UNIVERSITY OF CALIFORNIA
Department of Mechanical Engineering
Professor S. Morris, 6115 Etcheverry
morris@berkeley.edu

ME106–FLUID MECHANICS
Spring 2018
Class: 3 LeConte MWF 10:00–11

Text (optional). Munson et al. *Fundamentals of Fluid Mech.*, any recent ed.,Wiley.

Course Reader. From 'Copycentral', 1971 Shattuck Avenue.

Grading. Quizzes (your best 3 out of the 6) 10%; tests 1 and 2, 20% each; final 50%

Tests and quizzes. Closed book. Require symbolic answers. Homework is neither collected nor graded, but tests cover only topics on which homework has been assigned. (The questions are different.) Sample tests are at the end of the reader.

Week	Monday	Topic	Text
1	1/15	Euler's equation of motion Viscosity and Reynolds number	Ch. 1
2	1/22	Hydrostatics	Ch. 2
3	1/29	Flow kinematics Bernoulli equation (incompressible flow)	Ch. 4.1–4.3 Ch. 3
4	2/5	Transport theorem. Mass balances Momentum balances	Ch. 4.4, 5 Ch. 5
5	2/12	Momentum & energy balances	Ch. 5
6	2/19	Compressibility: sound speed & Mach cone	Ch. 11.1–11.3
	2/19	**Holiday**	
	2/21	**1st TEST (Weds.)**	**CLOSED BOOK**
7	2/26	Bernoulli equation (compressible flow) Converging–diverging nozzles	Ch. 3.8.1 Ch. 11.4
8	3/5	Normal shock waves	Ch. 11.5.3
9	3/12	Dimensional analysis Navier–Stokes equations for viscous flow	Ch. 7 Ch. 6.2, 6.8
10	3/19	Internal flow Poiseuille flow	Ch. 8.1 Ch. 8.2
	3/26	(**Spring break**)	
11	4/2	Velocity profile in turbulent pipe flow	Ch. 8.3.3
	4/4	**2nd TEST (Weds.)**	**CLOSED BOOK**
12	4/9	Friction factor External flow	Ch. 8.4 Ch. 9.1, 9.3
13	4/16	Boundary layer on a flat plate	Ch. 9.2
14	4/23	Boundary layer separation	Ch. 9.2
15	4/30	Reading week	

FINAL TEST (closed book): Tues. 2018.05.08, 3-6pm
QUIZZES (closed book): every 2nd Friday, excepting week 6.