



Course Name: MEC-104 Statics

Date Updated: 4/2022

Credit Hours/week: 3 hrs./wk. – 3 cr.

BEGINNING: SPRING 2022

Catalog Description: This course provides an analysis of force systems acting on particles and rigid bodies. Equilibrium in two and three dimensions. Trusses, frames, and machines. Friction, centroids and moment of inertia of areas.

Prerequisite: MAT 110, ENR 119 and ENR 124 or MAT-110 and ENR-132 or MAT-123

Text: MEC 104 Mechanical Engineering, J. Klages, Primis

Supplementary Material: Scientific Calculator

Syllabus:

Topics
Introduction and essentials of trigonometry
Concurrent coplanar force systems
Nonconcurrent coplanar force systems
Equilibrium of coplanar force systems
Trusses
Frames and machines
Friction
Three dimensional force systems

Students are expected to adhere to the policies of the County College of Morris. These can be accessed at: (insert link here)

Statement of Expected Course LEARNING OUTCOMES

- Solve for unknown forces and moments in concurrent and nonconcurrent coplanar static force systems
- Draw free body diagrams
- Determine the magnitude and sense of all forces carried by members of trusses
- Determine the magnitude and sense of all forces and moments carried by members of frames and machines
- Determine the effects of dry friction on the static equilibrium of movable objects
- Specify the force components of three dimensional force systems

Statement of Relation to Curriculum(s):

A required course in Mechanical Engineering Technology, in particular, preparation for Strength of Materials, MEC-141.