



University of Petra		 جامعة البتراء - خمسة وعشرون عاما University of Petra Anniversary
Faculty of Arts and Sciences		كلية الآداب والعلوم
Department of Chemistry		قسم الكيمياء

Course Syllabus

Year : 2019/2020

Semester: 20193

Course No.	Course Title	Prerequisite	Co-requisite	Credit Hours Lectures/ ECTS: European Credit Transfer System
101454	Organic Industries (1)	101212	-	3/5

Instructor Name	E-mail	Office No.	Office Ext.	Office Hours
Dr. Nabil Eldurini	nabild@uop.edu.jo	7111	7111	Sun, Mon, Tue, Wed, Thu 10.30 – 11.30

Coordinator's Name: (if applicable)	-
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Course Description	Basic Principles of Organic Industries; Other Organic Industries Including Fermentations; Organic Industries Based on Petroleum Products.
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Course Objectives

- To instill in students a sense of enthusiasm for industrial organic chemistry, an appreciation of its application in different contexts and to involve them in an intellectually stimulating and satisfying experience of learning and studying.
- To develop in students the ability to apply their chemical knowledge and skills to the solution of theoretical and practical problems in chemical industry.
- To provide students with a knowledge and skills base from which they can proceed to further studies in specialized areas of industrial chemistry or multi-disciplinary areas involving industrial organic chemistry.
- To generate in students an appreciation of the importance of organic industries in an economic, environmental and social context.

Course Intended Learning Outcomes (ILOs) and their Alignment with Program ILOs:

Upon successful completion of this course, students are expected to achieve the following learning outcomes:

Course ILOs	Program ILOs	Teaching and Learning Method	Assessment Method
Knowledge and Understanding (K): By the end of the course students should be able to:			
1. Name organic compounds in industry.	K(2)	Lectures using data show and Models	Exams
2 Identify major aspects of chemical terminology in organic industries.	K(1)	Lectures using data show	Exams
Intellectual Skills (I): By the end of the course students should be able to:			
1. calculate cost of a chemical process using cost calculation sheet.	P(2)	Lectures using data show	Exams
2. Recognise and categorise different types of industrial catalysts and their uses.	I(1)	Lectures using data show	Exams
3. Identify major processes used in organic industries.	P(3)	Lectures using data show	Exams

Course Schedule:

Units	Topics	Topic Details	Reference
1	The Chemical Industry and Large-Scale Chemical Manufacturing:	Background factors in large-scale processes.	Chapter 1

1, 2	Cost Calculations:	Cost calculation sheet; Cost calculation sheet to improve yield.	Chapter 2
2, 3	Basic background needed for large scale-scale operations:	Distillation; Extraction; Crystallization.	Chapter 3
3, 4	Industrial Catalysis:	Heterogeneous catalysis; Homogeneous catalysis.	Chapter 4
4, 5	Products of Fermentation Processes:	Industrial fermentation using aerobic and anaerobic methods; Water—an important raw material for the chemical industry.	Chapter 5
5, 6	Organic Chemical Processes:	Industrial processes using methane, ethylene, propylene, and the butene fraction of refinery stream, Industrial chemicals from benzene, toluene and xylene.	Chapter 6
6, 7	Organic Chemical Processes:	Industrial chemicals from benzene, toluene and xylene.	Chapter 6

Assessment Methods:

Assessment method	Grade	Comments
First Exam	25	(Tue) 17/07/2018
Second Exam	25	(Tue) 07/08/2018
Term Paper	10	Last weak
Final Exam	40	Set by Registrar
Total	100	

Alignment of Teaching and Learning Methods, Assessment and Course ILOs:

Teaching method	Contact Hours	Assessed through	ILOs numbers
Lectures	35 (2100 minutes)	Exams and Quizez	All ILOs

Learning References:

- 1- Organic Industries (1) Sheet, by Dr. Nabil Eldurini, bookshop.
- 2- Other Resources: Power point slides supplied by the instructor.
- 3- An Introduction to Industrial Chemistry, 3rd edition, by Alan Heaton, Blackie Academic & Professional, 1996.
- 4- Introduction to Industrial Chemistry, by Howard L. White, John Wiley & Sons.1986.

Course Policies:

- **Attendance Policy:** University regulations apply to attendance.
- **Academic Honesty:** Academic dishonesty is an unacceptable mode of conduct, and will not be tolerated in any form at University of Petra. All persons involved in academic dishonesty and plagiarism in any form will be disciplined in accordance with University rules and regulations.

Approved by	Name	Date	Signature
Head of Department	Dr. Abdelmnim Altwaiq		
Faculty Dean	Prof. Rami Abdulrahim		

**Controlled
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¹ Additional information may be added in this section according to the nature of the course.
[QF ACA 012-02, Rev B](#)