



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	مقاومة مواد II		Module Delivery
Module Type	CORE		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOMU0103042		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	
Administering Department	UOMU0103	College	UOMU01
Module Leader	Fatima Rahim Abass	e-mail	Fatima.Rahim.Abass@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	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	<ol style="list-style-type: none"> 1. To develop problem solving skills and understanding of materials theory through the application of techniques. 2. To understand the relation between the forces and the stresses. 3. This course deals with the basic concept of stresses and strains. 4. This is the basic subject for all types of determinate structures. 5. To understand the methods of solving stresses, strains, and deflections problems. 		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 1. Recognize how determinate structures works under various types of loading. 2. List the various loading associated with determinate structures. 3. Summarize what is meant by a stresses and strains. 4. Describe the stress, the strains and the deflection. 5. Define Hook's law. 6. Identify the basic structural elements and their applications. 7. Discuss the operations of sinusoid and phasors in an electric circuit. <p style="text-align: center;">Discuss the various properties of beams, columns.</p>		
Indicative Contents المحتويات الإرشادية	<p>Indicative content includes the following.</p> <p>Strains: - Definition, Hook's Low, Poisson's ratio, Thermal strain, Stress-strain diagram, Linear relation between E,G and V.</p> <p>Transformation of stress and strain: - Equation for the transportation of plane stress, Principal stress, Mohr' s Circle of stress, Equations for transportation of plane strain Mohr's Circle of stress.</p> <p>Deflection of Beams: - Governing differential equation for deflection of elastic beam, Double Integration method, Moment area method.</p> <p>Columns: - Natural of the beam column problem, Euler buckling load</p>		
Learning and Teaching Strategies استراتيجيات التعلم والتعليم			
Strategies	Type something like: 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 that are interesting to the students.

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	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	-	-	-	-
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
Week 1	Strain: - Definition, Hook's Law, Poisson's ratio.
Week 2	Strain: - Thermal strain.
Week 3	Strain: - Stress-strain diagram.
Week 4	Strain: - Linear relation between E, G and V
Week 5	Transformation of stress and strain: -Equation for the transportation of plane stress.

Week 6	Transformation of stress and strain: -Principal stress, Mohr ' s Circle of stress.
Week 7	Transformation of stress and strain: -Equations for transportation of plane strain Mohr ' s Circle of stress
Week 8	Transformation of stress and strain: -Equations for transportation of plane strain Mohr ' s Circle of stress
Week 9	Deflection of beams: - Governing differential equation for deflection of elastic beam.
Week 10	Deflection of beams: - Double Integration method, Multiple Equation Methods.
Week 11	Deflection of beams: - Double Integration method, General Equation Method.
Week 12	Deflection of beams: - Moment area method
Week 13	Columns: -Natural of the beam column problem, Euler buckling load
Week 14	Columns: -Natural of the beam column problem, Euler buckling load
Week 15	Columns: -Natural of the beam column problem, Euler buckling load

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Strength of Materials, by: Singer.	Yes
Recommended Texts	Introduction to Mechanics of Solid, by: E. Popov. Elements of Strength of Materials, by: Timoshenko Mechanics of Materials by: Russell C. Hibbeler. Mechanics of materials by: Ferdinand Beer et al. Mechanics of Materials by: Manua Gere. Strength of Materials, J. P. Den Hartog	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