	Ministry of Higher Education and Scientific Research - Iraq Al-Mustaqbal University Chemical Engineering Department	

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Petroleum and gas field processing			**Module Delivery**	
Module Type	**Core**			**Theory Lecture**	
Module Code	UOMU0102056				
ECTS Credits	٣				
SWL (hr/sem)	75				
Module Level	3		**Semester of Delivery**	1	
Administering Department	Chemical Engineering Department		**College**	Engineering college	
Module Leader	Zaid emad Mohsen		**e-mail**	Zaid.emad.mohsen@uomus.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Assist . lecturer	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Review Committee	28/10/2025		**Version Number**	1.0	

Approval			

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Petroleum Chemistry	**Semester**	2
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	1- To know sources of feed stock. These sources are petroleum fractions and natural gases. 2- To introduce petrochemicals generations: first (basic petrochemicals), 2nd derivatives, 3rd and product. 3- Ability to select of appropriate equipment for the production of materials in process plant.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- The chemical engineering student should be able to think critically, solve problems, manage resources and time, describe the specialty of chemical and petroleum refinery engineering and its concepts in a scientific and engineering way, and make appropriate changes to that. 2- The ability to perform engineering analysis and scientific thinking by applying laws in science, mathematics, and engineering and attaching to guidelines and instructions for any activity and framework in implementing a project or confronting an engineering problem and solving it.		
Indicative Contents المحتويات الإرشادية	**Introduction :** [2 hr] Raw material, characterization **Primary Petrochemicals:** [10 hr] Olefins, Diolefins, Higher Olefins, LAB, Aromatics, separation Aromatics, Syn gas, H2 production, steam reforming ,PO **Derivatives Syn gas derivatives:** [12 hr] Methanol, Acetic acid . Ethylene derivatives : Vinyl chloride M, Ethylene Oxide. Ethylene glycol, MEA, DEA&TEA Propylene derivatives : Acrylonitrile, Derivatives of C4 hydrocarbon : MTBE, Adipic acid. Benzene derivatives Ethyl benzene, styrene, nitrobenzene, aniline, cyclohexane, cumene, Phenol, acetone. Toluene derivatives : Benzoic acid Xylene derivatives : Terephthalic acid Products: **polymers: LDPE, HDPE, PVC, PP.** [6 hr]		

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	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, interactive and tutorials.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	3	15% (5)	4,8,12	1,2
	Online Assignments	2	10% (5)	Continuous	
	Onset Assignments	2	10% (5)	Continuous	
	Report	1	5% (5)	14	1,2
Summative assessment	**Midterm Exam**	2hr	10% (10)	10	1,2
	Final Exam	2hr	50% (50)	16	1,2
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**Introduction** : Raw material, characterization
Week 2	**Primary Petrochemicals:** Olefins, Diolefins, Higher Olefins
Week 3	LAB, Aromatics
Week 4	Syn gas,

Week 5	H2 production
Week 6	Steam reforming, PO
Week 7	**Derivatives Syn gas derivatives:** Methanol, Acetic acid
Week 8	Ethylene derivatives: Vinyl chloride M, Ethylene Oxide.
Week 9	Ethylene derivatives: Ethylene glycol, MEA, DEA&TEA
Week 10	Propylene derivatives, Acrylonitrile, Derivatives of C4 hydrocarbon: MTBE, Adipic acid.
Week 11	Benzene derivatives Ethyl benzene, styrene, nitrobenzene, aniline, cyclohexane, cumene, Phenol, acetone.
Week 12	Toluene derivatives: Benzoic acid, Xylene derivatives: Terephthalic acid
Week 13	Products: **polymers: LDPE, HDPE**
Week 14	**PVC**
Week 15	**PP**
Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Sami Matar, Lewis F. Hatch, Chemistry of Petrochemical Process, 2nd edition.	Yes
Recommended Texts	William D. Callister, David G. Rethwisc, Materials Science and Engineering.	Yes
Websites		

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	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
Fail Group (0 – 49)	**FX –** Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:	

NB 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.