J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: EGR 140 **Credits:** 3

Course Title: Engineering Mechanics — Statics

Course Description: Introduces mechanics of vector forces and space, scalar mass and time, including SI and US customary units. Teaches equilibrium, free-body diagrams, moments, couples, distributed forces, centroids, moments of inertia, analysis of two-force and multi-force members, and friction and internal forces. Prerequisite: MTH 263. Lecture 3 hours, Total 3 hours.

General Course Purpose: Engineering Mechanics course for AS Engineering majors

Course Prerequisites and Co-requisite:
Prerequisite: MTH 263

Student Learning Outcomes:
Upon completing the course, the student will be able to
a. Solve for unknown forces in a variety of situations;
b. Know how to solve for centroid and the moment of inertia;
c. Solve for shear and bending forces; and
d. Solve problems involving friction.

Major Topics to Be Included:
a. Vector
b. Components
c. Equilibrium
d. Rigid bodies
e. 3-D forces
f. Vector products
g. Dot products
h. Couples
i. 3-D equilibrium
j. Centroid
k. Distributed loads
l. Submerged surfaces
m. Trusses
n. Frames and machines
o. Shear and bending
p. Friction
q. Moment of inertia

Date Created/Updated (Month, Day, Year): January 25, 2019