Course Specifications

General Information

Course name	Petrochemicals
Course number	CHEM3209
Faculty	
Department	
Course type	Major Needs
Course level	3
Credit hours (theoretical)	2
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - • To impart knowledge to the students about the composition and Refining the Crude petroleum oil and all industries depends on the

2 - • To enhance the job potentiatities of condidates.

3 - • To further research work in the area of petroleum processing and conversion

4 - • To motivate students to make remarkable progress in terms of developing infrastructure, techniques and facilities.

Intended Learning Outcomes

Knowledge and Understanding

* • Understand all terms and information related to petroleum
* • How petroleum was formed
* • Oil Refinery from crude oil to products
* • Gas separation , Defenition all terms in petroleum field
* • Overview of petrochemical industry
* • Special topics on petroleum fuel: octan number, gasoline, Diesel, Biodiesel, and others.
* • Understands the analysis an, Petroleum products, Petrorleum gases, Gasoline, Motor gasoline, Antinocking properties of gasoline, Octan number, Diesel oils, kerosene, Bitumen, and other products. Lubrication and lubricants, Classification of lubricants, Properties of liquid lubricants, Synthesis lubricants, Lubricants grease, Additives, Tests and quality control

Course Contents

1 - Introduction to petroleum chemistry, oil origin, oil phisco- chemical characteristics and methods of analysis. The course is aimed at understanding basic of crude oil composition, recovery, analysis, and refining, An overview is given for main oil products, combusition fuels, lubricating oils, petrochemicals, gaseous and inorganic by products. Also covered the theories of oil genesis and environmental issues of oil industry.

2 - Crude petroleum oil, Composition of crude oil, Origin of Hydrocarbons, Physical properties of crude oil, Separation, conversion and purification processes

3 - Petroleum refining processes Distrillation, Hydrotreating, Cracking, Reforming, Alkylation and polymerization , Separation of natural oil

4 - Petrochemicals, Introduction, Crude oil, gas and refinery gas, Refinery operations: catalytic cracking, Hydrocracking and catalytic reforming

Books and References

Course note	The chemistry and Technology of Petroleum" James G. Speight, 4th. Ed, Tylor Franeis, 2006
Recommended books	Hand book of petroleum processing" David S.J. Stan Jones, Peter R. Pujado, Springer, 2006
	Handbook of Petroleum Refining processes" Third Edition Robert A. Meyers, McGraw Hill. Education, 2004
	Handbook of petroleum Analysis" James G. Speight, Wiley, 2001
	James G. Speight, CRC Press, Taylor, Francis, 1997