



جامعة المجمعة
Majmaah University

وكالة الجامعة للشؤون التعليمية
إدارة البرامج الدراسية والتطوير

نموذج (5)

مختصر توصيف المقرر

(Course Syllabus)

معلومات المقرر * (Course Information):

اسم المقرر:	كيمياء صناعية
رقم المقرر:	CHM 452
اسم ورقم المتطلب السابق:	لا يوجد
اسم ورقم المتطلب المرافق:	لا يوجد
مستوى المقرر:	المستوي السابع
الساعات المعتمدة:	ساعتان
Module Title:	Industrial chemistry
Module ID:	CHM 452
Prerequisite (Co-requisite) :	None
Co-requisite :	None
Course Level:	seventh level
Credit Hours:	2 hours

Module Description

وصف المقرر :

The course offered as elective course at seventh level of the chemistry curriculum course, with 2 credit hours.

Industrial Chemistry is the branch of chemistry, which applies physical and chemical processes towards the transformation of raw materials into products that are of benefit to humanity. This course is offered as a clear to develop the skills in chemical industry. This course demonstrates the basic ideas of Industrial Chemistry, Organic reactions employed in industrial synthesis, Position in the industry of fine chemicals.

This course study selected manufacturing processes to the effects of changing technology and economics on the choice of production route. This course demonstrates the constrains on chemical manufacture and environmental issues in turning chemicals into products.



Module Aims

أهداف المقرر :

1	Produce graduates who will be highly skilled in this activity	1
2	Introduce students to the chemical industry and its importance and main features	2
3	Illustrate the effect of changing economics and technology on the choice of production route.	3
4	Show the limited number of sources of industrial organic chemicals – oil and gas, coal, animal and vegetable oils and fats and biomass.	4
5	Understand and appreciate Position of the industry of wonderful chemicals.	5
6	Illustrate the benefits of superior chemical technology	6

Learning Outcomes:

مخرجات التعليم:

1	Explain the importance and the main features of the organic chemicals industry.	1
2	Discuss the main sources of organic chemicals and their relative importance .	2
3	acquire knowledge of industrial methods of production of basic chemicals and intermediates.	3
4	knowledge to understanding the manufacture of organic chemicals.	4
5	Understand and appreciate the importance of the chemical industry and the vital role which it plays in our lives.	5
6	describe the differences between laboratory synthesis and industrial production of organic chemicals.	6
7	Apply their existing organic chemistry knowledge to understanding the manufacture of organic chemicals	7
8	Gain experience in the chemical and allied industries	8

محتوى المقرر: Course

Contents:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
	2	Introduction to the Chemical Industry, The importance of research and development in Chemical Industry. Organic reactions employed in industrial synthesis. The materials and technological products are some industrial sectors that are based in the organic chemistry achievement.



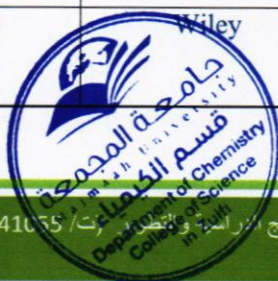
2	1	Sources of industrial organic chemicals Outline of main sources - animal and vegetable oils and fats; biomass; coal; petroleum, natural gas and LNG (liquefied natural gas). b) Biomass and animal and vegetable oils. Their conversion to bio-diesel, soap, perfumes and cosmetics. Fermentation processes and production of selected fine chemicals and pharmaceuticals. c) Coal .Coal distillation, gasification and liquefaction, and conversion of coal to syngas. Selected fine chemicals from syngas; coal and dyes.
4	2	Position in the industry of fine chemicals such as advanced intermediates, vitamins, flavor and fragrance chemicals, pesticides, fertilizer.
2	1	Fuel production processes from biomass.
4	1	Biotechnology for the Production of Flavor and Fragrance.
2	1	Fermentation technology-cell biomass (Bakers' yeast production from sugars).
4	2	Catalysis in industrial organic chemistry. Discussion of the role of catalysts in industrial chemical processes.
2	1	Elastomers (Rubbers). Discussion on polyisoprenes; natural rubber, styrene-butadiene (SBR) rubber; "synthetic" natural rubber.
4	2	Selected manufacturing processes to illustrate the effects of changing technology and economics on the choice of production route, using case studies. Examples are (a) phenol and (b) vinyl chloride.
2	1	Textile Manufacturing.
2	1	Constrains on chemical manufacture. Environmental issues in turning chemicals into products.
30	15	Total

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
ISBN 9783527304462	2013	Wiley	Jess, A.; Wasserscheid, P.	Chemical technology an integral textbook
ISBN 9783527305780.	2003	Wiley	Weissermel, K.; Arpe, H.- J.	Industrial organic chemistry

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	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
ISBN 9781444320251.	2013	Wiley	Moulijn, J. A.; Makkee, M.; Diepen, A. van.	Chemical process technology [on line]

* 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.

