

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Engineering Mechanics II (Dynamics)		Module Delivery
Module Type	Basic learning activities		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture
Module Code	PME 122		<input type="checkbox"/> Lab
ECTS Credits	8		<input checked="" type="checkbox"/> Tutorial
SWL (hr/sem)	150		<input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Level	1	Semester of Delivery	2
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Ayad M. Ahmed Alwaise	e-mail	E-mail; Ayad_waise@yahoo.com
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name: Sarah Saad Abduljabbar	e-mail	E-mail
Peer Reviewer Name	me	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	Engineering Mechanics I PRE 112	Semester	First
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	To develop problem solving skills and understanding of dynamics and applications physics theory through the application of techniques. To understand displacements, velocity and accelerations system. This course deals with the basic concept of Mechanical Engineering. This is the basic subject for all Dynamics and forces applications. To understand concept of work and energy problems. The forces that act on an object can be external, such as gravity, friction, or air resistance, or they can be internal, such as the forces that hold the particles of an object together
Module Learning Outcomes	Important: Write a Learning Outcomes, better to be equal to the number of study weeks.

مخرجات التعلم للمادة الدراسية	Dynamics is studying how things move and how different forces affect how they move. It helps us understand how planets move in space and how machines work. It's really important in science and helps us learn about how things in the world move.
Indicative Contents المحتويات الإرشادية	<p>Indicative content includes the following.</p> <p>Dynamics is a branch of physics that deals with the study of motion and forces acting on a body. It is the study of how objects move, interact with each other, and respond to different forces. Dynamics is an important subject in physics, and it is used to explain many natural phenomena, from the movement of planets to the behavior of tiny particles. [15 hrs.]</p> <p>Dynamics is concerned with the motion of objects, and it is often used to describe the movement of objects in three dimensions. In dynamics, the focus is on understanding how forces affect the motion of an object. The forces that act on an object can be external, such as gravity, friction, or air resistance, or they can be internal, such as the forces that hold the particles of an object together. Dynamics is a complex subject, and it requires a deep understanding of physics and mathematics to fully grasp its principles. Dynamics is a fundamental part of physics, and it is used in many different fields, from engineering to astronomy. [15 hrs.]</p> <p>It deals with the study of forces acting on objects that are not moving. The primary objectives of Dynamics are to determine the forces acting on an object, the moments of forces acting on an object, and the equilibrium conditions of an object. The study of Dynamics is essential for the design of structures, such as bridges, buildings, and machines, to ensure that they are safe and reliable. [10 hrs.]</p> <p>Revision problem classes [6 hrs.]</p> <p>The study of dynamics is also important in understanding the behavior of materials under different conditions. Understanding dynamics is crucial in the design and construction of machines and structures, as it allows engineers to predict how these objects will behave under different forces. In astronomy, dynamics is used to study the movement of planets and stars, and it is used to predict the behavior of celestial bodies over time. As such, dynamics is a critical subject in physics, and it is essential for anyone who wants to study the natural world in depth. [15 hrs.]</p>
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: Dynamics is studying how things move and how different forces affect how they move. It helps us understand how planets move in space and how machines work. It's really important in science and helps us learn about how things in the world move.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	100	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	50	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Centroid
Week 2	Moment of Inertia
Week 3	Frictions
Week 4	Introduction to engineering mechanics (Dynamics)
Week 5	Rectilinear Kinematics: Continuous Motion
Week 6	Rectilinear Kinematics: Continuous Motion
Week 7	Rectilinear Kinematics: Erratic Motion
Week 8	General Curvilinear Motion
Week 9	General Curvilinear Motion

Week 10	Motion of a Projectile
Week 11	Absolute Dependent Motion Analysis of Two Particles
Week 12	Absolute Dependent Motion Analysis of Two Particles
Week 13	The Work of a Force
Week 14	The Work of a Force
Week 15	Principle of Work and Energy
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Engineering Mechanics (Dynamics) Hibbeler 13 rd Edition Meriam	Yes
Recommended Texts		No
Websites	https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiGgIKc1rH_AhXthf0HHW57BZwQFnoECBgQAQ&url=https%3A%2F%2Fwww.amazon.com%2FEngineering-Mechanics-Dynamics-Russell-Hibbeler%2Fdp%2F0132911272&usg=AOvVaw2WNN15UV1_GQGx2IAoVDpA	

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.