

Course Code: ENS 201 (IAI EGR 942)

Course Title: Engineering Mechanics I (Statics)

Department: Natural Sciences

Effective Date: Summer 2026

PCS Code: 1.1 - Baccalaureate/Transfer

CIP Code: 14.1101

Repeatability: 0

Credit Hours

Catalog Notation: 2-2-3

Credit Hour Distribution:

Lecture: 2

Lab: 2

Clinical: 0

Total: 3

General Course Information

Catalog Description

Topics include particle statics, general principles and force vectors, rigid body equilibrium, moments of inertia, distributed forces and centroids, analysis of structures, virtual work, and friction.

General Course Objectives

- Demonstrate ability to solve two and three-dimensional force systems by vector and scalar methods.
- Learn to apply principles of forces to problems involving structures and friction.

Minimum Placement Levels

English	Reading	Math
None	None	None

Prerequisites

Credit in PHY 141

Methods of Evaluation

Students will be given homework of textbook-type problems, in-class problem solving, 2-4 in-class exams related to textbook problems, and 1 two-hour cumulative final exam.

Instructional Materials and Additional Supplies

Mastering Engineering with Pearson eText for Engineering Mechanics: Statics, Hibbler, 15th edition.

<https://www.pearson.com/en-us/subject-catalog/p/engineering-mechanics-statics/P200000003369/9780134867281> ISBN 13: 9780134867281

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Particle Statics	1. Break force vectors into components and combine forces into a resultant.	3	3	0
General Principles and Force Vectors	1. Compute moments and couples. 2. Analyze forces, unit vectors, and components in 3-D.	4	4	0
Rigid Body Equilibrium	1. Evaluate systems in force and moment static equilibrium.	3	3	0
Analysis of Structures	1. Determine forces on members in a truss, frame, and pulley.	6	6	0
Friction	1. Apply friction laws to direction, wedges, belts, disks, and inclines.	4	4	0
Distributed Forces and Centroids	1. Determine the centroid of areas.	4	4	0
Moments of Inertia	1. Determine moments of inertia.	3	3	0
Virtual Work	1. Determine forces and moments by virtual work.	3	3	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	30	0