

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Engineering Mechanics		Module Delivery
Module Type	C		<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Theory</li> <li><input type="checkbox"/> Lecture</li> <li><input type="checkbox"/> Lab</li> <li><input type="checkbox"/> Tutorial</li> <li><input type="checkbox"/> Practical</li> <li><input type="checkbox"/> Seminar</li> </ul>
Module Code	UOMU021028		
ECTS Credits	7		
SWL (hr/sem)	210		
Module Level	1	Semester of Delivery	
Administering Department	Air-conditioning and Refrigeration Eng. Tech. Dep.	College	UOMU
Module Leader	Name	e-mail	E-mail
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	15/07/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	UOMU021011	Semester	1
Co-requisites module	None	Semester	

<b>Module Aims, Learning Outcomes and Indicative Contents</b> <b>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية</b>	
<b>Module Aims</b> <b>أهداف المادة الدراسية</b>	1- The course aims to provide first-stage students with basic knowledge of engineering mechanics. 2- Everything related to forces and motion and related concepts such as equilibrium and analysis of forces, centers of gravity, moments of inertia, friction and motion of bodies are studied. 3- The course aims to enable students to gain access to the science of geometry by understanding how to perform correct engineering analysis. 4- Dealing with laws, equations, illustrations, and other data, and linking data together to reach outputs. 5- Enabling the student to be able to analyze, devise and draw conclusions.
<b>Module Learning Outcomes</b> <b>مخرجات التعلم للمادة الدراسية</b>	1- The student can understand the fundamentals and laws of engineering mechanics. 2- The student is familiar with the types of forces and methods of analysis. 3- The student can understand the basics of the Equilibrium of a Particle. 4- Understand the Moment of a Force around the point and axis. 5- Learn the basics of Equilibrium of a Rigid Body and equations of equilibrium. 6- The student can understand Structural Analysis. 7- Enabling students to obtain knowledge, understanding, and analyze the motion of mechanical systems. 8- Learn concepts of motion laws. 9- Learn and analyze the motion of projectiles. 10- Absolute Dependent Motion Analysis of Two Particles. 11- The students can understand the Kinetics of a Particle: Force and Acceleration. 12- The students can understand the Kinetics of a Particle: Work and Energy.
<b>Indicative Contents</b> <b>المحتويات الإرشادية</b>	Indicative content includes the following. 1. The fundamentals and laws of engineering mechanics. 2. Analyze forces. 3. Equilibrium of a Particle 4. Moment of a Force 5. Structural Analysis 6. Laws of Motion. 7. Analyze the motion of mechanical systems.

<b>Learning and Teaching Strategies</b> <b>استراتيجيات التعلم والتعليم</b>	
<b>Strategies</b>	Assessment is based on hand-in assignments, written exams, Quizzes, reports, Practical testing ,and Online testing.

<b>Student Workload (SWL)</b> <b>الحمل الدراسي للطالب</b>
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Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	87	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	123	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	210		

Module Evaluation تقييم المادة الدراسية					
		Time/N umber	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	
	Assignments	5	10% (10)	3,5,7,10,13	
	Projects / lab.				
	Report	2	10% (10)	8, 15	
Summative assessment	Midterm Exam	2 hr	20% (20)		
	Final Exam	2 hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	STATIC: Basic principles in mechanics, Vector Quantities and forces Analysis (2d ,3d).
Week 2	Equilibrium of a Particle (2d, 3d).
Week 3	Force System Resultants: Moment of a Force Scalar Formulation/Moment of a Force-Vector Formulation.
Week 4	Force System Resultants: Moment of a Force about a Specified Axis/Moment of a Couple.
Week 5	Equilibrium of a Rigid Body: Conditions for Rigid Body Equilibrium/ Free-Body Diagrams/ Equations of Equilibrium.
Week 6	Equilibrium in three dimensions: Free-Body Diagrams/ Equations of Equilibrium.
Week 7	Structural Analysis: Simple Trusses/ The Method of Joints/ Zero-Force Members.
Week 8	Structural Analysis: The Method of Sections/ Space Trusses/ Frames and Machines.
Week 9	DYNAMICS: Kinematics of a Particle/ Rectilinear Kinematics: Continuous Motion.
Week 10	Motion of a Projectile.
Week 11	Absolute Dependent Motion Analysis of Two Particles.
Week 12	Kinetics of a Particle: Force and Acceleration.
Week 13	Kinetics of a Particle: Work and Energy/ The Work of a Force.
Week 14	Principle of Work and Energy.
Week 15	Power and Efficiency.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?

Recommended Texts	Engineering Mechanics, Twelfth Edition, R. C. Hibbeler.	Yes
Recommended Texts		
Websites		

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
<b>Success Group (50 - 100)</b>	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
	<b>C</b> - Good	جيد	70 - 79	Sound work with notable errors
	<b>D</b> - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	<b>E</b> - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 – 49)</b>	<b>FX</b> – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> – Fail	راسب	(0-44)	Considerable amount of work required
<b>Note:</b> 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.				