



Unit Description Form
Course Description Form
Faculty of Engineering /
Department of



Unit Information
Course Information

Unit Title	Resistance of Materials -1		Unit delivery	
Unit Type	fundamental		<input checked="" type="checkbox"/> نظريه <input checked="" type="checkbox"/> حاضر <input type="checkbox"/> المختبر <input type="checkbox"/> تعليمي <input type="checkbox"/> عملي <input type="checkbox"/> Seminar	
Unit Code	WBM-31-02			
ECTS Credits	8			
SWL (ساعة / SEM)	45 hours			
Unit level	3	Delivery Semester		
Administrative Management	Biomedical	College	Engineering	
Unit Commander	Eng. Hussein Amir Al-Jawad	E-mail Address	Hussein.aljawad@uowa.edu.iq	
Title of Unit Commander	Assistant Lecturer	Unit Commander Qualifications	Master	
Unit Teacher		E-mail Address		
Peer Reviewer Name	name	E-mail Address	E-mail Address	
Date of accreditation of the Scientific Committee	26/9/2024	Version number	1.0	

Relationship with other units
Relationship with other subjects

Prerequisites Unit	No	Semester	
Common Requirements Unit	No	Semester	

Unit objectives, learning outcomes and how-to contents Course objectives, learning outcomes and instructional contents	
Objectives of the Unit Course Objectives	<p>Understanding the mechanical properties of materials: The study of mechanical properties such as tensile, compression, bending, shear, and torsion.</p> <p>Study the behavior of materials under loads: Understand how materials are affected by forces such as tension, pressure, and shear.</p> <p>Analysis of stresses and deformations: Learn how to calculate the stresses and strains that occur in materials.</p> <p>Mechanical failure study: Understand the causes of material failure such as breakage, cracking, and tearing, and how to avoid them.</p> <p>Utilizing Material Resistance Equations: Apply equations and theorems to safely analyze and design structures.</p>
Unit Learning Outcomes Learning outcomes of the course	<p>Understanding and analyzing forces acting on materials: the ability to calculate stresses and deformations caused by certain forces on materials.</p> <p>Design of structures: the ability to design engineering structures or parts taking into account the resistance of the materials used.</p> <p>Analysis of the behavior of materials: the ability to determine how substances behave under the influence of various loads.</p> <p>Dealing with deformations and failures: the ability to predict possible places of failure in materials or structures.</p> <p>Application of engineering equations: Use appropriate equations and theorems to analyze and explore the behavior of materials.</p>
Indicative Contents Indicative Contents	<p>Introduction to Material Resistance: Introduce basic concepts such as stress and strain .</p> <p>Types of loads affecting materials: such as tensile, compression, shear, and torsion loads.</p> <p>Displacement and stress theory: how to calculate the effect of loads on materials and structures.</p> <p>Mechanical failure: analysis of the causes of material failure and how to prevent them.</p> <p>Analysis of stresses in structures: the study of stresses caused by forces acting on geometric objects.</p> <p>Different materials: study the behavior of materials such as steel, aluminum, and concrete under the influence of various loads</p>

Learning and Teaching Strategies Learning and Teaching Strategies	
Strategies	<p>Practical learning: Conducting practical experiments to test the behavior of materials under the influence of various loads.</p> <p>Case Study: Analysis of real cases of failure of materials or structures to apply the concepts studied.</p> <p>Use of engineering software: Train students to use software such as ANSYS or MATLAB to analyze material behavior.</p> <p>Project-based education: Assign students to design engineering structures or parts taking into account the resistance of materials..St.</p>

Student Workload (SWL)			
The student's academic load is calculated for 15 weeks			
SWL منظم (h / sem) Regular academic load of the student during the semester	30	SWL regulator(h/s) Regular student load per week	5
SWL غير منظم (h / sem) Irregular academic load of the student during the semester	15	Unregulated SWL (h/s) Irregular student academic load per week	5
إجمالي SWL (h / sem) The student's total academic load during the semester			30

Unit Evaluation					
Course Evaluation					
	As	Time/Number	Weight (tags)	Week due	Related learning outcomes
Formative Assessment	Contests	2	10% (10)	5, 10	LO #1 , 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO #3 , 4, 6 and 7
	Projects /Laboratory.	1	10% (10)	continuous	every
	report	1	10% (10)	13	LO #5 , 8 and 10
Final Assessment	Midterm Exam	2 hr	10% (10)	7	LO #1-7
	Final Exam	2 hours	50% (50)	16	every
Overall Rating			100% (100 degree)		

Delivery Plan (Weekly Curriculum)	
Theoretical Weekly Curriculum	
week	Covered Material
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	

Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources		
Learning and Teaching Resources		
	text	Available in the library?
Required texts	Clinical Biochemistry, (8 editions), by Leipencotts	Yes
Recommended texts		Yes
Websites		

Grading chart				
Grading chart				
group	degree	Appreciation	Tags (%)	definition
An-Najah Group (50 - 100)	A - Excellent	privilege	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Proper work with noticeable errors
	D - Satisfactory	medium	60 - 69	Fair but with significant shortcomings
	E - sufficient	Acceptable	50 - 59	The work meets the minimum standards
Group failure (0 - 49)	FX - Failed	Deposit (in processing)	(45-49)	More work required but credit granted
	F - Failed	Failure	(0-44)	Large amount of work required

Note: Signs that are more than 0.5 decimal places greater than or below the full mark will be rounded higher or lower (for example, a score of 54.5 will be rounded to 55, while a mark of 54.4 will be rounded to 54. The university has a policy of not tolerating "imminent traffic failure", so the only modification to the marks granted by the original mark(s) will be the automatic rounding described above.