

MET 3101: Fluid Mechanics Principles and Applications

4 Credit Hours

Prerequisite: MET 2124 or ENGR 2214

The objective of this course is to present fluid mechanics concepts and their applications to practical problems. The main areas are fluid properties, fluid statics, flow in conduits, pump selection and operation, fluid power systems, momentum transfer, external flow, and open channel flow. Principles will be related to industrial applications. Hands-on laboratory exercises will demonstrate principles and applications.

MET 3124: Strength of Materials with Applications

3 Credit Hours

Prerequisite: ENGR 2214 or MET 2124

Concurrent: MET 3124L

A study of stress and strain of deformable bodies in tension, compression, bending, and torsion. Topics include: axial stress and strain, thermal stress and strain, statically indeterminate systems, torsional stress and strain, power transmission in shafts, bending stresses in beams, beam deflections, combined stresses, elastic buckling in columns, and finite element analysis methods.

Notes: Not equivalent to ENGR 3131

MET 3124L: Strength of Materials Lab

1 Credit Hours

Prerequisite: ENGR 2214 or MET 2124

Concurrent: MET 3124

The application of laboratory testing and analysis of results to determine the mechanical behavior of materials under load.

MET 3126: Engineering Dynamics with Applications

3 Credit Hours

Prerequisite: (ENGR 2214 or MET 2124) and MATH 2202

A study of the mechanics of particles and rigid bodies, considering practical examples. Topics covered include: kinematics and kinetics of particles; work and kinetic energy; impulse and momentum; rigid body motions; relative motion and moving coordinate systems. Machinery applications are considered for majority of course materials.