

University of Petra		
Faculty of Arts & Sciences		كلية الآداب والعلوم
Department of Chem.	جامعة البتراء	قسم الكيمياء

**Course Syllabus**

Year : 2018 / 2019 Semester : 2<sup>nd</sup>

Course No.	Course Title	Prerequisite	co-requisite	Credit Hours Lectures / Lab.
101431	Practical Inorganic Chemistry	101232		2

Instructor Name	e-mail	Office No.	Office ext.	Office Hours
Dr. Hani .A.Yasin	<a href="mailto:hmohammad@uop.edu.jo">hmohammad@uop.edu.jo</a>	7213	7213	Tue.,Thu. 10-12 Mon10-11

<b>Coordinator's Name:(if applicable)</b>	
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<b>Course Description</b>	Synthesis and characterisation of transition –metal complexes.; Characterisation methods used are : melting point determination,Electrical conductance ; IR ; UV/VIS.
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**Course Objectives**

- To instill in students a sense of enthusiasm for practical inorganic chemistry, & an appreciation of its applications in different contexts.
- To develop in students the ability to apply their chemical knowledge and skills to the solution of practical problems in inorganic chemistry.
- To provide students with a knowledge and skills base from which they can proceed to further studies in more specific areas of inorganic chemistry.
- To generate in students an appreciation of the importance of practical inorganic chemistry.
- To provide students with a broad and balanced foundation of chemical knowledge and practical skills in the field of inorganic chemistry..

**Course Intended Learning Outcomes (ILOs) and their Alignment with Program ILOs, Teaching and Learning Methods, and Assessment Methods:**

Upon successful completion of this course, students are expected to achieve the following learning outcomes:

Course ILOs	Program ILOs	Teaching and Learning Method	Assessment Method
<b>Knowledge (K)</b>			
- Demonstrate knowledge about structure and bonding of complexes	K1	Instructions , Discussion in the Lab.& Performing experiments	Exam.I,II
- identify complexes by IR,UV/VIS and electrical conductance	K3		Exam.I,II
<b>Intellectual Skills (I)</b>			
To calculate physical properties of complexes.	I2		Exam.I,II
<b>Practical skills (P)</b>			
1- Use of laboratory equipment and standard procedures & safety.	P1	Instructions , Discussion in the Lab.& Performing experiments	Reports & Practical
4- To write scientific chemistry reports..	P4		Reports & Practical
<b>Transferable Skills (T)</b>			

**Course Schedule**

Course Schedule			
Week	Experiment No.	Complex	Reference/ Page
1	Experiment (1)	[Co(NH <sub>3</sub> ) <sub>4</sub> CO <sub>3</sub> ]NO <sub>3</sub> & [Co(NH <sub>3</sub> ) <sub>5</sub> Cl]Cl <sub>2</sub>	Lab. Manual/3
2	Experiment (2)	Linkage isomers : Synthesis and characterization of [Co(NH <sub>3</sub> ) <sub>5</sub> ONO]Cl <sub>2</sub> & [Co(NH <sub>3</sub> ) <sub>5</sub> NO <sub>2</sub> ]Cl <sub>2</sub>	Lab. Manual/11
3	Experiment (3)	[Co(NH <sub>3</sub> ) <sub>3</sub> (NO <sub>2</sub> ) <sub>3</sub> ]	Lab. Manual/12
4	Experiment (4)	Cr(acac) <sub>3</sub>	Lab. Manual/13
5	Experiment (5)	Cr(acac-Br) <sub>3</sub>	Lab. Manual/28
6	Experiment (6)	Cr(acac-NO <sub>2</sub> ) <sub>3</sub>	Lab. Manual/32
7		Mid.term exam	
8	Experiment (7)	Co(acac) <sub>3</sub>	Lab. Manual/33
9	Experiment (8)	cis-K[Cr(C <sub>2</sub> O <sub>4</sub> ) <sub>2</sub> (H <sub>2</sub> O) <sub>2</sub> ] & trans- K[Cr(C <sub>2</sub> O <sub>4</sub> ) <sub>2</sub> (H <sub>2</sub> O) <sub>2</sub> ] or Synthesis of trans-& cis-Co(en) <sub>2</sub> Cl <sub>2</sub>	Lab. Manual/37
10	Experiment (9)	Preparation of hexakis-(urea)chromium(III) chloride , [Cr(urea) <sub>6</sub> ]Cl <sub>3</sub>	Lab. Manual/38
11	Experiment(10)	[Ni (py) <sub>4</sub> ]Cl <sub>2</sub>	Lab. Manual/39
12	Experiment (11)	Preparation of Acetyl ferrocene or bis(N,N' disilycylethylene)-η-aquadicobalt (II) ,	Lab. Manual
	Appendix		Lab. Manual/43

**Assessment Methods:**

Method	Work and Discussions in the lab.
Contact Hours	5 practical hrs / week

Assessment method	Grade	Comments
mid exam	30	
Quizzes	--	
Final	40	Set by registrar
reports	20	
Attitude and performance in the lab .	10	
<b>Total</b>	<b>100</b>	

**Learning References:**

<b>1- Textbook (s)</b> : Practical inorganic chemistry manual,
<b>2- References:</b> 1) Spectroscopy in Inorganic Chemistry(Theory) ; Dr. J.Cooke, Dept. of Chem., university of Alberta , 2005 2) Internet notes.
<b>3- Other Resources:</b> <<Labs, computer resources, lecture rooms needed for the course>>

**Grading Scale :**

93-100 A ; 86-92 A<sup>-</sup> ; 80-85 B<sup>+</sup> ; 75-79 B ; 70-74 B<sup>-</sup> ; 65-69 C<sup>+</sup> ; 60-64 C ; 56-59 C<sup>-</sup> ; 53-55 D<sup>+</sup> ; 50-52 D ; 45-49 D<sup>-</sup>

**Alignment of Teaching and Learning Methods, Assessment and Course ILOs:**

Teaching method	Contact Hours	Assessed through	ILOs numbers
Instructions and discussions in th lab.	5 hrs / week	Exams, Reaction of students in labs. & reports	All ILOs

**Course Policies<sup>1</sup>**

- **Attendance Policy:** University regulations apply to attendance.
- **Academic Honesty:** Academic dishonesty is an unacceptable mode of conduct, and will not be tolerated in any form at University of Petra. All persons involved in academic dishonesty and plagiarism in any form will be disciplined in accordance with University rules and regulations.

Approved by	Name	Date	Signature
Head of Department			
Faculty Dean			

<sup>1</sup> Additional information may be added in this section according to the nature of the course.