جامعة : المنصورة

كـــلية : العلوم

قسم / الكيمياء

توصيف مقرر دراسى

١-بيانات المقرر		
الرمز الكود :ك٣٢١	**أسم المقرر** : Chemistry of Transition Metals, d-Block elements	**المستوى : الثالث**
البرنامج : الكيمياء	**عدد الوحدات الدراسية:٣ نظرى : ٢ تمارين: - عملى: ٣**	

٢- هدف المقرر :	**For students undertaking this course, the aims are to:** • Introduce the basic concepts of chemical bonding and symmetry. • Study of the symmetry elements and operations. • Study the general properties of transition metals in terms of electronic configuration.
٣- المستهدف من التدريس المقرر:	
أ- المعلومات والمفاهيم:	**a- Knowledge and Understanding :** **On completing this course, students will be able to:** a1- list the different symmetry elements and operations. a2- describe the nature of chemical bonding. a3- explain the general properties of transition metals.
ب- المهارات الذهنية	**b- Intellectual Skills: On completing this course, students will be able to:** b1- outline a suitable method to prepare transition metal compounds. b2- suggest the general properties of a transition metal from its electronic configuration. b3- predict the symmetry of a molecule from chemical calculations of ionic radii.
ج- المهارات المهنية الخاصة بالمقرر:	**c-Professional and Practical Skills: On completing this course, students will be able to:** c1- Solve problems using a range of formats and approaches.
د- المهارات العامة :	**d-General and Transferable Skills: On completing this course, students will be able to:**

d1- exhibit the sense of beauty and neatness in Good's ability and creativities.

٤- محتوى المقرر:

Nature of chemical bonding and symmetry:

- Bonding and structure- transitions between the main types of bonding structures of ionic crystals
- Chemical calculations of ionic radii
- Symmetry elements and operations - definitions and descriptions of symmetry elements and operations

The Chemistry of Transition Metals (d-Block elements):

- General properties of titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper and zinc groups in terms of electronic configuration

Oxidation states and chemical properties of the elements and their compounds

٥- اساليب التعليم والتعلم:

1 - lectures using data show and board

2 - solving problem and exercises

3 - home works , reports and discussions

٦- أساليب التعليم والتعلم للطلاب ذوى القدرات المحدودة:

The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.

٧- تقويم الطلاب :

أ- الأساليب المستخدمة :

7- Student Assessment Methods

Final exam	**to assess**	a1-a3, b1-b3,c1,d1
Oral exam	**to assess**	a1-a3, b1-b3
Mid-term exam	**To assess**	a1-a3, b1-b3
practical exam	**To assess**	

ب- التوقيت :

Assessment Schedule

Assessment 1	**Week #final exam**	**Week 14**
Assessment 2	**Week #oral exam**	**Week 14**

Assessment 3	**Week #mid-term exam**	**Week 4,8,12**	
Assessment 4	**Week practical exam**	**Week 12**	

ج- توزيع الدرجات :

Weighting of Assessments

Final-Term Examination	**60%**
Oral Examination	**10%**
Practical Examination	**20%**
Semester work	**0%**
Mid-term examination	**10%**
Other types of assessment	**0%**
Total	**100%**

٨- قائمة الكتب الدراسية والمراجع :

Inorganic Chemistry, 3rd Year Chemistry	أ- مذكرات:
	ب- كتب ملزمة
Inorganic Chemistry, Duward Shriver, Peter Atkins, Oxford University Press; Fifth Edition edition (2009) Concise Inorganic Chemistry, J.D. Lee, Chapman & Hall, 1996	ج- كتب مقترحة :
http://www.d.umn.edu/~pkiprof/ChemWebV2/index2.html	د- دوريات علمية أو نشرات..

مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسى

المحتويات للمقرر	أسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
Nature of chemical bonding and symmetry:					
• Bonding and structure-transitions between the main types of bonding structures of ionic crystals	1-4	a1,a2	b3		d1

• Chemical calculations of ionic radii	5-8	a1,a2	b3	c1	
• Symmetry elements and operations - definitions and descriptions of symmetry elements and operations	9-13	a1,a2	b3	c1	d1
The Chemistry of Transition Metals (d-Block elements):					
• General properties of titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper and zinc groups in terms of electronic configuration	1-6	a3	b1,b2	c1	
• Oxidation states and chemical properties of the elements and their compounds	7-13	a3	b1,b2	c1	

أستاذ المادة : أ.د./محسن محمود مصطفى عبد الرحمن

رئيس مجلس القسم العلمي : أ.د /سالم السيد سمرة