UNIVERSITY OF CALIFORNIA
Department of Mechanical Engineering
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ME167–Microscale Fluid Flow
Spring 2015

Ref. (not required). Probstein, R.F. 2003 *Physicochemical hydrodynamics*, Wiley.
Grading. Mid–term 25%; quizzes (Th., Even weeks) 25%; final 50%. Homework problems: assigned, discussed, not graded.

Week	Date (Mon)	Topic
1	1/19	Equations of motion Parallel flow
2	1/26	Lubrication theory Compressibility and lubrication
3	2/02	Navier slip condition
4	2/09	Capillarity
5	2/16	Thin film flow
6	2/23	Stokes flow
7	3/02	Propulsion at low Reynolds number Electrohydrodynamics
8	3/09	Electrohydrodynamics
9	3/16 3/19 3/23	Electrohydrodynamics **Mid–term test (CLOSED BOOK)** (**Spring break)**
10	3/30	Brownian motion and diffusion
11	4/06	Marangoni flow in evaporating drops Shear–assisted (Taylor) dispersion
12	4/13	Shear–assisted (Taylor) dispersion Adsorption and chromatography
13	4/20	Adsorption and chromatography Low Reynolds number chaos
14	4/27	Low Reynolds number chaos: practical mixers
15	5/01	Review

Final test (CLOSED BOOK): Th 2015.05.14, 3–6pm