Course Name: ENR-224 Engineering Mechanics II (Dynamics) Date Updated: 4/2022

Credit Hours/week: 3 hrs./wk. – 3 cr. BEGINNING: SPRING 2022

Catalog Description: This is a calculus based course in dynamics. Kinematics, kinetics of particles and rigid bodies, Newton's laws, work, energy, impulse and momentum are covered. Practical engineering problems utilizing these physical principles will be the focus of the course.

Prerequisite: ENG-223 – Engineering Mechanics I (Statics)

Text: Vector Mechanics for Engineers, Edition 11e, by Beer and Johnson, McGraw Hill

Supplementary Material: None

Syllabus:

Topics
Kinematics of Particles
Kinetics of Particles
Kinetics of Particles (Energy & Momentum)
Kinematics of Rigid Bodies
Kinetics of Rigid Bodies in a Plane

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

The goal is to develop proficiency analyzing kinematic motion and conducting dynamic analyses:

- Determine the kinematic motion of particle and groups of particles along rectilinear and curvalinear paths
- Determine the kinetic motion of particles subject to applied forces and moments
- Determine the kinetic motion of particles using energy and momentum methods
- Determine the kinematic motion of rigid bodies, including the use of the method of absolute and relative velocities and the method of instant centers
- Determine the kinetic plane motion of rigid bodies

Statement of Relation to Curriculum(s):

- The completion of a two-semester course which is in the core of the engineering curriculum