MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Analytical Chemistry**			**Module Delivery**	
Module Type	**Basic learning activities**			☒**Theory** ☒**Lecture** ☒ **Lab** ☐**Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PRE109**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		1	**Semester of Delivery**		2
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Asmaa M. Hamed Alhasany		**e-mail**	E-mail; rosefirst78@uomosul.edu.iq	
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor			**e-mail**	E-mail	
Peer Reviewer 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	
Module Objectives أهداف المادة الدراسية	1. To develop problem solving skills and understanding of statics and applications physics theory through the application of techniques. 2. To understand forces, Moments and equilibrium system. 3. This course deals with the basic concept of Mechanical Engineering. 4. This is the basic subject for all statics and forces applications. 5. To understand concept of moment and forces problems.
Module Learning	Important: Write a Learning Outcomes, better to be equal to the number of study weeks.

Outcomes مخرجات التعلم للمادة الدراسية	Statics is a type of science that helps people design safe and strong structures, like bridges and buildings. It's all about studying how things stay in place even when they are not moving. This is important for engineers and physicists who want to understand how materials react to different forces, like the ones that happen when an airplane takes off or lands. By studying statics, people can make better things and improve technology.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Newton's Theory Statics is a type of science that helps people design safe and strong structures, like bridges and buildings. It's all about studying how things stay in place even when they are not moving. This is important for engineers and physicists who want to understand how materials react to different forces, like the ones that happen when an airplane takes off or lands. By studying statics, people can make better things and improve technology. [15 hrs.] Statics is a branch of mechanics that deals with the study of stationary objects and systems under the action of external forces. In other words, statics is concerned with the analysis of forces acting on objects that are not in motion. It is an essential subject for engineers and physicists as it is the foundation for the study of mechanics, which is the branch of physics that deals with the motion of objects. Statics is a crucial sub-topic of mechanics and is essential in engineering and physics courses. [15 hrs.] It deals with the study of forces acting on objects that are not moving. The primary objectives of statics are to determine the forces acting on an object, the moments of forces acting on an object, and the equilibrium conditions of an object. The study of statics is essential for the design of structures, such as bridges, buildings, and machines, to ensure that they are safe and reliable. [10 hrs.] Revision problem classes [6 hrs.] The study of statics is also important in understanding the behavior of materials under different conditions. It helps engineers and physicists to understand how different materials react to external forces and how they can be designed to withstand these forces. For example, in aerospace engineering, the study of statics is essential in the design of aircraft and spacecraft to ensure that they can withstand the forces of takeoff, landing, and flight. In general, the study of statics is crucial for the development of new technologies and the improvement of existing ones. [15 hrs.]
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: 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 types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Tutorial	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to engineering mechanics
Week 2	Second Newton's Law
Week 3	Forces and Resultant
Week 4	Forces and Resultant
Week 5	Moment
Week 6	Moment
Week 7	Moment of Couple
Week 8	Free body diagram
Week 9	Equilibrium

Week 10	Equilibrium
Week 11	Centroid
Week 12	Centroid
Week 13	Moment of Inertia
Week 14	Moment of Inertia
Week 15	Frictions
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Safety in the laboratory and Introduction about Analytical chemistry
Week 2	Lab 2: Volumetric Analysis/ Titrations
Week 3	Lab 3: Neutralization Titration (acid – base)/ Standardization of the approximately 0.1 N of HCl
Week 4	Lab 4: Determination of Sodium hydroxide (NaOH)/ 1. Direct titration with primary standerd substance (acid) such as potassium acid phthalate ($KHC_8H_4O_4$)
Week 5	Lab 5: Determination of Sodium hydroxide (NaOH)/ 2. Indirect titration with standardize HCl : a. Determination of exact normality of HCl by titration with NA2CO3 (exp, No. 1) b. Determination of exact normality of NaOH by titration with HCl(part a).
Week 6	Lab 6: Determination of a mixture solution of Carbonate and Hydroxide. i. Titration of two mixture solutions by using two different indicators. ii. Titration of two mixture solutions by using two different indicators sequently.
Week 7	Lab 7: Titration of two solutions of mixture with and with out adding.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts		Yes
Recommended Texts		No
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	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	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.