

## ENGR2210 - Engineering Mechanics I

Credits:	3 (3/0/0)
Description:	This course provides an introduction to the principles of mechanics, including equilibrium of particles and rigid bodies; distributed forces, centroids and centers of gravity; moments of inertia of areas; analysis of simple structures and machines; and various types of friction.
Prerequisites:	<ul style="list-style-type: none"> <li>• MATH1134</li> </ul>
Corequisites:	
Pre/Corequisites*:	
Competencies:	<ol style="list-style-type: none"> <li>1. Perform vector analysis (addition, and resolution into components) of forces in 2 and 3 dimensions, and find the resultant of forces acting on a particle.</li> <li>2. Understand equilibrium of a particle in 2 and 3 dimensions, and be able to solve for unknown forces.</li> <li>3. Find moments of a force about a point and about a line.</li> <li>4. Draw free body diagrams of particles and rigid bodies, and solve rigid body problems for equilibrium in 2 and 3 dimensions.</li> <li>5. Utilize calculus to determine geometric properties such as centers of gravity, centroids, and moments of inertia of areas.</li> <li>6. Determine reactions and internal forces on members of structures such as trusses, frames or machines.</li> <li>7. Utilize calculus to determine internal forces and moments in beams.</li> <li>8. Apply laws of friction to solve problems involving dry friction, such as sliding blocks and wedges.</li> </ol>
MnTC goal areas:	None

\*Can be taking as a Prerequisite or Corequisite.