

معلومات المقرر * (Course Information):

اسم المقرر:	كيمياء البوليمرات و البتر وكيمائيات
رقم المقرر:	CHM324
اسم ورقم المتطلب السابق:	كيمياء عضوية - ٢ CHM-222
اسم ورقم المتطلب المرافق:	لا يوجد
مستوى المقرر:	الخامس
الساعات المعتمدة:	٢

Module Title:	Chemistry of Polymers and Petrochemical
Module ID:	CHM324
Prerequisite (Co-requisite) :	Organic chemistry-2. CHM-222
Co-requisite :	-
Course Level:	Fifth Level
Credit Hours:	2

وصف المقرر : Module Description

This course introduces Introduction, nomenclature of polymers, classification of polymers, Factors affecting the properties of polymers, Types of polymerization, condensation and addition polymerization, Study of reaction rates and Mechanism of polymerization

أهداف المقرر : Module Aims

1	Recognize the outline definition of polymer chemistry and polymer technology	١
2	Demonstrate understanding the basic principles of the polymerization process and the technical conditions used in the polymerization processes	٢
3	Identify the physical, chemical and thermal properties of polymers	
4	Understand that oil can be used as a source of many Petrochemicals	



مخرجات التعليم: Learning Outcomes:



Upon successful completion of this course, the student will be able to :

1	Identify the physical and chemical and thermal characteristics of polymers	١
2	Demonstrate understanding that condensation polymers are formed from molecules containing COOH, OH and NH ₂ groups.	٢
3	Recall the formation, structure and uses of the polyester polyethylene terephthalate polyamide nylon ,polystyrene and other types of polymers.	٣
4	Out line that Petrochemicals can be synthesized from oil fractions like natural gas, methane ,ethylene, proplene ,benzene, toluene and xylene	٤
5	draw polymer structures from monomers and vice versa	٥
6	Explain that polyesters and polyamides can be hydrolyzed and are, therefore, biodegradable.	٦
7	Solving some of the exercises in groups	
8	Communicate effectively in oral and written form.	
9	Use the web chemical data base	
10	Calculate the degree of polymerization and the molecular weight of the polymer	

محتوى المقرر: Course

Contents:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
2	1	Introduction , nomenclature of polymers
4	2	classification of polymers
2	1	Factors affecting the properties of polymers
4	2	Types of polymerization: condensation and addition polymerization. Study of reaction rates
4	2	Mechanism of polymerization
4	2	Examples in preparation of selected polymers
2	1	Isomerism
10	5	Petrochemicals from Natural gas, Ethane ,Ethylene, Proplene, Benzene, Toluene and Xylene





Textbook and References:

الكتاب المقرر والمراجع المساندة:

ISBN	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم الكتاب المقرر Textbook title
978-1-4614-2211-2	2012	Springer-Verlag New York	A. Ravve	Principles of Polymer Chemistry
ISBN	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
978-0-88415-315-3	2001	Elsevier Inc	<i>Sami Matar and Lewis F. Hatch</i>	Chemistry of Petrochemical Processes (Second Edition)

* يتم تعبئة معلومات المقرر فقط باللغتين العربية والانجليزية وباقي المعلومات بلغة التدريس المعتمدة ويكرر لكل مقرر في الخطة الدراسية

* Course Information should be filled in Arabic and English. Other information should be filled using the approved teaching language at the college.



