

NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE

COURSE SYLLABUS

Course Title: Engineering Statics

Course #: EGR 211

The main objective of this course is to develop in the engineering students the ability to analyze any problem in a simple and logical manner and to apply to its solution a few, well understood, basic principles. This course introduces the concepts of engineering based on forces in equilibrium. Topics include concentrated forces, distributed forces, forces due to friction, and inertia as they apply to machines, structures, and systems. Upon completion, students should be able to solve problems which require the ability to analyze systems of forces in static equilibrium.

Prerequisite: C or better in MAT 256, or taking MAT 256 concurrently

Outcomes: At the end of this course, a student should be able to:

1. Draw free body diagrams of objects with applied external forces.
2. Calculate components of forces and solve equation of equilibrium in 2D and 3D.
3. Calculate moments / force couples.
4. Calculate centroids of lines, areas, and volumes.
5. Analyze trusses, frames, and machines by finding the internal forces and reactions.
6. Analyze beams and cables.
7. Calculate moment of inertia.
8. Explain the laws of friction and its application.