



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

CE 201 Statics

2007 Course Catalog

3 Credit hours (3 h lectures). 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. Analysis of trusses and frames. Shear forces diagrams and bending moment diagrams. Centroids and moment of inertia of an area.

Textbooks

Beer and Johnston, Vector Mechanics for Engineers, STATICS , 9th edition, McGraw-Hill Companies, Inc (2010)

References

Books

- 1) Hibbeler RC, *Engineering Mechanics: Statics*, 13th edition, Prentice Hall (2012)
- 2) Meriam J.L. and Kraige L.G., *Engineering Mechanics Statics*, 6th edition, Wiley (2006)

Prerequisites

Prerequisites by topic	GENERAL PHYSICS (1), GENERAL PHYSICS (LAB)
Prerequisites by course	PHY101, PHY107
Co-requisites by course	
Prerequisite for	CE 202, CE 301

Topics Covered

Topics	Week
Introduction to course outlines, objectives and grading	1
Vector analysis	1
Statics of Particles	1
Rigid bodies: Equivalent system of forces	1
Equilibrium of rigid bodies	1
Supports detailings	1
Reaction calculations	1
Analysis of trusses: method of joints and method of sections	2
Analysis of Frames	2
Shear and bending moment in a beam	2
Centroids and Moment of inertia of composite areas	2
Midterm Examinations	2
Final Examination	1

Evaluation

Assessment Tool	Expected Due Date	Weight
Homework & Quizzes	One week after homework problems are assigned	10%
First Exam	According to the department schedule	25 %
Second Exam	According to the department schedule	25 %
Project:		
Final Exam	According to the University final examination schedule	40 %

Objectives and PIs

Course Objectives	Performance Indicators
CO-1: Analyze equilibrium of a particle in 2D and 3D and rigid body.	(a)PI_1: Students are able to apply knowledge of mathematics, science, and engineering. (e)PI_2: Students are able to identify engineering problems.
CO-2: Analyze simple truss and frames using equilibrium equations.	(a)PI_1: Students are able to apply knowledge of mathematics, science, and engineering. (e)PI_2: Students are able to solve engineering problems.
CO-3: Analyze the shear force and bending moment of a beam.	(a)PI_1: Students are able to apply knowledge of mathematics, science, and engineering. (e)PI_3: Students are able to solve engineering problems.
CO-4: Discuss the first moment and second moment of an area.	(a)PI_1: Students are able to apply knowledge of mathematics, science, and engineering. (e)PI_3: Students are able to solve engineering problems.

Contribution of Course to Meeting the Professional Component

The course contributes to building the fundamental basic concepts, applications, and design of Reinforced concrete members.

Relationship to Program Outcomes (%)

A	B	C	D	E	F	G	H	I	J	K	L
40				60							

Relationship to Civil Engineering Program Objectives

PEO1	PEO2	PEO3	PEO 4
√	√	√	√