

Introductory Fluid Mechanics

CENG 101A – FALL 2012

(D. Miller, Dept. MAE)

This course is intended as an introduction to fluid mechanics for chemical engineers and bioengineers. Course topics: hydrostatics; Bernoulli equations; macroscopic control volume momentum and energy equations; inviscid potential flow; Navier-Stokes equations for viscous flows; flow in pipes; external boundary layer flows and drag . The 5th edition Wiley text "Fundamentals of Momentum, Heat, and Mass Transfer" by Welty, Wicks, Wilson, and Rorrerr is required; we will cover selected topics from chapters 1-13. The required text is available in both bound and loose leaf editions in the book store, and either is acceptable. Note that this text will also be used in the continuing sequence courses CENG 101 B and C. Course pre-requisites are Physics 2A,B,C ; Math 20D (differential equations) ; and Math 20E (vector calculus).

Lectures begin on Thursday, September 27th. Lectures will be held in 101CH on Tuesdays and Thursdays at 8 – 9:20am and also on Fridays at 11-11:50 am.

There will be nine weekly homework assignments. There will be four in class mid-term exams, to be held on the following Thursdays: 10/11 ; 11/1 ; 11/15 ; and 11/29 .

The final exam is currently scheduled for Tuesday, December 11, at 8 – 11am.

When instruction starts, course information, assignments, homework solutions, grades, etc, will be posted on Ted at <http://ted.ucsd.edu>, available to enrolled students , which uses your UCSD email user name and password.