

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Dynamics	Module Delivery	
Module Type	Core	<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	CIV006		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	UGII		
Administering Department	CV101	College	College of Engineering
Module Leader	Dr. Atheer Faisal Al-Anbaki	e-mail	atheer.alanbaki@uoanabr.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Ph.D.
Module Tutor		e-mail	E-mail
Peer Reviewer Name	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	ENG001 Physics	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none"> 1. Develop excellent understanding of the mathematics and scientific principles related to engineering mechanics. 2. Familiarize the students with key techniques used in the analysis of mechanical systems. 3. Introduce fundamental concepts of dynamics.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 1. Use rectangular, normal-tangential, and polar coordinate systems to describe the motion (kinematics) of a particle, system of particles, and rigid bodies. 2. Use Newton's Second Law, Work-Energy, and Impulse-Momentum principles to determine the kinetics of particles, systems of particles, and rigid bodies. 3. Understand and solve introductory vibration problems. 4. In applying the above principles, continue to develop a systematic, orderly procedure for solving engineering problems and design mechanical device using their knowledge in Dynamics.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Fundamental concepts of kinematics and kinetics with application of particles and plane motion of rigid bodies, Rectilinear and curvilinear motion of particles. Newton's second law, impulse and momentum methods, impact, Dynamics of systems of particles, Kinematics of rigid bodies. Plane motion of rigid bodies: Forces and accelerations
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Lectures supported by modes developing material covered in lectures. These modes include theoretical lectures and problem-solving tutorials.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	2.47
Total SWL (h/sem)	100		

الحمل الدراسي الكلي للطالب خلال الفصل					
Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	15% (15)	2, 4, 6, 8, 10	All
	Assignments				
	Projects / Lab.				
	Report				
Summative assessment	Midterm Exam	3 hr	25% (25)	6 and 12	All
	Final Exam	3hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Kinematics of a Particle: Continuous and Erratic Rectilinear Kinematics
Week 2	Kinematics of a Particle: General Curvilinear Motion + Motion of a Projectile
Week 3	Kinematics of a Particle: Absolute Dependent Motion Analysis of Two Particles + Relative-Motion of Two Particles Using Translating Axes
Week 4	Planar Kinematics of a Rigid Body: Translation and Rotation about a Fixed Axis
Week 5	Planar Kinematics of a Rigid Body: Absolute Motion Analysis
Week 6	Planar Kinematics of a Rigid Body: Relative-Motion Analysis: Velocity and Acceleration
Week 7	Kinetics of a Particle: Newton's Second Law of Motion and The Equation of Motion (Rectangular Coordinates)
Week 8	Kinetics of a Particle: Equations of Motion (Normal and Tangential Coordinates)
Week 9	Kinetics of a Particle: The Work of a Force and Principle of Work and Energy
Week 10	Kinetics of a Particle: Power and Efficiency + Conservative Forces and Potential Energy
Week 11	Kinetics of a Particle: Conservation of Energy
Week 12	Kinetics of a Particle: Principle of Linear Impulse and Momentum
Week 13	Kinetics of a Particle: Conservation of Linear Momentum for a System of Particles
Week 14	Kinetics of a Particle: Impact
Week 15	Review

Week 16	Final Exam
Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	R.C. Hibbeler, Engineering Mechanics: Dynamics, Pearson, 14th ed., 2016.	Yes
Recommended Texts	Any other engineering mechanics textbook.	Yes
Websites	https://www.uoanbar.edu.iq/Bank-Section.php	

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.

