Course Code	Course Name	Credits	Contact Hours
0403200	Statics	3	3T

INSTRUCTOR/COORDINATOR

Name	**Dr. Qusay Al-Kaseasbeh**
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Office Hours	12:00 – 2:00 PM (Sun, Tu)
Classroom/Time	Faculty of Engineering- H9 / 9:30-11:00 AM (Mon, Wed)

TEXTBOOK

Title	Engineering Mechanics: Statics in SI Units
Author/Year/Edition	R.C. Hibbeler, 14th Ed., ISBN: 978-1-292-08923-2/2016

Other Supplemental Materials

Title	
Author/Year/Edition	

SPECIFIC COURSE INFORMATION

A. Brief Description of the Content of the Course (Catalog Description)

- Introduction to Mechanics of Rigid bodies, Fundamental Concepts, International System of units, Force Vectors.
- Equilibrium of a Particle, Force System Resultant, Equilibrium of a Rigid body.
- Analysis of simple structures by Joints & Sections methods.
- Internal Forces: Shear & Moment Diagrams.
- Friction.
- Geometric properties: Centroid & Moments of Inertia

B. Pre-requisites (P) or Co-requisites (C)

General Physics (2) (0302102) **(P)**
Engineering Drawing (0403198) **(P)**

C. Course Type (Required or Elective)

Required

SPECIFIC GOALS

A. Course Learning Objectives (CLOs)

By the end of this course, the student should be able to:

CLO1: Develop an understanding of the Fundamental concept of Mechanics, SI units, Vectors Operations, and Dot & Cross Product (1).

CLO2: Introduce the concept of the Free-body-diagram and Equilibrium for a particle (1).

CLO3: Understand the moment of a force about a specified axis, principle of moments, and the moment of a couple (1).

CLO4: Introduce the concept of the Free-body-diagram and Equilibrium for a rigid body and solve rigid-body equilibrium problems (1).

CLO5: Determine the truss and frame members forces using the method of Joints & Sections (1).

CLO6: Determine the Internal Loadings in a member at a specified point and draw Shear & Moment diagrams (1).

CLO7: Introduce the concept of dry Friction and show its applications (1).

CLO8: Introduce and determine the concepts of the Center of gravity, Center of mass, the Centroid, and the Moment of Inertia for an area (1).

B. Student Learning Outcomes (SOs) 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 to the Fundamental concept of Mechanics, SI units, Scalar & Vectors operations, and Dot & Cross Product.	1	3
Equilibrium conditions of a particle, Free-body-diagram, and 3D Force system.	1	3
Moment of a force, Moment of a force about a specified axis, and Moment of a Couple.	2	6
Equilibrium conditions of a rigid-body, Free-body-diagram, Equations of Equilibrium, and 2D & 3D Force system.	2	6
Simple Trusses, Method of Joints & Sections, and Zero-force members.	2	6
Shear & Moments equations and diagrams, Distributed load, shear, and Moment relations.	2	6

Dry Friction Characteristics and problems.	2	6
Center of gravity, Center of Mass, the Centroid of a body, Moment of Inertia, Parallel-Axis Theorem, and Radius of Gyration	2	6
Final Exam	-	-
Total	*14*	*42*

EVALUATION		
Assessment Tool	**Due Date**	**Weight (%)**
Mid Exam	According to the university calendar	30
Course Work (Homeworks, Quizzes, Projects, …etc.)	One week after being assigned	20
Final Exam	According to the university calendar	50

ABET's Students Learning Outcomes (Criterion # 3)		
	Relationship to program outcomes	
ABET 1-7		**Engineering Student Outcomes**
1	√	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
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.
3		an ability to communicate effectively with a range of audiences.
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.
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.
6		an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7		an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.