Common Course Outline
ENSC 211
Mechanics II (Dynamics)
3 Credits

Community College of Baltimore County

Description

ENSC 211 - Mechanics II (Dynamics) - Covers kinematics and kinetics of particles, energy and momentum methods and kinematics of plane motion of rigid bodies.

3 Credits

Prerequisite: ENSC 111; or consent of instructor.

Overall Course Objectives

Upon completion of this course, the student will be able to:

1. utilize the terminology of Engineering Dynamics.
2. understand the fundamental concepts and units of Engineering Dynamics.
3. understand the different types of forces.
4. utilize the Free Body Diagram.
5. perform all of the Vector Products.
6. utilize the rules for Vector manipulation.
7. analyze the motion of particles in terms of displacement, velocity, and acceleration in different coordinate systems.
8. analyze the motion of particles based on Newton's Second Law.
9. analyze the motion of particles by energy methods.
10. analyze the motion of particles by Impulse and Momentum methods.
11. analyze the planar rigid body motion by all of the above methods.

Major Topics

I. Kinematics of a particle (the relationship between displacement, velocity, acceleration, and time)
II. Kinetics of a particle (the relationship of particle mass and the forces acting on it to the particle kinematics)
III. Kinetics of a particle by Work and Energy method
IV. Kinetics of a particle by Impulse and Momentum method
V. Planar kinematics and kinetics of rigid bodies
VI. Planar kinetics of a rigid body by Work and Energy method
VII. Planar kinetics of rigid body by Impulse and Momentum method

Course Requirements

Grading/Exams - Grading procedures will be determined by the individual faculty member but will be based on exams.

Revised: June 11, 2019