

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information				
معلومات المادة الدراسية				
Module Title	Engineering Mechanics		Module Delivery	
Module Type	Core		☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☒ Seminar	
Module Code	MECT 102			
ECTS Credits	8			
SWL (hr/sem)	240			
Module Level	UGx11 1	Semester of Delivery		1
Administering Department	Mechatronics	College	HUC	
Module Leader	Ruqayah Nassr Jawad		e-mail	Ruqaya_nasr_jawad@hilla_unc.edu.iq
Module Leader's Acad. Title	Assistant Lecturer	Module Leader's Qualification	M.Sc.	
Module Tutor	Name (if available)		e-mail	E-mail
Peer Reviewer Name	Name		e-mail	E-mail
Scientific Committee Approval Date	1/3/2026	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	Through this module, students will develop the necessary skills to analyze and solve engineering problems involving forces, motion, and equilibrium.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of the engineering mechanics module, students should be able to: 1. Understand and apply the principles of statics and dynamics in engineering systems. 2. Analyze and solve problems related to forces, moments, equilibrium, and motion of particles. 3. Apply vector mathematics and coordinate systems to engineering mechanics problems.

	4. Identify and analyze different types of supports in structures and machines. 5. Interpret and draw free body diagrams to represent the forces acting on a system. 6. Utilize computational tools for solving engineering mechanics problems.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1. Introduction to Engineering Mechanics - Overview of mechanics and its applications in engineering - Fundamental concepts and principles 2. Statics - Forces and vectors - Equilibrium of particles and rigid bodies - Moment of a force and its applications - Friction and its effects - Center of Mass and Centroid 3. Dynamics - Motion of particles: kinematics and kinetics - Newton's laws of motion - Work, energy, and power - Impulse and momentum 4. Problem-Solving and Applications - Engineering problem-solving techniques - Case studies and practical examples

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.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	181	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	13
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	59	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	240		

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	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Fundamental Concepts, Vectors Quantities and Forces Analysis
Week 2	Moment
Week 3	Force Resultants
Week 4	Equilibrium of the Forces System
Week 5	Equilibrium of Bodies
Week 6	Friction
Week 7	Center of Mass and Centroid
Week 8	Mid-term Exam
Week 9	The Moment of Inertia
Week 10	Introduction to Dynamics
Week 11	Kinematics of a Particle: Rectilinear Motion
Week 12	Kinematics of a Particle: Curvilinear Motion
Week 13	Kinetics of a Particle: Force and Acceleration
Week 14	Kinetics of a Particle: Work and Energy
Week 15	Kinetics of a Particle: Impulse and momentum
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	ENGINEERING MECHANICS, STATIC, FOURTEENTH EDITION, R. C. HIBBELER ENGINEERING MECHANICS, DYNAMICS, FOURTEENTH EDITION, R. C. HIBBELER	
Recommended Texts	J.L. MERIAM, L.G. KRAIGE and J. N. BOLTON, ENGINEERING MECHANICS STATICS, EIGHTH EDITION	
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.				

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العميد

عميد الكلية : أ.د. هارون عبد الكاظم شهد

التاريخ : 2026 / 3 / 23

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رئيس القسم : أ.د. حسين فاضل

التاريخ : 2026 / 3 / 23

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التاريخ : 2026 / 3 / 23