



Ministry of Higher Education and Scientific Research -
Iraq
Al-Mustaqbal University
College of Engineering
Department of Prosthetics and Orthotics Engineering



MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	ميكانيك هندسي-حركي		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	UOMU0103022		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	
Administering Department	UOMU0103	College	UOMU01
Module Leader	Mariam Ghassan Ghaffar	e-mail	mariam.ghassan.ghaffar@uomus.edu.iq
Module Leader's Acad. Title	Asst. Lect.	Module Leader's Qualification	MSc.
Module Tutor			
Peer Reviewer Name		e-mail	
Review Committee Approval	01/06/2023	Version Number	1.0

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Physics	Semester	1
Co-requisites module		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. To develop problem-solving skills and an understanding of Centroid and moment of inertia through applying techniques. 2. To provide one of the most useful and powerful tools for analysis in engineering. To develop skills to use the basic principles of dynamics in engineering applications. 		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 1. Understand basic laws and principles of kinematics of particle. 2. Define basic kinematic quantities of rectilinear and curvilinear motion of particle such as: position, displacement, velocity and acceleration 3. Explain the rectangular, normal- tangential and polar coordinates. 4. Describe the space curvilinear motion. 5. Explain the relative motion. 6. Discuss the constrained Motion of Connected Particles. Explain the kinetics of particles for rectilinear and curvilinear motion 7. based on the Newton's Second Law 		
Indicative Contents المحتويات الإرشادية	<p>Indicative content includes the following.</p> <ul style="list-style-type: none"> - The fundamental concepts necessary for the study of Centroid and moment of inertia. - The fundamental concepts necessary for the study of dynamics. - The kinematics of particle motion in various coordinate systems, as well as the subjects of relative and constrained motion. - The particle kinetics based on the method of force-mass-acceleration. 		
Learning and Teaching Strategies استراتيجيات التعلم والتعليم			
Strategies	<p>The main strategy that will be adopted in delivering this module is to encourage students' participation in the solution of problems, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes and interactive tutorials as well as reports and assignments .</p>		

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	20% (20)	3,5, 10	LO # 2-6
	Assignments	2	10% (10)	4, 12	LO # 2-6
	Projects / Lab.				
	Report	1	10% (10)	13	LO # 1-6
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
Week 1	Center of Gravity and Centroid
Week 2	Center of Gravity and Centroid
Week 3	Moment of inertia.
Week 4	Moment of inertia
Week 5	Introduction to dynamics, Kinematics of Particles- Rectilinear Motion
Week 6	Plane Curvilinear Motion: Rectangular Coordinates (x-y) + Projectile Motion
Week 7	Plane Curvilinear Motion: Rectangular Coordinates (x-y) + Projectile Motion
Week 8	Normal and Tangential Coordinates (n-t)
Week 9	Polar Coordinates (r-θ)
Week 10	Mid-term Exam + Space Curvilinear Motion

Week 11	Space Curvilinear Motion
Week 12	Relative Motion (Translating Axes)
Week 13	Constrained Motion of Connected Particles
Week 14	Kinetics of Particles: Newton's Second Law + Equation of Motion and Solution of Problems
Week 15	Kinetics of Particles: Rectilinear Motion

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Engineering Mechanics, Statics by R.C. Hibbler, 4th Edition Engineering Mechanics Dynamics by J.L. Meriam and L.G. Kraige	Yes
Recommended Texts	Engineering Mechanics: Dynamics by Russell Hibbeler	yes
Websites		

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
<p>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.</p>				



ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي