	Ministry of Higher Education and Scientific Research - Iraq University of Technology Biomedical Engineering Department	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering mechanics**			**Module Delivery**	
Module Type	**E**			☒**Theory** ☒**Lecture** ☐**Lab** ☒**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	**ENME123**				
ECTS Credits	**8**				
SWL (hr/sem)	**200**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Wisam Kadhim		**e-mail**	Wisam.k.hamdan@uotechnology.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/06/2023		**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	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 Newton's 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: LO1 Explain the two Newton's laws used in engineering mechanics. LO2 Overcome any misconceptions about engineering mechanics (force, energy, power, work etc). LO3 Reiterate formal problem-solving skills in a form more convenient for engineering applications. LO4 Get hold of four basic thinking skills: • Consciously inconsistences involving their preconceptions about mechanics • Arrange systematically the ideas of mechanics in a problem-solving form • Apply mechanics principles to given realistic engineering problem • Solve realistic engineering problem.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A – Static</u> 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] <u>Part B – Dynamic</u> 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]

Course Description	
Course Description	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 and by considering type of assignments involving some problem solving that are interesting to the students.

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 and by considering type of assignments involving some problem solving that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	107	**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)	4,8	LO # 2, 3
	Quizzes	2	10% (10)	11,14	LO #1, 2
	Assignments	1	10% (10)	10	LO # 2,3,4
	Assignments	1	10% (10)	15	LO # 1,2,4
Summative assessment	Midterm Exam	2 hr	10% (10)	8	LO # 2-4
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Static bodies, and force systems
Week 2	Static bodies, and force systems
Week 3	Static bodies, and force systems, Resultant of forces
Week 4	Resultant of forces
Week 5	Equilibrium of static bodies
Week 6	Equilibrium of static bodies , Three dimensional force system
Week 7	Three dimensional force system
Week 8	Centroid, center of mass, Moment of inertia and polar moment of inertia
Week 9	Centroid, center of mass, Moment of inertia and polar moment of inertia, Distributed force – friction
Week 10	Distributed force – friction
Week 11	Moving bodies
Week 12	Absolute motion
Week 13	Force, mass and acceleration
Week 14	Force, energy and power
Week 15	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, STATICS 6th Edition J.L. MERIAM	Yes
Required Texts	Engineering Mechanics, DYNAMICS 6th Edition J.L. MERIAM	Yes
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.