



MUTAH UNIVERSITY
Faculty of Engineering
Department of Chemical Engineering



Petroleum Refining Engineering

COURSE SYLLABUS

Course Code	Course Name	Credits	Contact Hours
0404571	Petroleum Refining Engineering	3	

INSTRUCTOR/COORDINATOR	
Name	Prof. Adnan Al-Harashseh
Email	Adnan@mutah.edu.jo
Website	

TEXTBOOK
<ul style="list-style-type: none">The Chemistry and Technology of Petroleum and gas, V.N Erikh, M.G. Rasina, M.G. Rudin, 1988, Mirpublishers ..James H. Gary & Glenn E. Handwerk "Petroleum Refining, Technology & Economics", 4th ed., Marcel Dekker, Inc., 2001
Other Supplemental Materials
<ul style="list-style-type: none">Nelson, W. L. Petroleum Refinery Engineering, Tata McGraw Hill Publishing Company Limited, 1985.B.K. Bhaskara Rao, "Modern Petroleum Refining Processes" Edn. 3, Oxford & IBH Publishing Company Pvt. Ltd. New Delhi

SPECIFIC COURSE INFORMATION

A. Brief Description of the Content of the Course (Catalog Description)

This course aims to introduce the student to one of the chemical engineering applications related to petroleum and its separation processes into its various compounds. The course includes: Structure and composition of petroleum, analysis and evaluation of petroleum properties, properties and uses of petroleum products, refineries processes via distillation, fluid catalytic cracking, desulfurization, hydro-treating, asphalt and heavy-distillate production processes.

Prerequisite:

B. Pre-requisites (P) : 0404437

C. Course Type (Required or Elective)

Required (Compulsory department course)

SPECIFIC GOALS

A. Specific Outcomes of Instruction

- Investigate petroleum refining and energy demand (1,4)
- Discuss the properties that distinguish different grades of crude oil (1)
- Define the typical products of refining and their specifications (1)
- Evaluate the use of catalysts in petroleum refining (1,2)
- Discover the methods used to create clean and reformulated fuels (1,2,4)
- Manage sulphur in the refining process (1,2)
- Discuss the Utilities General facilities at Refinery (2,4)

B. Student Outcomes Addressed by the Course

1	2	3	4	5	6	7				
✓	✓		✓							

BRIEF LIST OF TOPICS TO BE COVERED

List of Topics	No. of Weeks	Contact Hours
• Introduction & historical preview of petroleum processing	1	3
• Chemical composition and physical properties of petroleum	2,3	6
• Methods of analyzing the chemical composition of petroleum and its products.	4,5	6
• Classification of petroleum and their products	6	3
• Preparation of petroleum for processing	8,10	9
• Primary petroleum processing	10,11	6
• Secondary petroleum processing ,Thermal and thermo catalytic processes of petroleum fractions	12-14	9
• General facilities at a Refinery	15	3
• Review	16	3
Total	16	48

METHODS OF ASSESSMENT

No.	Method of assessment	Week and Date	%
1	Online First Exam	6 th week	20

2	HW, quizzes	Through/14 weeks	10
2	Online second exam	12 th week	20
3	Online final examination	End of Semester	50
Total			100