

CHEN 5210 – Transport Phenomena (Spring 2021)
 Tue/Thu – 10:05 - 11:20 AM
 Zoom link: <https://cuboulder.zoom.us/j/94768161573>
 Passcode: TRANSPORT

Schedule

*** Problem Set due before the start of the class**

Lecture(s)	Date	Topic	Chap. in Deen
1 to 3	1/14 1/19 1/21	Diffusive fluxes Material properties Conservation equations Conservation of mass Conservation of energy Interfaces	1 and 2
4 to 7	1/26* 1/28 2/02 2/04	One-dimensional examples Order of magnitude analysis Similarity method Regular perturbation analysis	3 and 4
8 to 9	2/09* 2/11	Finite Fourier Transform (FFT) method for one and two-dimensional problems	5
10	2/16	In-class exam [syllabus: Lec 1 to 9]	
11 to 12	2/18 2/23	Fluid Mechanics Conservation of momentum Interfaces	6
13 to 17	2/25 3/02* 3/04 3/09 3/11	Unidirectional flow Steady flow with pressure gradient and moving surfaces Time-dependent flow Nearly Unidirectional flow Creeping flow	7 and 8
18	3/16*	General features of high Re flow	9
19	3/18	In-class exam [syllabus: Lec 11 to 18]	
20	3/23	Irrotational flow Boundary layers	9 (pause week, no HW assigned)
21 to 24	3/30 4/1 4/6 4/8	Heat and Mass Transfer with Convection Confined flows Unconfined flows	10 and 11
25 to 26	4/13* 4/15	Buoyancy driven flow Confined flow Unconfined flow	12
27 to 30	4/20 4/22 4/27* 4/29	Transport of ionic species Electrical double layers Electrokinetic phenomena Course wrap up	15
Finals	TBA	[syllabus: Lec 20 to 30]	

Problem sets will be assigned at least 10 days in advance. Due dates for problem sets are also listed below:

PSet-1 (1/26)

PSet-2 (2/09)

Pset-2a not for grade, only to assist with exam prep

PSet-3 (3/02)

PSet-4 (3/16)

Pset-4a not for grade, only to assist with exam prep

PSet-5 (4/13)

PSet-6 (4/27)

Pset-6a not for grade, only to assist with exam prep