



Unit Description Form Course Description Form Faculty of Engineering/ Department of Biomedical



Module Information			
معلومات المادة الدراسية			
Module Title	Physics		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	ENG-104		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	UGI	Semester of Delivery	Two
Administering Department	BME.	College	ENG.
Module Leader	MSc. Ghufan Basim Medeb	e-mail	ghufan.basim@uowa.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	MSc.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	26/9/2025	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
Course objectives, learning outcomes and instructional contents

Module Aims أهداف المادة الدراسية	1. To real engineering problem solving and preparing the student for more advanced studies in engineering mechanics. 2. To understand static and moving bodies, force, moment, resultants, equilibrium, mas and acceleration, moment of inertia and polar moment of inertia, Impulse and momentum, energy and power. 3. To understand first and second Newtons Laws problems. 4. To use the techniques, skills, and modern engineering tools necessary for engineering practice.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On completion of the module the student is expected to be able to: 1. Explain the two Newton's laws used in engineering mechanics. 2. Overcome any misconceptions about engineering mechanics (force, energy, power, work etc). 3. Reiterate formal problem-solving skills in a form more convenient for engineering applications. 4. Get hold of four basic thinking skills: I. Consciously inconsistencies involving their preconceptions about mechanics II. Arrange systematically the ideas of mechanics in a problem-solving form III. Apply mechanics principles to given realistic engineering problem IV. Solve realistic engineering problem.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – Static Static bodies, and force systems. [15 hrs] Resultant of forces. [9 hrs] Equilibrium of static bodies. [9 hrs] Three-dimensional force system. [9 hrs] Centroid, center of mass, Moment of inertia and polar moment of inertia. [9 hrs] Distributed force – friction. [9 hrs]

	Part B – Dynamic Moving bodies. [6 hrs] Absolute motion. [6 hrs] Force, mass and acceleration. [6 hrs] Force, energy and power. [6 hrs] Impulse and momentum. [6 hrs]
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Active learning: Encouraging students to actively participate by solving exercises and problems on their own, which enhances their understanding of mathematical concepts. 2. Cooperative learning: Teamwork to solve mathematical problems, which helps exchange ideas and develop analytical skills. 3. Continuous assessment: Conduct short tests and regular exercises to monitor students' progress and identify points that need strengthening. 4. Explanation and discussion: Encourage students to explain their solutions and ways of thinking to stimulate deep understanding and improve communication skills.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	108	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	9
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation					
تقييم المادة الدراسية					
		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	1, 3, 4, 7
	Assignment	2	10% (10)	2, 12	1, 3, 4, 7
	Projects / Lab.	1	10% (10)	Continuous	1, 3, 4, 7
	Report	1	10% (10)	13	1, 3, 4, 7
Summative assessment	Midterm Exam	2hr	10% (10)	7	1, 3, 4, 7
	Final Exam	2hr	50% (50)	16	1, 3, 4, 7
Total assessment			100% (100 Marks)		

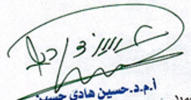
Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction into Two- and Three-Dimensional system, Rectangular Component
Week 2	Force Systems
Week 3	Moment
Week 4	Couple
Week 5	Resultants
Week 6	Equilibrium
Week 7	Structures I
Week 8	Structures II
Week 9	MID Exam 1
Week 10	Second Moment of Area and Moment of Inertia
Week 11	Centre of Mass
Week 12	Distributed loads

Week 13	Friction I
Week 14	Friction II
Week 15	MID Exam 2

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	ENGINEERING MECHANICS: STATICS, (6th editions), by J. L. MERIAM and L. G. KRAIGE.	Yes
Recommended Texts	<u>Engineering Mechanics - Statics, R.C. Hibbeler, 12th Edition</u>	
Recommended Websites	https://www.coursera.org/browse/physical-science-and-engineering/mechanical-engineering	

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.				


Head of the Department
Dr. Osama Abdulbari


أ.م.د. هاني هادي حسين
عميد كلية الهندسة

