



MUTAH UNIVERSITY
Faculty of Engineering
Department of Mechanical Engineering



Engineering Mechanics

COURSE SYLLABUS

Course Code	Course Name	Credits	Contact Hours
0402226	Engineering Mechanics	3	48

INSTRUCTOR/COORDINATOR	
Name
Email@mutah.edu.jo
Website	

TEXTBOOK
<p><u>TextBook:</u></p> <ul style="list-style-type: none"> • Engineering Mechanics – Statics, By R. C. Hibbeler, 13th SI Edition, Prentice Hall. <p><u>References:</u></p> <ol style="list-style-type: none"> 1. Vector Mechanics for Engineers, Statics, 10th Ed., by Beer, Johnston, Cornwall and Mazurek, McGraw-Hill, c 2013. 2. Engineering Mechanics, Statics. By J.L. Meriam and L.G. Kraige, Willy.

SPECIFIC COURSE INFORMATION
<p>A. Brief Description of the Content of the Course (Catalog Description)</p> <p>Force vectors and resultant. Free-body diagram of forces and equilibrium of particles and rigid bodies. Moment of a force about a point and about an axis. Equilibrium of rigid body. Analysis of trusses and frames. Shear forces diagrams and bending moment diagrams. Center of area and moment of inertia of an area.</p>
<p>B. Pre-requisites (P) or Co-requisites (C)</p> <p>(P): 0301102 + 0302102</p>
<p>C. Course Type (Required or Elective)</p> <p>Required</p>

SPECIFIC GOALS
<p>A. Specific Outcomes of Instruction</p>

After successfully completing this course, the students should be able to:

1. Understand force vectors and resultants (SLO-1).
2. Determine the moment of a force about a point and an axis and the reactions of a rigid body (SLO-2).
3. Understand the analysis of distributed loads (SLO-1).
4. Perform analysis of trusses and frames (SLO-2).
5. Draw the shear and moment diagrams of a beam (SLO-1).
6. Understand the analysis of static friction problems (SLO-1).
7. Determine the centroid and moment of inertia of a composite area (SLO-2).

B. Student Learning Outcomes (SLOs) Addressed by the Course

1	2	3	4	5	6	7				
✓	✓									

BRIEF LIST OF TOPICS TO BE COVERED

List of Topics	No. of Weeks	Contact Hours
• Introduction: General Principles	1	3 hr/week
• Force Vectors.	2-3	3 hr/week
• Equilibrium of a Particle.	3-4	3 hr/week
• Force System Resultants.	5	3 hr/week
• Equilibrium of a Rigid Body	6	3 hr/week
• Structural Analysis.	7-8	3 hr/week
• Internal forces	9-10	3 hr/week
• Friction	11-12	3 hr/week
• Center of Gravity and Centroid	13-4	3 hr/week
• Moments of Inertia	14-16	3 hr/week

METHODS OF ASSESSMENT

No.	Method of assessment	Week and Date	%
1	Midterm Examination	9th week	30
2	Homeworks and Activities	All over the Semester	20

3	Final examination	End of Semester	50
Total			100