1. ME 3332, Fluid Mechanics

2. 3 credits, 4 contact hours

3. Instructors: M. Anderson, C. Dutcher, C. Hogan, J. Hong, L. Shen, V. Srinivasan, P. Strykowski, S. Yang


5. Specific course information:
   a. Catalog description: Mass, momentum and energy conservation principles. Fluid statics, Bernoulli equation, integral and differential control volume analysis, dimensional analysis, internal and external inviscid and viscous flow, boundary layers.
   b. Prerequisites: MATH 2243 or 2373, ME 3331.
   c. Required course.

6. Course outcomes (related ABET student outcomes indicated in square brackets):
   a. An ability to describe the basic principals of fluid mechanics. [1]
   b. An ability to perform mass, energy, and linear momentum balances for open and closed control volumes (both macroscopic and differential). [1]
   c. An ability to apply laws and relations of fluid mechanics to analyze systems involving viscous and inviscid internal and external flows. [1]
   d. A knowledge of basic fluidic devices including one or more of the following: pipes, manometers, pumps, flow devices (e.g. Venturi), pitot tubes, etc. [1]

7. Course topics:
   a. Fluid properties.
   b. Fluid statics.
   c. Ideal fluids, Bernoulli equation.
   d. Reynolds transport theorem.
   e. Control volume analysis.
   f. Introduction to differential analysis.
   g. Dimensional analysis.
   h. Internal & external viscous flows.