

AME 530A: Incompressible Fluids
Fall 2014

Prof. P.K. Newton

Office: 221 Rapp Eng. Bldg.

Tel: 740-7782

email: newton@usc.edu

Office hours: MW 12-2

TA: TBD

TA Office Hours TBD

Grader: TBD

Midterm exam: TBD

Final exam: TBD

Class time: MW 2:00-3:20

OHE 100D

The course will introduce students to incompressible fluid flow based on the development of exact and approximate solutions to the Euler and Navier-Stokes equations. Lectures, films, and homeworks will provide students with a comprehensive treatment of the quantitative aspects of the subject and give them physical intuition on the behavior of a large variety of fluid flows.

Course Outline

Part I: Introduction and background

Part II: Ideal (inviscid) flow

Part III: Viscous flow

Part IV: Vorticity

Part V: Boundary layers

Book: *Incompressible Flow*, R.L. Panton, Wiley 3rd Edition

Grading: Homework 50%; Midterm 20%; Final 30%