

SLO Presentation

ENGR

Date: 09/11/2019

SCIENCE, ENGINEERING & MATH
ENGR
PSLO No PSLOs
CSLO
ENGR110 - Introduction to Engineering <ul style="list-style-type: none">• Describe the role of engineers in society and classify the different engineering branches, the functions of engineers, and industries in which they work• Identify and describe academic pathways to four-year degrees• Explain engineering ethical principles and standards• Demonstrate knowledge of effective practices for writing technical engineering documents and making oral presentations• Analyze engineering problems using the engineering design process• Demonstrate teamwork skills in working on an engineering design team
ENGR112 - Engineering Graphics <ul style="list-style-type: none">• Apply rules of orthographic projection to create multiview drawings• Apply standards of dimensioning and tolerancing to engineering drawings• Apply the engineering design process to a design project• Create auxiliary and section views of an object following correct conventions• Create pictorials from orthographic views• Use CAD software to create:<ol style="list-style-type: none">1. 2D engineering drawings, including working drawings and assembly drawings2. 3D models and assemblies
ENGR235 - Statics <ul style="list-style-type: none">• Analyze two- and three-dimensional force systems on rigid bodies in static equilibrium• Calculate internal forces in members and create shear and bending moment diagrams for beams• Determine the forces that act on rigid bodies including external forces, weight, normal and distributed loads, friction and reactions at supports• Effectively communicate legible problem solutions to be understood by engineers in and out of their specific disciplines• Perform vector analysis methods addressing forces acting on rigid bodies, trusses, frames, and machines
ENGR240 - Dynamics <ol style="list-style-type: none">1. To develop an understanding of the fundamentals and principles engineering mechanics: statics and dynamics of particles, and rigid bodies in two and three dimensions including: kinematics and kinetics of particles and rigid bodies in 2D and 3D motion, Rotations, translations, oscillations.2. Learn to solve equilibrium of rigid bodies including the calculations of moment of force, inertia moments of solid bodies, and basic structural analysis, and be able to determine the requirement for the equilibrium of particles and solid bodies.3. To develop the ability to apply Newtonian mechanics to model and predict the responses of simple dynamical system (particle and rigid body) subjected to applied forces.4. To learn the basics of oscillations and different possibilities for vibrations of mechanical systems.5. Define basic kinematic quantities of rectilinear and curvilinear motion of particle such as: position, displacement, velocity and acceleration,6. Describe and understand plane kinematics of rigid bodies,7. Explain basic terms in kinetics of particles: Newton's second law, work and kinetic energy, impulse and momentum, gravitational and elastic potential energy8. Discuss direct and oblique central impact

- 9. Determine moments and products of inertia of a mass,
- 10. Explain plane kinetics of rigid bodies
- 11. Analyze and comprehend free undamped and damped vibrations

ENGR245 - Strength of Materials

- Compute stress, strain and deformation in an axial member
- Compute direct shear stresses
- Compute bending stresses
- Compute torsional shear stresses
- Compute the state of stress at a point in a loaded beam
- Determine stress concentration factors
- Determine the stress on a plane given the state of stress
- Compute column critical load and stress
- Compute the deflection of beams and shafts
- Utilize modern computational tools in analysis and solutions
- Prepare well documented problem solutions
- Ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments, as well as to analyze and interpret data
- An ability to design a system, component, or process to meet desired needs
- An ability to function on multidisciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An ability to communicate effectively