

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information				
معلومات المادة الدراسية				
Module Title	<b>Introduction to Petroleum Technology</b>		Module Delivery	
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	<b>PGR124</b>			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	1	Semester of Delivery	2	
Administering Department	PGR	College	PPE	
Module Leader	Luay Ahmed Khamees		e-mail	<a href="mailto:Luaykhamees75@tu.edu.iq">Luaykhamees75@tu.edu.iq</a>
Module Leader's Acad. Title	Assist Lecturer	Module Leader's Qualification	M.SC.	
Module Tutor			e-mail	
Peer Reviewer Name	Name	e-mail	E-mail	
Scientific Committee Approval Date	01/06/2023	Version Number	1.0	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

## Module Aims, Learning Outcomes and Indicative Contents

### أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p><b>Module Objectives</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"><li>1. Providing students with the basics of scientific knowledge in the field of Petroleum and Gas Refining Engineering department and improving their professional abilities in the direction of analytical and creative thinking through the use of information technologies, data analysis and modern experimental methods in formulating and solving problems.</li><li>2. Preparing well-qualified engineers to advance the activities of Petroleum and Gas Refining Engineering department and the ability to manage dealing with them in all aspects of life, especially in the field of oil industries.</li><li>3. Conducting scientific research of an academic nature to keep pace with the global scientific march and research of an applied nature to translate engineering knowledge and its theories into action by addressing the problems that the country suffers from in all fields.</li><li>4. Contribute in one way or another in terms of design, supervision, follow-up and advice for the reconstruction of the country in the various sectors of the oil and petrochemical industries, with the provision of engineering consultancy, the preparation of economic feasibility studies, project designs and the provision of technical services.</li><li>5. Rooting scientific sobriety and making it a feature of this department in accordance with international controls and standards.</li><li>6. Providing students with the basics of scientific knowledge in the field of Petroleum and Gas Refining Engineering department and improving their professional abilities in the direction of analytical and creative thinking through the use of information technologies, data analysis and modern experimental methods in formulating and solving problems.</li><li>7. Preparing well-qualified engineers to advance the activities of Petroleum and Gas Refining Engineering department and the ability to manage dealing with them in all aspects of life, especially in the field of oil industries.</li></ol>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<p>Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks.</p> <ol style="list-style-type: none"><li>1. Broad-based education to understand the impact of engineering solutions globally and economically.</li><li>2. Ability to work in multidisciplinary teams.</li><li>3. The possibility of applying cognitive sciences such as mathematics and pure petroleum sciences.</li><li>4. The ability to use the techniques, skills and tools of contemporary engineering in the engineering field of the petroleum industries.</li><li>5. The ability to design petroleum and petrochemical systems to meet the required needs within realistic economic determinants.</li><li>6. The possibility of designing and implementing experiments, analyzing the results and translating them into reality.</li></ol>
<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p>

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## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

<b>Strategies</b>	<p>The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes and interactive tutorials. The following steps will be applied to enhance the learning strategies :</p> <ol style="list-style-type: none"> <li>1. Using appropriate teaching methods in line with the level of students and allowing students to discuss.</li> <li>2. Using modern and advanced means to deliver the largest amount of knowledge to the student.</li> <li>3. Presenting the course vocabulary to the students (lectures).</li> <li>4. Assigning students assignments, such as writing research papers, so that students acquire skills for self-learning and presentation.</li> <li>5. Conducting sudden exams.</li> <li>6. Oral exams via e-learning platforms.</li> <li>7. Conducting the quarterly and final exams on the specified dates.</li> <li>8. Informing students of how students' grades are calculated during the semester, their exam results, and discussing failures and successes.</li> <li>9. Informing students of the curriculum books and auxiliary books that they need in the course vocabulary</li> </ol>
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## Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطلاب خلال الفصل	59	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطلاب أسبوعيا	4
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطلاب خلال الفصل	91`	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطلاب أسبوعيا	6
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطلاب خلال الفصل	<b>150</b>		

<b>Module Evaluation</b> تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	20% (20)	5, 9	LO (1,2,3,4), LO (5,6,7,8)
	<b>Assignments</b>	2	10%(10)	3, 12	LO (1,2), LO (9,10,11)
	<b>Seminar</b>	1/1	10%(10)	1	
	<b>Scientific Report</b>	-	-	-	-
<b>Summative assessment</b>	<b>Midterm Exam</b>	2 hr.	10%(10)	10	LO 1-9
	<b>Final Exam</b>	3 hr.	50%(50)	16	All
<b>Total assessment</b>			<b>100% (100 Marks)</b>		

<b>Delivery Plan (Weekly Syllabus)</b> المنهاج الاسبوعي النظري	
	<b>Material Covered</b>
<b>Week 1</b>	Energy Sources in nature, and An introduction to crude oil and its origin.
<b>Week 2</b>	Reservoir characterization.
<b>Week 3</b>	Reservoir characterization.
<b>Week 4</b>	Reservoir engineering,
<b>Week 5</b>	Hydrocarbon exploration methods.
<b>Week 6</b>	Introduction to oil and gas drilling operations.
<b>Week 7</b>	Drilling Fluid properties.
<b>Week 8</b>	Drilling problem and methods of treatment.
<b>Week 9</b>	Well completion.
<b>Week 10</b>	Introduction to production engineering.
<b>Week 11</b>	Hydrocarbon production from the well and surface equipment.

<b>Week 12</b>	An introduction about all process that take place on oil and gas in the field.
<b>Week 13</b>	Introduction to oil properties , and introduction to refineries and crude oil refining
<b>Week 14</b>	Introduction to oil refineries and crude oil refining
<b>Week 15</b>	<b>Preparatory week before the final Exam.</b>
<b>Week 16</b>	<b>final Exam.</b>

<b>Delivery Plan (Weekly Lab. Syllabus)</b> المنهاج الاسبوعي للمختبر	
	Material Covered
<b>Week 1</b>	
<b>Week 2</b>	
<b>Week 3</b>	
<b>Week 4</b>	
<b>Week 5</b>	
<b>Week 6</b>	
<b>Week 7</b>	

<b>Learning and Teaching Resources</b> مصادر التعلم والتدريس		
	Text	Available in the Library?
<b>Required Texts</b>	1- Petroleum engineering. 2- Handbook of petroleum technology. .	No
<b>Recommended Texts</b>	1- An Introduction to petroleum Technology, Economics and politics by James G. Speight 2- Reservoir Engineering Hand book. 3- Petroleum production engineering.	Yes No No
<b>Websites</b>	<a href="https://www.arab-oil-naturalgas.com/">https://www.arab-oil-naturalgas.com/</a> <a href="https://www.sciencedirect.com/search?q=oil">https://www.sciencedirect.com/search?q=oil</a>	

<b>Grading Scheme</b> مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
<b>Success Group (50 - 100)</b>	<b>A – Excellent</b>	امتياز	90 – 100	Outstanding Performance
	<b>B - Very Good</b>	جيد جدا	80 – 89	Above average with some errors

	C – Good	جيد	70 – 79	Sound work with notable errors
	D – Satisfactory	متوسط	60 – 69	Fair but with major shortcomings
	E – Sufficient	مقبول	50 – 59	Work meets minimum criteria
<b>Fail Group (0 – 49)</b>	<b>FX – Fail</b>	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F – Fail</b>	راسب	(0-44)	Considerable amount of work required

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.