Assessment Tools

Assessment Tools	Weights	Due date
Mid-term	30	TBA
Assignments	-	-
Quizzes	10	TBA
Inter active lectures	-	-
Group Work	-	-
Presentation	-	-
Reports	10	TBA
Project	-	-
Case-Study	-	-
Final Exam	50	TBA



AMMAN - JORDAN

المستوى الذهبي

جامعة كل العرب

Supplementary Reading

Textbook:

Practical inorganic chemistry manual.

References:

1. Inorganic Experiments, by J. Derek Woollins (Ed.), 2nd edition, Wiley-VCH, 2003.
2. Synthesis and Technique in Inorganic Chemistry, by Robert J. Angelici, W. B. Saunders Co., London, 1977.
3. Project ACAC: An Experimental Investigation in Synthesis and Structure, by Harry B. Gray, John G. Swanson, Thomas H. Crawford, Bogden and Quigley, Inc., New York, 1972.
4. Inorganic Chemistry, by Catherine Housecroft and Alan Sharpe, 2nd edition, Pearson Education, 2005
5. Basic Inorganic Chemistry, by F. A. Cotton, G. Wilkinson and P. L. Gaus 3rd edition, John Wiley, 1995.
6. Inorganic Chemistry, by J. E. Huheey, E. A. Keiter, and P. L. Keiter, 4th edition, Harper Collins, 1993.
7. Inorganic Chemistry, by G. L. Miessler and D.A. Tarr, 3rd edition, Pearson, 2004.
8. Inorganic Chemistry, by D.F. Shriver and P. W. Atkins, 4th edition, Oxford, 2006.



ASU
جامعة العلوم التطبيقية الخاصة
APPLIED SCIENCE PRIVATE UNIVERSITY



AMMAN - JORDAN

المستوى الذهبي

جامعة كل العرب

Subject Coordinator	Dr. Faten Aladwan	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.

Amman – Jordan : عمان – الأردن: _ Tel: 5609999 _ فاكس: 5232899 _

UF 28 /2 : رمز النموذج:

رقم القرار 24 / 233

تاريخ الاعتماد 2021/10/18