



Jordan University of Science and Technology
Faculty of Engineering
Aeronautical Engineering Department

AE413 Mechanics Of Materials Lab - JNQF Level: 7

Second Semester 2023-2024

Course Catalog

1 Credit Hours. The Mechanics of Materials Laboratory course offers hands-on exploration and practical applications of concepts learned in the Mechanics of Materials theory through a series of experiments. The laboratory covers fundamental experiments on the strength of materials such as axial loading, torsion, bending and deflection, buckling, and fatigue experiments. In addition to experiments on thin-walled pressure vessels, non-destructive evaluation, hardness, impact, creep, and heat treatment. The lab enhances skills in experimental techniques and data interpretation, preparing students for real-world applications in materials engineering and structural analysis.

Teaching Method: On Campus

Instructor

Name	Dr. Adnan Al Ghasem
Office Location	N1L2
Office Hours	Sun : 09:30 - 10:30 Tue : 09:30 - 11:30 Tue : 13:30 - 14:30 Wed : 13:30 - 14:30 Thu : 09:30 - 10:30
Email	adnan100@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Tue : 14:30 - 17:30
Room: LAB

Prerequisites

Line Number	Course Name	Prerequisite Type
713720	AE372 Instrumentation Lab	Pre./Con.
713320	AE332 Aircraft Structural Materials	Prerequisite / Study

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Apply theoretical concepts from Mechanics of Materials in practical settings by performing experiments using axial loading, torsion, bending and deflection, buckling, and fatigue testing. [1SO6] [1L7S3]	20%	
Demonstrate proficiency in conducting experiments on thin-walled pressure vessels, non-destructive evaluation, hardness, impact, creep, and heat treatment. [1SO6] [1L7S3]	40%	
Interpret experimental results to understand material properties and their significance in engineering applications. [1SO6] [1L7S3]	10%	
Evaluate the effects of different factors such as loading conditions, material composition, and treatment methods on material performance. [1SO6] [1L7S3]	10%	
Communicate experimental procedures, findings, and conclusions through written reports and oral presentations. [1SO3] [1L7C3]	20%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
		20			80	

Relationship to NQF Outcomes (Out of 100%)	
L7S3	L7C3
80	20

Evaluation	
Assessment Tool	Weight
Reports	33%
MidTerm Exam	20%
Quizzes	7%
Final	40%

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