MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	ENGINEERING MECHANICS			**Module Delivery**	
Module Type	CORE			**Theory** **Lecture** **Tutorial**	
Module Code	UOMU023011				
ECTS Credits	10				
SWL (hr/sem)	250				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Building and construction techniques		**College**	Al-Mustaqbal university	
Module Leader			**e-mail**	mayadah.waheed@uomus.edu.iq	
Module Leader's Acad. Title	Assist.Prof.Dr.Mayadah W. Falah		**Module Leader's Qualification**	PhD	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval	01/10/2025		**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 Aims أهداف المادة الدراسية	After successful completion of this course the student will be able to understand: 1-the manner of dealing with forces acting on bodies. 2-the relation between the force and its components. 3- the principle of moments & couples. 4- Another purpose was to help the student to develop the logical , orderly processes of thinking which characterizes the engineer .
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• To understand and use the general ideas of force vectors and equilibrium ofparticle and rigid body. • To understand and use the general ideas of structural analysis and internalforce and friction. • To understand and use the general ideas of center of gravity, centroids andmoments of inertia.
Indicative Contents المحتويات الإرشادية	This course is provided to the engineering students with the basic skills in static and strength of materials. It provides a clear and thorough demonstration of the theory and application of engineering static and strength of materials. Among the main concepts that are covered in this course are vectors, equilibrium of a particle, equilibrium of a rigid body, trusses and frames, internal forces, centroids, and moment of inertia.
Learning and Teaching Strategies	
Strategies	In this course students are expected to: • Attend all classes. In the event you miss a class, you are responsiblefor the assignments and announcements made during your absence. • Participate actively in discussions and group exercises. • Prepare for class sessions by reading text assignments. • Attendance at all exams is required. Makeup exams will be givenonly in emergency cases (proof required). Vacation arrangements are not emergencies. Students who have unexcused absences will receive the grade of zero ("0") for all tests, quizzes, and/or lab experiments missed. Feel free to raise questions (even if you suspect you are the only one who does not know the answer) to ensure that you thoroughly understand and

	are able to apply the theory in real engineering applications.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	157	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	10.467
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	250		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	1.5 hr	10% (10)	7	LO # 1-7
	Final Exam	2.5 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week	**Syllabus**
1	Demonstrates knowledge about the introduction to mechanics, Force systems, Scalar & vector quantities, Able to identify and apply the parallelogram law, Triangle law, Forces & components.
2	Able to identify and apply the Moment of a force, varignon's theorem, and their Applications
3	.Demonstrates knowledge of the Couples, **Able to identify resolution of a force into of a force & a couple.**
4	Demonstrates knowledge and correctly compute the Resultant of force systems, Resultant of concurrent force system, Resultant of parallel force system, and Resultant of non-concurrent force system.

3+4+5	Demonstrates knowledge, identify and correctly compute Equilibrium of force system, Free body diagram, Equilibrium of concurrent force system, Equilibrium of parallel force system, and Equilibrium of non-concurrent force system. Demonstrates knowledge of the Types of beams, Supports, and loads, Equilibrium of beams.
6	Demonstrates knowledge of the trusses. Able to analysis the trusses, method of Joint, and method of section.
7	Demonstrates knowledge and conducts the frames Analysis (method of members)
8+9	a Demonstrates knowledge Friction, Theory of friction, Types of friction, Wedges, Applications Computes Angle of friction
10+11	Computes Centroids of areas & lines, Centroids by integration, Centroids of composite areas, Applications.
12+13	Determines Moment of inertia (MO!), Polar MOI , Radius of gyration , Formula for transferring MOI , MOI for combined areas , Product of inertia , MOI relative to inclined axes , Mohr' circle for MOr. a Demonstrates knowledge of the Principles of dynamics, Kinematics & kinetics, Motion of a particle, Able to apply Fundamental Equations of kinetics for a particle, Effective force on a particle.
14+15	Demonstrates knowledge of the Rectilinear translation, Rectilinear motion with constant acceleration, Free falling bodies. Demonstrates knowledge of the Kinetics of rectilinear translation (Analysis as a particle), Dynamic Equilibrium in translation (Analysis as a rigid body).
Week 16	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	1. **Engineering Mechanics / F.L. Singer** 2. **Engineering Mechanics / A. Higdon & W.B. Stiles**	Yes

Recommended Texts	**1. Engineering Mechanics / Mclean & Nelson**	No
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.