

ChNE 499-037 Materials for Chemical Engineers

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Text: B. S. Mitchell, *An Introduction to Materials Engineering and Science for Chemical and Materials Engineers*, John Wiley & Sons (2004)

Class	Date	Chapter	Topic	Instructor
1	Jan. 16		introduction	REL, JGC, CJB
<i>Structure</i>				
2	Jan. 18	1.1	metals	REL
3	Jan. 23	1.3	polymers	JGC
4	Jan. 25		nanomaterials	CJB
5	Jan. 30	1.2	ceramics & glasses	REL
<i>Thermodynamics</i>				
6	Feb. 1	2.1	metals	JGC
7	Feb. 6	2.3	polymers	JGC
8	Feb. 8	2.2.2	interfacial thermo	CJB
9	Feb. 13		review	REL, JGC, CJB
10	Feb. 15		EXAM	TA
<i>Kinetics</i>				
11	Feb. 20	3.1, 3.2	metals & ceramics	REL
12	Feb. 22	3.3	polymers	JGC
13	Feb. 27		nanomaterial catalysis	CJB

Transport Properties

14 Mar. 1 4.1.3 viscosity of polymers JGC

Mechanics of Materials

15 Mar. 6 5.1.1 stress/strain, elasticity REL

16 Mar. 8 5.1.2 ductility REL

Mar. 11-18 SPRING BREAK

17 Mar. 20 5.1.4 fatigue, fracture, creep REL

18 Mar. 22 rubber elasticity JGC

19 Mar. 27 review REL, JGC, CJB

20 Mar. 29 EXAM TA

21 Apr. 3 5.3 viscoelasticity JGC

Nanoprocessing & Properties

22 Apr. 5 biomimetics CJB

23 Apr. 10 nano processing CJB

24 Apr. 12 nano properties CJB

Electrical & Thermal Properties

25 Apr. 17 6 ceramics REL

Processing of Materials

26 Apr. 19 7.1 metals & alloys REL

27 Apr. 24 7.2 ceramics REL

28 Apr. 26 7.3 polymers JGC

29 May 1 sol/gel materials CJB

30 May 3 review REL, JGC, CJB

31 May 5-12

FINAL

TA