


Petra University		
Faculty of arts and sciences		
Department of Chemistry		
		كلية الآداب والعلوم قسم الكيمياء

Course Syllabus

Year: 2019/2020

Semester: Second

Course No.	Course Title	Prerequisite	Co-requisite	Credit Hours Lectures / ECTS
101347 101349	Laboratory of Manufacturing and analysis of chemical products	101241	101346 101348	1/3 ECTS: European Credit Transfer System

Instructor Name	e-mail	Office No.	Office ext.	Office Hours
DR. ABDEL MNIM ALTWEIQ	aaltweiq@uop.edu.jo	7115	6500	Sun., Tues., Thurs.: 9 ⁰⁰ -10 ⁰⁰ and 13 ⁰⁰ – 14 ⁰⁰ (Sun.) Mon., Wed.: 8 ⁰⁰ - 09 ⁰⁰

Course Description	The course covers the manufacturing process of many chemical products like adhesive, Crease resistant, gel fire lighter, dyes, paints, phenacetin and soap from thier raw material. This course also deals with the ideal analysis methods of raw materials, and final products of the interested chemical products.
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Course Objectives

- 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 analytical and industrial chemistry or multi-disciplinary areas involving chemistry.
- To instill in students a sense of enthusiasm for analytical, instrumental and industrial chemistry, an appreciation of its application in different contexts and to involve them in an intellectually stimulating and satisfying experience of learning and studying.

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 (K)			
1. Demonstrate knowledge and understanding of manufacturing process of adhesive, Crease resistant, gel fire lighter, dyes, paints, phenacetin and soap	K (1)	Doing the experiments and discussion	Reports, mid-term and term exams
Intellectual Skills (I)			
1. Illustrate the nature and behavior of chemical substances that used in chemical manufacturing of the interested chemical products mentioned in the course contents and identify their various functions.	I (1)	Doing the experiments and discussion	Reports, mid-term and term exams
2. Estimate chemical data by performing calculations related to chemical conversions and analysis of chemical products.	I (2)		
Practical skills (P)			
1. Prepare and analyze some of chemical products like adhesive, dyes, soap, vitamin C, oils and detergents	P (3)	Doing the experiments	Reports, mid-term and term exams
2. Prepare scientific reports.	P (4)		
Transferable Skills (T)			
1. Communication skills, covering both written and oral communication.	T (1)		

Course Schedule:

Week	Topic Details	Course ILO number	Reference
1	General safety rules	P1	Laboratory Manual
2	Preparation of cold-set adhesive	K1, I1, I2, P3	Laboratory Manual
3	Crease resistant and permanent pleated finishes and manufacture of kerosene gel fire lighter	K1, I1, I2, P3	Laboratory Manual

4	The chemistry of dyes	K1, I1, I2, P3	Laboratory Manual
5	Preparation of phenacetin	K1, K3, I1, I2, P4	Laboratory Manual
6	Making soap	K1, K3, I1, I2, P3	Laboratory Manual
7	Midterm Exam Theoretical Exam involving the first 6 experiments.	-	Laboratory Manual
8	Determination of acid value of an oil sample	K1, K3, I1, I2, P4, P3	Laboratory Manual
9	Determination of saponification value of an oil sample	K1, K3, I1, I2, P4, P3	Laboratory Manual
10	Determination of iodine value of an oil sample	K1, K2, I1, I2, P4, P3	Laboratory Manual
11	Analysis of commercial vitamin C tablets	K1, K3, I1, I2, P4, P3	Laboratory Manual
12	Determination of available oxygen of a detergent	K1, K3, I1, I2, P4, P3	Laboratory Manual

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

Teaching method	Contact Hours	Assessed through	ILOs numbers
Laboratory	1	Hands-on lab work, lab reports and exams	K1, I1, I2, P4, P3

Assessment Methods and Grading System:

Assessment method	Grade
Midterm Exam	25
Reports	25
Evaluation	10
Final Exam	40
Total	100

Learning References:

1- Textbook (s):
Laboratory Manual, by Dr. Abdelmnim and Dr. Nuha Swedan, 2016, Bookshop.
2- References:
<ul style="list-style-type: none">Principles of Instrumental analysis, 6th Edition, D. A, Skoog, J. Holler & S. R. Crouch, Thomas Brook/Cole, 2007Shreve's chemical process industries, 5th edition, by George T. Austin
3- Other Resources:
<<Labs, computer resources, labs rooms needed for the course>>

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	17. 02.2020	
Faculty Dean	Prof. Rami Abdel-Rahem	24.02.2020	

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