

نموذج توصيف مقرر
Course Description Form

Name of College\Faculty : Science
Name of Department: Chemistry

اسم الكلية:
اسم القسم العلمي:

Course Name	Inorganic Chemistry II	اسم المقرر
Course No.	336	رقم المقرر
No. of Credits	3	عدد الوحدات
Theoretical Hours	2.5 hours/week	عدد الساعات النظرية
Practical Hours	0	عدد الساعات المحلّية
Course topics		مواضيع المقرر
1. The chemistry of the <i>d</i> - block elements (<i>first, second, third rows</i>). 2. The chemistry of the <i>f</i> -block elements (<i>lanthanides and actinides</i>). 3. Coordination compounds bonding (VBT, CFT, MOT), spectral, and magnetic properties. 4. Coordination numbers, structures, and type of isomerism of the coordination compounds. 5. Type of reactions, kinetics, and mechanisms of coordination compounds. 6. Introduction to bioinorganic chemistry 7. Catalysis and some industrial processes.		
Text book: (Name, Author , Year , Publisher)		عنوان الكتاب : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)
Inorganic Chemistry by Catherine Housecroft and Alan Sharpe, latest edition, Pearson.		
References: (Name , Author , Year . Publisher)		عنوان المرجع : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)
Inorganic Chemistry by Gary Miessler, latest edition, Pearson. Inorganic Chemistry by Duward Shriver, latest edition, W. H. Freeman.		

Prerequisites: CHEM 233				متطلبات المقرر	
Grading	Exams	55	%		الاختبارات
	Quizzes		%		امتحانات قصيرة
	H.W.	5	%		واجبات
	Project (field study)		%		مشاريع (دراسة ميدانية)
	Final	40	%		الاختبار النهائي
	100 %				آلية رصد المقرر

Chapter	Title
19	d-Block metal chemistry: general considerations
20	d-Block metal chemistry: coordination complexes
21	d-Block metal chemistry: the first row metals
22	d-Block metal chemistry: the heavier metals
24	Organometallic compounds of d-block elements
25	Catalysis and some industrial processes
26	d-Block metal complexes: reaction mechanisms
27	The f-block metals: lanthanoids and actinoids
29	The trace metals of life

Course objectives					
No.	Course Objectives (Learning Outcomes)	Example(s) of relevant (Topics and activities)	Recommended Level to satisfy the objectives		
			High	Medium	Low
1	Define the general properties of the <i>d-block</i> elements.	The chemistry of the d-block elements (first, second, third rows).	X		
2	Learn the concept of the formation of the coordination compounds and the factors affecting their stability	Coordination compounds bonding (VBT, CFT, MOT), spectral, and magnetic properties; Type of reactions, kinetics, and mechanisms of	X		



		coordination compounds.			
3	Describe the chemical and the physical properties of the <i>f</i> -block elements	Describe the chemical and the physical properties of the <i>f</i> -block elements.	X		
4	Interpret the electronic spectral and the magnetic properties of the coordination compound.	Coordination compounds bonding, spectral, and magnetic properties.	X		
5	Learn the principle of metal complexes as a catalyst in industrial process	Catalysis and some industrial processes.		X	
Fields	Inorganic Chemistry				
Skills	1. Analytical interpretation of coordination compound bonding using VBT, CFT, and MOT models. 2. Identification and comparison of coordination numbers, geometries, and isomerism in metal complexes. 3. Evaluation of electronic, magnetic, and spectral properties of transition- and f-block elements. 4. Application of chemical kinetics and thermodynamics to explain reaction mechanisms of coordination compounds. 5. Understanding of catalytic and bioinorganic processes involving metal complexes.				
Coordinator (Name and Rank) :		Convener of the Inorganic and Analytical Chemistry group			
Signature and stamp :					
Date:		8\ 11 \2025			