DEPARTMENT OF MECHANICAL ENGINEERING

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

COURSE DESCRIPTION

FLUID MECHANICS

ME 251 Fluid Mechanics I, (3, 0, 3)

Fluid and its properties. Fluid Statics. Kinematics and Dynamics of fluid flow. Introduction to steady incompressible flow in pipes, ducts and open channels.

ME 352 Fluid Mechanics II, (3, 0, 3)

Similarity and Dimensional analysis. Theory of hydraulic machinery: turbines. Pumps, fans and compressors. Application of the energy. Momentum and moment of momentum equations to practical fluid flow problems.

ME 454 Pneumatics and Hydraulics, (3, 1, 3)

Components of hydraulic and pneumatic control systems. Design, maintenance and safety of hydraulic and pneumatic circuits and systems.

ME 451 Fluid Mechanics III, (3, 1, 3)

Ideal fluid flow: Velocity potential and stream function. Flow over immersed bodies: Boundary layer growth and separation. Drag and lift on two- and three- dimensional bodies. One-dimensional compressible flow of a perfect gas in a duct. Plane and oblique shock waves.

ME 452 Turbo machinery, (3, 1, 3)

Theory of Gas Turbines and Compressors. Impulse and Reaction machines. Blade theory and velocity triangles. Design of: Turbines, compressors, fans, pumps and their characteristics.