جامعة : المنصورة

كـــلية : العلوم

قسم / الكيمياء

توصيف مقرر دراسى

١-بيانات المقرر		
الرمز الكود :ك٣٣٢	**أسم المقرر:** Organic chemistry 1B Organic synthesis and Organomatallic	**المستوى : الثالث**
البرنامج : الكيمياء	**عدد الوحدات الدراسية: ٢ نظرى : ٢ تمارين: ١ عملى: -**	

٢- هدف المقرر :	**For students undertaking this course, the aims are to:** • Introduce the basic concepts of organic synthesis and organometallic chemistry. • Study the different classes of condensation reactions (acid and base-catalyzed reactions). • Study the famous organic reactions and their wide applications in synthesis of different organic compounds.
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 types of condensation reactions. a2- explain the different famous organic reactions and their application in organic synthesis. a3- describe the most common organometallic reagents and their use in organic synthesis.
ب- المهارات الذهنية	**b- Intellectual Skills: On completing this course, students will be able to:** b1- apply suitable reactions to prepare a target organic molecule. b2- predict an appropriate organometallic reagent to synthesize a required organic compound. b3- expect the theoretical product of a hypothetical reaction.
ج- المهارات	**c-Professional and Practical Skills: On completing this course,**

students will be able to: c1- Solve problems using a range of formats and approaches.	المهنية الخاصة بالمقرر:
d-General and Transferable Skills: On completing this course, students will be able to: d1- Solve problems on scientific basis.	د- المهارات العامة :
• Organic synthesis: Formation of carbon-carbon bonds : (A) Base catalyzed condensation: condensation of carbanions with aldehydes, ketones and esters • The alkylation of carbanions – Addition of carbanions to activated olefins • B) Acid catalyzed condensations: The self condensation of olefins • Friedel Craft's reaction – Perkin reaction – condensation of aldehydes and ketones – Mannich reaction • Pericyclic reactions: Principles – cycloadditions – electrocyclic additions-chelotropic reactions – sigmatropic rearrangements – the ene reaction. • Molecular rearrangements: Types of rearrangements – 1,2-rearrangements – aromatic rearrangements. • Organometallic: Organolithium compounds • Organomagnesium halides Ogranosilicon compounds	٤- محتوى المقرر:
5.1 - Lectures using data show and board 5.2 - Problem classes and group tutorial 5.3-Reports and discussion groups	٥- اساليب التعليم والتعلم:
The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.	٦- أساليب التعليم والتعلم للطلاب ذوى القدرات المحدودة :
٧- تقويم الطلاب :	
7- Student Assessment Methods	أ- الأساليب المستخدمة :

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

exam				

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**

ج- توزيع الدرجات :

Weighting of Assessments

Final-Term Examination	**80%**
Oral Examination	**10%**
Practical Examination	**0%**
Semester work	**10%**
Mid-term examination	**0%**
Other types of assessment	**0%**
Total	**100%**

٨- قائمة الكتب الدراسية والمراجع :

Introduction to Organic Synthesis & Organometallic compound	**أ- مذكرات:**
	ب- كتب ملزمة
Organic Chemistry, T. W. Graham Solomons, T. W. Graham Solomons, Wiley; 8 edition (2003) Fundamentals of Organic Chemistry, S. Nafis Haider, 2005.	**ج- كتب مقترحة :**
http://en.wikipedia.org/wiki/Organic_chemistry http://www.organic-chemistry.org/ http://www.acdlabs.com/iupac/nomenclature/	**د- دوريات علمية أو نشرات..**

مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسى

المحتويات للمقرر	اسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
Organic synthesis					
• Formation of carbon-carbon bonds : (A) Base catalyzed condensation: condensation of carbanions with aldehydes, ketones and esters	1-3	a1,a2	b1,b3		
• The alkylation of carbanions – Addition of carbanions to activated olefins	4	a1,a2	b1,b3		
• (B) Acid catalyzed condensations: The self condensation of olefins	5	a1,a2	b1,b3		
• Friedel Craft's reaction – Perkin reaction – condensation of aldehydes and ketones – Mannich reaction	6-7	a1,a2	b1,b3		
• Pericyclic reactions: Principles – cycloadditions – electrocyclic additions- chelotropic reactions – sigmatropic rearrangements – the ene reaction.	8-10	a1,a2	b1,b3	c1	d1
• Molecular rearrangements: Types of rearrangements – 1,2-rearrangements – aromatic rearrangements.	11-13	a1,a2	b1,b3	c1	d1
Organometallic					
• Organolithium compounds	1-4	a3	b2,b3		
• Organomagnesium halides	5-8	a3	b2,b3		
• Ogranosilicon compounds	9-13	a3	b2,b3		

أستاذ المادة : أ.د./سعد السيد المرسى ابراهيم

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