Module (Course Syllabus) Catalogue

2022-2023

College/ Institute	Koya technical institute	
Department	Petroleum Technology /Chemical Analysis	
Module Name	Petroleum Refinery	
Module Code	PER403	
Degree	Technical Diploma ✓ Bachler ☐ High Diploma ☐ Master ☐ PhD ☐	
Semester	4	
Qualification	Master	
Scientific Title	Assist. Lecturer	
ECTS (Credits)	7	
Module type	Prerequisite ☐ Core ✓ Assist. ☐	
Weekly hours		
Weekly hours (Theory)	(2) hrs. Class	(175) Total hrs Workload
Weekly hours (Practical)	(2) hrs. Class	( )Total hrs Workload
Number of Weeks	16	
Lecturer (Theory)	Sheeraz Majeed Ameen	
E-Mail & Mobile NO.	Sheeraz.Ameen@epu.edu.iq	
Lecturer (Practical)	Sheeraz M. Ameen +Sardasht Rifaat Tahir	
E-Mail & Mobile NO.	Sheeraz.Ameen@epu.edu.iq	

Course Book

Course Description	Description: A study of physical and chemical processes to convert crude oil into Petroleum provides the largest fraction of primary energy supply in the U.S. and in the world depend almost completely on petroleum fuels, such as gasoline, jet fuel, are necessary for operating the combustion engines of cars, trucks, planes, and trains oils (motor oils), greases, tires on the wheels of the vehicles, and asphalt to pave the fuels and many materials are produced by processing of crude oil in petroleum petrochemicals and chemical industry for producing all consumer goods from bcourse addresses petroleum refining to review how a variety of physical processes to process compliant fuels and materials.			
Course objectives	To ensure that all students have a basic knowledge and understanding of Petroleum Refinery (Refinery processes) and also provide basic cognitive and practical skills required for future works in the oil and gas industry.			
Student's obligation	1. Students have a responsibility to respect all staff members and fellow students. They have a responsibility to conduct themselves in a manner that does not disrupt, distract, or interfere in any way with the teaching and learning process. 2. Students have a responsibility to arrive at class on time. 3. Students have a responsibility to be prepared for class with the appropriate materials and take care of all textbooks assigned to them. 4. Students have a responsibility to follow the institute's regulations regarding leaving the classroom. Students have a responsibility to secure a pass from their teacher in order to leave the classroom and to show that pass. 5. Students have a responsibility to conduct themselves in an appropriate manner during passing and whenever they are in the halls of the institute. Students have a responsibility to behave in such a way that the safety of others is not jeopardized by their acts. 6. Participate in all exams of the subject without absenting. 7. Discuses students' suggestions, opinions and questions at teacher office hours. 8. Preparing reports, seminars and other activates.			
Required Learning Materials	Teaching by presentation: lecture, reading to the class, report, exposition, showing, displaying, teaching by example, demonstrating**.**			
Evaluation	**Task**	**Weight (Marks)**	**Due Week**	**Relevant Learning Outcome**
	Paper Review			

	Assignments	Homework	5%		
		Class Activity	2%		
		Report	5%		
		Seminar	5%		
		Essay			
		Project			
	Quiz		8%		
	Lab.		10%		
	Midterm Exam		25%		
	Final Exam		40%		
	Total		100%		

Specific learning outcome:	1. An overview of oil and gas technology. 2. Introducing oil refinery processes. 3. Study physical and chemical processes of refinery processes. 4. Methods of improving the oil and gas products.
Course References:	1. Håvard Devold, OIL AND GAS PRODUCTION HANDBOOK: An introduction to oil and gas production, BB ATPA Oil and Gas, 2006. 2. Mohamed Fahim Taher Al-Sahhaf Amal Elkilani, Fundamentals of Petroleum Refining, 1st Edition, Elsevier Science, 2009. **Journals:** 1. Oil & Gas Journal 2. Petroleum refinery engineering | Journal of Chemical Education

Course topics (Theory)	**Week**	**Learning Outcome**
Introduction to oil refinery.	1	
Refining operations.	1	
Treatment Processes.	1	
Physical and chemical processes.	1	
Desalting/dehydration.	1	
How does distillation work? Basic operation of refinery.	1	

Crude distillation.	1	
Propane deasphalting. Solvent extraction and dewaxing.	1	
Blending. Thermal processes.	1	
Visbreaking. Delayed Coking.	1	
Catalytic processes. Catalytic Cracking.	1	
Catalytic Hydrodesulfurization Process.	1	
Hydrocracking.	1	
Catalytic Reforming.	1	
The Fluid Coking Process.	1	
Treatment of refinery gases.	1	
Practical Topics	**Week**	**Learning Outcome**
Octane Number and Cetane Number	2	
Determination of ethanol content in gasoline	1	
Water content and sediment	1	
Carbon residue	1	
Flash point and fire point	1	
Sulfur content in petroleum products	1	
Viscosity of petroleum products	1	
Ried vapor pressure	1	

Questions Example Design

Q.1: Define the following:1. Visbreaking 2. Blending……etc.

Q.2: Fill in the following blanks with the suitable word or words.

1. The **two** most typical methods of crude-oil desalting are……...and ……

Q.3: write about the following.

1. Main Components of Distillation Columns.

Q.4: True (√) and False (X)

1. Propane gas is a good solvent for deasphalting process. (X)

Q.5: Drawing and sketches.

1. Desalting processes.

Extra notes:

External Evaluator

The main scope of this course is to give the basic knowledge and understanding of oil and gas technology (Refinery processes) and also provide basic cognitive and practical skills required for future works in the oil and gas industry.

Mrs. Sheeraz Majeed Ameen did it clearly in the course syllabus and this course details and covers the main aspects too.

Mr. Sardasht Rifaat Taher