

Chemical Engineering 150A
TRANSPORT PROCESSES
Fall Semester 2019

Instructor:

C. J. Radke (101E Gilman, radke@berkeley.edu)
Office Hours: Tues 2-3 p

Teaching Assistant:

Amaresh Sahu (amaresh.sahu@berkeley.edu)
Office Hour: Mon 12-1 p, 100F Chem Lib; Mon 4-5 p, 109 Gilman

Additional consultation with either the instructor or the teaching assistant is available by individual appointment.

Objective:

To introduce the basic concepts of fluid mechanics and heat transfer necessary for solution of engineering problems.

Text:

Required:

Welty, Rorrer, and Foster, "Fundamentals of Heat, Mass, and Momentum Transfer," 6th ed., John Wiley (2015).

Recommended:

Bird, Stewart, and Lightfoot, "Transport Phenomena," 2nd ed., John Wiley, NY (2002).

Denn, "Process Fluid Mechanics," Prentice-Hall, NJ (1980).

White, "Fluid Mechanics," 2nd ed., McGraw-Hill, NY (1986).

Middleman, "An Introduction to Fluid Dynamics," Wiley, NY (1998).

Description:

CBE 150A introduces fluid mechanics and heat transfer: two processes that together with mass transfer (CBE 150B) comprise the field of transport phenomena. Since the movement of momentum, heat, and mass is indigenous to all chemical processing, this course is basic to what follows in the curriculum. Text coverage is Chapters 1 – 22, excluding Chapter 10. However, lecture material will not necessarily follow the text either in order or in style. Students are expected to have a working knowledge of simple ordinary differential equations.

Course Grade:

The course grade will be determined by the following:

Homework:	15% (lowest 2 scores will be dropped if course evaluations submitted)
Midterm Exams (2):	25 % each (ca. October 02 and November 06)
Final:	35%

Homework:

Homework will be assigned at the beginning of each week and will be due on GradeScope (code is MWN44Z) by 9 a on Wednesday one week later.

No late homework will be accepted. Assignments, solutions, and handouts will be posted at the class bcourse website.

Examinations:

There will be no regrades of examinations. Use of electronic devices with access to internet is not permitted.