

## CHEM 323 Syllabus

Course Code	Course Name	Credits	Prerequisite(S)	Classification
CHEM 323	Inorganic Chemistry Experimental	5.2 (9 hr Lab)	CHEM 322	Department Requirement

**Course Description** This course is planned to give students an experimental lab work of coordination chemistry by preparing several metal complexes and explaining the data analysis of metal coordination compounds collected from different spectroscopic techniques.

**Class** Labs are held 2 time/week for 9 hours.

### Scheduling

**Textbook** 1-Synthesis and Technique in Inorganic Chemistry, Greogy Girolami, Thomas Rauchfuss and Robert Angelici, 1999.  
2-Practical Inorganic Chemistry: Preparations, reactions and instrumental methods, G. Pass and H. Sutcliffe, 2<sup>nd</sup> ed, 1974.

**Course Coordinator**  
Dr. Maymounah Alrayyani  
MSc Obada Hatahet  
Dr. Khaled AlzahraniDr. Khaled Alzahrani

Relationship to SOs	1	2	3	4	5	6
	X		X			X

**CLOs** By the end of this course student will be able to:  
CLO1. Clarify the reaction equation to synthesis each coordination compounds. (SO1)  
CLO2. Demonstrate the synthesis of coordination compounds. (SO1)

CLO5. Prepare the standard solutions to calculate the concentration of inorganic compounds. (SO1)

CLO3. Explain the data analysis of metal coordination compounds collected from different spectroscopic techniques. (SO3)

CLO4. Organize the lab report with the collected data from different spectroscopic techniques and the calculations (theoretical and experimental) for each experiment. (SO3)

CLO6. Participate in teamwork with the responsibility of jointly engaged in tasks connected to teamwork. (SO6)

## Contents

List of Topics	No. of Weeks
Preparation and analysis of Tetra-ammine copper(II) Sulfatemonohydrate	2
Preparation and analysis of Tris(thiourea) Copper(I) Sulfate	1
Preparation of carbonatotetraammine cobalt(III) Nitrate	2
Preparation and analysis of Tris(ethylenediamine)nickel(II) Chloride	1
Preparation and analysis of double salt diammoniumdisulfato nickel(II) Hexahydrate	2
Preparation and analysis of Iron(II) oxalate and Potassium trioxalatoferrate(III) trihydrate	2
Preparation and analysis of tris(acetylacetonato) iron(III)	1
Preparation and analysis of cis- and trans-Potassium Dioxalatodiaqua chromate(III)	2
Preparation and analysis of tris(acetylacetonato) aluminum (III)	1
Preparation and analysis of tris(acetylacetonato) manganese(III)	1

