NVCC COLLEGE-WIDE COURSE CONTENT SUMMARY

MEC 210 - MACHINE DESIGN (3 CR.)

COURSE DESCRIPTION

Studies the design of machine elements for producing and transmitting power. Includes additional material in statics, strength of materials dynamics, engineering materials and industrial processes, including lubrication and friction. Emphasizes graphical kinematics of mechanisms and discusses analytical design of machine components. Requires preparation of weekly laboratory reports. Requires preparation of weekly laboratory reports. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

GENERAL COURSE PURPOSE

To provide the student with a knowledge of techniques and concepts of mechanical parts and systems including their design and function.

ENTRY LEVEL COMPETENCIES

Knowledge of statics and strength of materials. Prerequisite: EGR 130.

COURSE OBJECTIVES

Upon completion of the course, the student will be able to understand, analyze, and design basic mechanical system elements.

MAJOR TOPICS TO BE INCLUDED

A. Principles of machine design
B. Force and motion
C. Design stress
D. Dynamic loading
E. Power and power transmission
F. Shaft design
G. Design of keys, key ways, pulleys, and belts
H. Gear and friction wheels
I. Couplings
J. Bearing, joints and clutches
K. Friction and lubrication