	Ministry of Higher Education and Scientific Research - Iraq Al-Mustaqbal University College for engineering Department of Chemical Engineering and petroleum industries	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Chemical Eng. Principles II			**Module Delivery**	
Module Type	C			☐ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOMU0102033				
ECTS Credits	5				
SWL (hr/sem)	120				
Module Level	2		**Semester of Delivery**	1	
Administering Department	Chemical engineering and petroleum industries		**College**		
Module Leader			**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor	Lecturer: Dr. Abbas Khaleel Ibrahim Al-Gburi		**e-mail**	Abbas.khaleel.ibrahim@uomus.edu.iq	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**		

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Principles of chemical engineering I	**Semester**	1
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- Have a deep knowledge, wide scope and improved understanding of the mechanisms in mass balance as well as a better insight into analytical and empirical methods applied in analysis of material balance related problems. 2- Gain knowledge for applying the material (equation) balance in chemical engineering problems. 3- To provide experience for students to solve material balance for different process.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Gain a general concept of materials balance. 2. An ability to identify, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics. 3. An ability to apply the engineering design and material balance for different process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline. 4. An ability to function effectively as a member or leader of a team that establishes goals, plans tasks, meets deadlines, and creates a collaborative teams and inclusive environment.		
Indicative Contents المحتويات الإرشادية	• Systematic steps of solving material balance problems 1. • Systematic steps of solving material balance problems 2. • Systematic steps of solving material balance problems 3. • Material balances for processes involving chemical reaction. • Processes involving a single reaction. • Material balance problems involving multiple units. • Recycle without chemical reaction. • Ideal gas law. • Gases and vapors.		
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 tutorials and by considering type of simple problems and design involving activities that are interesting to the students.		

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	75	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	120		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	3	15% (5)	4,8,12	LO2, LO3, LO4 and LO5
	Online assignments	2	10% (5)	Continuous	LO1-LO6
	Onset assignments	2	10% (5)	Continuous	LO1-LO6
	Report	1	5% (5)	14	LO1 and 6
Summative assessment	**Midterm Exam**	2hr	10% (10)	10	LO2, LO3, LO4 and LO5
	Final Exam	3hr	50% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Material balances without chemical reactions.
Week 2	Material balances with chemical reactions.
Week 3	Species Material Balances.
Week 4	Processes Involving a Single Reaction.
Week 5	Element Material Balances.
Week 6	Material balances on combustion processes.
Week 7	Species Material Balances.
Week 8	Processes Involving a Single Reaction.

Week 9	Processes Involving Multiple Reactions.
Week 10	Element Material Balances, Process flow sheet.
Week 11	Bypass and Purge.
Week 12	Recycle without Chemical Reaction.
Week 13	Ideal gas law.
Week 14	Ideal gas mixtures.
Week 15	Material Balance Problems Involving Multiple Units.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	David M. Himmelblau and James B. Riggs, "Basic Principles and Calculations in Chemical Engineering", Seventh Edition, (2004).	Yes
Recommended Texts	David M. Himmelblau, "Basic Principles and Calculations in Chemical Engineering", Sixth Edition, (1996).	
Websites		

APPENDIX:

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.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي