



The University of Jordan
School of Engineering
Industrial Engineering Department
2nd 2020/2021

Course name:	Engineering Mechanics		
Course code:	0906231		
Credits hours	3 Hours		
Contact hours/room:	Section 1: 10:00-11:30 Monday and Wednesday Section 2: 11:30-12:30 Sunday, Tuesday and Thursday		
Course instructor's name, E-mail, and phone:	Dr. Yazan AlZain		
	y.alzain@ju.edu.jo		
	+ Ex 22731		
Course Coordinator:	Dr. Yazan Alzain		
Text book:	A- Required book(s), assigned reading and audio-visuals: 1. Engineering Mechanics: Statics and Dynamics, 14th edition, by R. C. Hibbeler, Pearson.		
Other reference(s):			
Course Description:	<p>As stated in the approved study plan.</p> <p>In terms of teaching hours, the course is divided into two equal parts. Part one covers: General principles. Force systems, resultant, moment of a force, equivalent force-couple system. Particles and rigid body equilibrium in one plane. Trusses and frames. Beams; shear force and bending moment diagrams. Center of gravity and centroid. Area moment of inertia.</p> <p>Part two covers: Planar kinematics and kinetics (Newton's second law and work-energy method) of particles and rigid bodies in rectilinear and curvilinear motion (normal and tangential coordinates).</p>		
Providing Department:	Industrial Engineering		
Prerequisite Course:	0301102		
Course type			
Assessment Methods:	Method	Weight %	Date
	Mid Exam	30	
	Projects & Presentation skills	20	
	Final Exam	50	
Course Learning Outcomes:	#	After successful completion of this course, the student will be able to	SO
	CLO1	Components of a force and the resultant force for a system of forces	1
	CLO2	Moment caused by a force acting on a rigid body	1
	CLO3	Principle of transmissibility and the line of action	1

	CLO4	Moment due to several concurrent forces	1	
	CLO5	Force in members of a truss using the Method of Joints and the Method of Sections	1	
	CLO6	Kinematic quantities of rectilinear and curvilinear motion of particle such as: position, displacement, velocity, and acceleration,	1	

Brief list of topics	Week #	Topic
	1	Chapter One: General principles
	1	Chapter Two: Force Vectors
	2-3	Chapter Three: Equilibrium of a Particle
	4	Chapter Four: Force System resultants
	5	Chapter Five: Equilibrium of a rigid body
	6	Chapter six: Structural Analysis
	7	Chapter seven: Internal Forces
	8	Chapter 9: Center of Gravity and Centroid
	9-10	Chapter 10: Moment of Inertia
	11-13	Chapter 12 Kinematics of a Particle
	14-15	Chapter 13 – Kinematics of a Particle: Force and Acceleration
16	Chapter 14 – Kinetics of a particle: Work and Energy	

Important Notes:	<ul style="list-style-type: none"> • Don't Cheat; direct copying of others work will NOT be allowed or tolerated and will result in a reduction of grade. If you are found to be cheating in any way, on an exam or assignment, even signing the roll sheet for another student, you will be given an "F" for the course. There will be no exceptions. • All cases of academic dishonesty will be handled in accordance with university policies and regulations. JU policy requires the faculty member to assign ZERO grade (F) if a student misses 15% of the classes that are not excused, and 20% of the classes that are excused • Students are expected to be ready to take a quiz any time they have a class. There will be no make-up quizzes or home works. • Any students with disabilities who need accommodations in this course are encouraged to speak with the instructor as soon as possible to make appropriate arrangements for these accommodations.
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<i>The B.Sc. in industrial Engineering program enables students to achieve, by the time of graduation the following program learning outcome (SOs). Student outcomes are outcomes (1) through (7), plus any additional outcomes that may be articulated by the program.</i>			
1	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	5	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
2	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	6	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
3	An ability to communicate effectively with a range of audiences	7	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
4	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts		