

North Hennepin Community College

ENGR 2303: Dynamics

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 0

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites:

This course requires both of these prerequisites

ENGR 2301 - Statics

MATH 1222 - Calculus II (Minimum grade: 1.67 GPA Equivalent)

Corequisites: None

MnTC Goals: None

This course is designed for people interested in mechanical, civil, industrial, and aerospace engineering. The topics include: particle kinematics, particle kinetics, Newton's Second Law, rotation of rigid bodies, and energy momentum methods.

Prerequisite: Math 1222, Physics 1601 and Engr 2301

B. COURSE EFFECTIVE DATES: 08/26/2002 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Academic Content: Topics covered: particle kinematics, particle kinetics, Newton's Second Law, rotation of rigid bodies, energy and momentum methods.

D. LEARNING OUTCOMES (General)

1. Course Outcomes: An understanding of the principles of dynamics and an ability to solve problems involving these principles.
2. Describe the motion of an object or of a system of objects in terms of various kinds of velocities and accelerations. (ELO 1, 2a)
3. Identify the forces and torques acting on a system of moving objects. (ELO 1, 2a)
4. Analyze particle and rigid-body motion using Newton's 2nd law (ELO 2a, d; 4a,e)
5. Analyze particle and rigid-body motion using work and energy methods (ELO 2a, d; 4a, d, e)
6. Analyze particle and rigid-body motion using impulse and momentum methods (ELO 2a, d; 4a, d, e)
7. Analyze collisions/impacts between particles and/or rigid bodies. (ELO 2a, d; 4a, d, e)

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted