



## EGR 251: Statics

This course considers the effects of forces on two- and three-dimensional systems of particles and rigid bodies in static equilibrium. Students apply engineering concepts of force vectors, moments and friction to solve engineering design problems. The course investigates techniques for analysis of trusses, beams and mechanisms to determine external reactions and internal forces. Prerequisites: PHY 101 or PHY 211, and MTH 172. Three lecture hours per week.

### Course Student Learning Outcomes

1. Define quantities used in, and principles of, static equilibrium analysis. 2. Differentiate between body forces, internal forces, external/applied forces, and reactions as supports. 3. Analyze mechanisms and structures using graphical techniques, summation of forces and moments, the dot product, and the cross product. 4. Analyze mechanisms and structures using static and dynamic friction concepts. 5. Analyze trusses with the Methods of Sections and Joints.

**Credits:** 3

**Program:** Engineering