
SECTION HEADING

ENGR 2214: Statics

Description

Statics includes vector resultants of force systems in two and three dimensions, equilibrium of forces, analysis of forces acting on structural and machine elements, friction, moments of inertia, and virtual work.

Credits

3

Prerequisite

PHYS 2121 and MATH 1122

Corequisite

None

Topics to be Covered

1. Fundamental concepts and principles of mechanics
2. Statics of particles - forces in the plane and in space
3. Force system resultants
4. Equilibrium of rigid bodies
5. Distributed forces -Centroids and centers of gravity -areas, lines and volumes
6. Structural analysis
7. Center of gravity and centroid
8. Friction forces
9. Moments of inertia
10. General method of virtual work

Learning Outcomes

1. Analyze rigid bodies in equilibrium
2. Determine centroids and moments of inertia
3. Design simple structures in equilibrium
4. Analyze structures including frames, machines, and trusses
5. Apply concept of dry friction to rigid bodies

Credit Details

Lecture: 3

Lab: 0

OJT: 0