

CE 596B – Spring 2008

Fluid Mechanics in Natural Environments

Instructor: Dr. Jie Yu, jie_yu@ncsu.edu
Civil, Construction and Environmental Engineering
Class: W F 1:30 – 2:45, Mann Hall 412A

Course Description:

Applications of fluid mechanics to natural flows of water and air in environmentally relevant systems. The course begins with a review of fundamental principles of fluids (i.e. conservation of mass, momentum and energy). These physical laws are then utilized to study processes that naturally occur in air and water, such as boundary layers, waves, turbulence, mixing, convection, stratification and plumes. Finally, the understanding of these processes is applied to specific natural fluid systems such as rivers and other open channel flows, wetlands, lakes and reservoirs, estuaries and the coastal ocean, smokestack plumes and urban airsheds.

Prereq: Intro fluid mechanics/hydraulics or consent of instructor.



Why do we
need to worry
about motion
in
air and water?

