

UNIVERSITY OF CALIFORNIA
Mechanical Engineering
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ME260a–FLUID MECHANICS
Fall 2015

Recommended: Guyon E. et al. *Physical Hydrodynamics*, Oxford (2001)

Grading: Mid-term 40%, final 60% (both closed-book). Test problems based on the problem sets.

Week	Date	Topic
1	8/27 (Th.)	Stress tensor. Cauchy equation Mass conservation
2	9/01 (Tu.)	Kinematics of deformation Constitutive equation
3	9/08	Energy equation Boundary conditions
4	9/15	Conditions for isochoric flow Reynolds number similarity Solution set 1 posted
5	9/22	Theorems for inviscid flow Vorticity theorems
6	9/29	Vorticity equation Rayleigh impulsive wall Solution set 2 posted
7	10/06	Symmetry Converging channel
8	10/13 10/15	Diverging channel Midterm test (closed-book)
9	10/20	Spinning disc
10	10/27	Boundary layer theory Falkner–Skan solutions Solution set 3 posted
11	11/03	Impulsively-started cylinder
12	11/10	Spin-up
13	11/17	Gas dynamic boundary layers
14	11/24 11/28	American Physical Society meeting: no class Thanksgiving
15	12/1	Gas dynamic boundary layers Solution set 4 posted
Final test (closed book): Friday 2015.12.18, 8–11am		
