



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

IE213 Mechanics Of Materials 1

Summer Semester 2019-2020

Course Catalog

3 Credit Hours. This course is intended to provide the student with a clear and thorough presentation of both the theory and application of the fundamental principles of mechanics of materials. Emphasis is placed on the analysis of force systems, moments, equilibrium of rigid bodies, internal forces, geometric properties of areas, stress and strain, mechanical properties of materials, axially loaded members, torsion loading and stresses in shafts, bending loading and stresses and strains in beams.

Text Book

Text Book	
Title	Mechanics of Materials
Author(s)	Russell C. Hibbeler
Edition	9th Edition
Short Name	ref 1
Other Information	

Instructor

Name	Dr. Omar Bataineh
Office Location	C5L2
Office Hours	
Email	omarmdb@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Sun, Mon, Tue, Wed : 13:00 - 14:30
Room: منصة الكترونية

Prerequisites		
Line Number	Course Name	Prerequisite Type
921010	PHY101 General Physics (1)	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction and definitions	
Week 2	Force system	
Week 4	Force analysis	
Week 6	Moments and couples	
Week 9	Force resultant and equivalent moment	
Week 10	Equilibrium	
Week 11	Concepts of stress, strain and deflection	
Week 11	Normal and shear stresses	
Week 12	Axially loaded members	
Week 13	Geometric properties of sections	
Week 13	Stress -strain relationship and elastic properties	
Week 14	Loaded beams	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Construct free-body diagrams for simple-loaded structures and apply equations of equilibrium [1SLO1]	25%	
Calculate internal resultant loads in beams and simple structural elements [1SLO1]	25%	
Assess properties of geometric and sections such as centroids and moments of inertia for area [1SLO1]	25%	
Calculate stresses and strains in axially loaded members, torque loaded members, and members under bending [1SLO1]	25%	

Relationship to Program Student Outcomes (Out of 100%)						
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6	SLO7
100						

Evaluation	
Assessment Tool	Weight

Midterm Exams	60%
Final Exam	40%

Policy	
Class attendance	Attendance will be checked at the beginning of each class. University regulations will be strictly followed for students exceeding the maximum number of absences. No make-up test will be given without an official university-approved excuse.
Conduct	JUST rules and regulations will be enforced wherever applicable during the course

Date Printed: 2020-09-24