



مواصفات مقرر: خواص النفط والغاز

Course Specification Of: Petroleum Properties

المعلومات العامة عن المقرر						
1.	اسم المقرر Course Title	Petroleum Properties				
2.	رمز المقرر ورقمه Course Code and Number	PNGE 327				
3.	الساعات المعتمدة للمقرر Credit Hours	الساعات المعتمدة Credit Hours			الإجمالي Total	
		محاضرات Lecture	عملي Practical	سمنار/تمارين Seminar/Tutorial		تدريب Training
		2	1	0	0	3
4.	المستوى والفصل الدراسي Study Level and Semester	Third Year/ First Semester				
5.	المتطلبات السابقة المقرر (إن وجدت) Pre-requisites (if any)					
6.	المتطلبات المصاحبة (إن وجدت) Co-requisites (if any)					
7.	البرنامج الذي يدرس له المقرر Program (s) in which the course is offered	هندسة النفط والغاز الطبيعي PETROLEUM AND NATURAL GAS ENGINEERING				
8.	لغة تدريس المقرر Language of teaching the course	ENGLISH/ARABIC				
9.	نظام الدراسة Study System	SEMESTERS				
10.	مكان تدريس المقرر Location of teaching the course	FACULTY OF PETROLEUM AND NATURAL RESOURCES				
11.	اسم معد (و) مواصفات المقرر Prepared by	Assoc. Prof. Mahyoub A. Saeed				
12.	تاريخ اعتماد مجلس الجامعة Date of Approval	2020				

وصف المقرر	Course Description
	This course will discuss many topics related to the properties of crude oil and natural gas. These topics include Crude Oils chemical composition, classification, density, specific gravity; viscosity, molecular weight; vapor pressure, specific heat; heat of combustion; boiling range, flash point; pour point, sulfur content; aniline point; fractional distillation, TBP curve; and Natural gas properties. In addition to those topics, Introduction to the history of petroleum Industry, Definitions of Petroleum Crude Oil and Natural Gas, Classification of Crude Oils and Natural Gas Fields.

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Prof. Dr. Al Qaseem Mohammed Abas



Course Intended Learning Outcomes (CILOs) مخرجات تعلم المقرر

After completing the course, the student will be able to:		بعد الانتهاء من دراسة المقرر سوف يكون الطالب قادرا على أن:	
a1	illustrate the history of petroleum industry		-a1
a2	recognize the classification of petroleum and AAPG oil fields classification		-a2
a3	Discuss the chemical composition of crude oil and its products		a3
a4	Discuss the physical properties of crude oil and its products		a4
a5	Discuss the natural gas properties		a5
b1	predict the chemical and physical crude oil properties and is products		b1
b2	Analysis of crude oil Fractions and Refining		-b2
c1	conduct experiments that illustrate the different properties of petroleum		- c1
d1	Collaborate Effectively Within Team		-d1

Theoretical Aspect الموضوعات الجانب النظرية

الرقم Order	الموضوعات الرئيسية/ الوحدات Topic List / Units	الموضوعات الفرعية Sub Topics List	عدد الأسابيع Number of Weeks	الساعات الفعلية Contact Hours
1	Introduction to the history of proleum Indstry. Defininition Of Petroleum Crude Oil and Natural Gas	BREIF HISTORY OF PETROLEUM INDUSTRY Exploration DRLLING PRODUCTION TRANSPORTATION	1	2
2	CLASSIFICATION OF CRUDE OILS AND NATURAL GAS FIELDS	AAPG CLASSIFICATION OF OIL AND GAS FIELS	1	2



3	PROPERTIES OF CRUDE Oils	DENSITY, SPECIFIC GRAVITY AND API VISCOSITY, MOLECULAR WEIGHT, VAPOUR PRESSURE AND SPECIFIC HEAT HEAT OF COBUSTION, BILING POINT RANGE AND FLASH POINT POUR POINT, CLOUD POINT AND SULFUR CONTENT AND ANILINE POINT	5	10
4	CRUD OIL , FRACTIONAL DISILLATION AND BP CURVE	Crude oil distillation Conducting boiling points curve	1	2
5	ANAYSIS OF FRACIONS AND REFINING	Chemical and physical analysis of fractions	1	2
6	Gasoline Octane number and diesel cetane number	Calculating gasoline Octane number and diesel Cetane number.	2	2
7	NATURAL GAS PROPERTIES	DISCUSSING CHEMICAL AND PHYSICAL PROPERTIES OF NATURAL GAS	3	6
عدد الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester			14	28

Order	Tasks/ Experiments	Number of Weeks	contact hours
1	Measuring the density Of Crude oil and its fractions. .	1	2
2	Calculating the specific gravity and API of Crude oil and its fractions.	1	2
3	Measuring the viscosity of Crude oil and its fractions	1	2
5	Aniline point determination	1	2

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6	Crude oil Fractional distillation	1	2
7	Measuring Boiling point and flash points of Crude oil and its fractions. .	1	2
8	Measuring of Pour and cloud points of Crude oil samples.	1	2
9	Octane and Cetane numbers Calculation	1	2
Number of Weeks /and Units Per Semester			8
			16

استراتيجيات التعليم والتعلم Teaching Strategies

Active Lectures (supported with discussions),
Hands-on laboratory work,
Tutorials
project/presentation
Computer and web-based learning,
Design work and projects

الأنشطة والتكليفات Tasks and Assignments

م No	التكليف/ الواجب Assignments/ Tasks	نوع التكليف (فردى/ تعاوني)	الدرجة المستحقة Mark	أسبوع التنفيذ Week Due	خرجات التعلم CILOs (symbols)
1	AAPG oil and gas fields classification in yemen	Collecting data	3	3	a2
2	Octane number calculation	excercise	4	12	a3,b2
3	Octane number calculation	excercise	4	12	a3,b2
4	Crude oil types in yemen	lab	4	13	a3,b2,c1
إجمالي الدرجة Total Score			15		

تقييم التعلم Learning Assessment

الرقم No.	أنشطة التقييم Assessment Tasks	أسبوع التقييم Week due	الدرجة Mark	نسبة الدرجة إلى الدرجة النهائية Proportion of Final Assessment
1	الأنشطة والتكليفات Tasks and Assignments	3,6,8	15	10%
2	كوز (1) Quiz (1)	3 RANDOMLY	5	3.3%
3	اختبار نصف الفصل Midterm Exam	W8	25	16.7%
4	كوز (2) Quiz (2)	W12	5	3.3%
5	اختبار نهاية الفصل (عملي) Final Exam (practical)	W 15	30	20%



6	اختبار نهاية الفصل (نظري) Final Exam (theoretical)	W16	70	46.7%
Total الإجمالي			150	%100

توثيق المراجع حسب نظام APA (اسم المؤلف، سنة النشر، اسم الكتاب، دار النشر، بلد النشر).	
Required Textbook(s) المراجع الرئيسية (لا تزيد عن مرجعين)	
1. M.R. Riazi, 2005, Characterization and Properties of Petroleum Fractions, Published by ASTM International.	
2- James G. Speight , 2010, The Chemistry and Technology of Petroleum, 4th Edition	
Learning Resources مصادر التعلم	
1. Mohammed A. Fahim, Taher A. Alsahhaf, and Amal Alkilani, Fundamentals of petroleum refining.	
2. Malcolm A. Kelland , Production Chemicals for the Oil & Gas Industry, 2nd Edition, CRC Press,	
Electronic Materials and Web Sites etc. المصادر الإلكترونية ومواقع الإنترنت	
1. Journal of ASTM International	
2. http://www.ArabOilNaturalGas.Com	
3. http://www.panolacollegestore.com	

Course Policies الضوابط والسياسات المتبعة في المقرر	
1	Class Attendance حضور الفعاليات التعليمية - Students are expected to attend classes regularly and promptly. - The attendance should not be less than 80%. - If the student has been absent, he is responsible for finding out any missed material by consulting other students or going to the professor's office hours.
2	Tardy الحضور المتأخر - Attendance and arriving on time for the class are necessary. If the student is late, he will be prevented from class.
3	Exam Attendance/Punctuality ضوابط الامتحان - According to the rules the student gets absent in the exam of the course.
4	Assignments & Projects التعيينات والمشاريع - Papers survey or projects should be submitted by the time detriment by the professor.
5	Cheating الغش - According to the rules, cheating is a serious offense and will always result in an imposition of a penalty. The penalties that can be started from the range of canceling the result of the course to canceling the student's admission.
6	Plagiarism الانتحال - Plagiarism is a serious offense and will always result in an imposition of a penalty. The penalties that can be started by making a zero mark for the work.
7	Other policies سياسات أخرى - The student should by a commitment by the rules inside class and university. Therefore, he is expected to show respect for his classmate, instructors & others.