

ENGINEERING MECHANICS (EM)

EM 222 Statics 3 Hours

A study of forces on bodies at rest. Vector algebra: study of force systems, equivalent force systems, distributed forces, internal forces, principles of equilibrium, application to trusses, frames and beams, friction. This course is delivered by Western Kentucky University.

Prerequisite(s): MATH 137 (may be taken concurrently) and PHYS 255 (may be taken concurrently)

Equivalent(s): EM 221

Recent Term(s) Offered: winter 2020; spring 2020; summer 2020; fall 2020; winter 2021; spring 2021; fall 2021; winter 2022; spring 2022; fall 2022

EM 303 Mechanics of Deformable Solids 3 Hours

Study of fundamental principles and physical laws governing the response of mechanical components to external forces. Concepts of stress, equivalent systems, rigid body equilibrium, stress-strain and deformation, torsion, internal forces and bending moments, shear and bending moment diagrams, flexural loading, Mohr's circle and pressure vessels are presented. This course is delivered by Western Kentucky University.

Prerequisite(s): (MATH 137 with a minimum grade of C or MATH 227 with a minimum grade of C) and EM 222 with a minimum grade of C and PHYS 255 with a minimum grade of C

Equivalent(s): EM 302

Recent Term(s) Offered: spring 2020; fall 2020; spring 2021; summer 2021; fall 2021; spring 2022; summer 2022; fall 2022

EM 313 Dynamics 3 Hours

Study of the motion of bodies. Kinematics: Cartesian and polar coordinate systems; normal and tangential components; translating and rotating reference frames. Kinetics of particles and rigid bodies: laws of motion; work and energy; impulse and momentum.

Prerequisite(s): EM 222 with a minimum grade of C and MATH 331 (may be taken concurrently) and PHYS 255 with a minimum grade of C

Recent Term(s) Offered: spring 2020; fall 2020; spring 2021; fall 2021; spring 2022; fall 2022