

January

POLYMER MATERIALS ENGINEERING

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
			1st Day; CH 1 Introduction, definition, Polymer types, Organic functional groups		Ch 2 Chemical Bonds, Nomenclature, Structural Isomers	
16	17	18	19	20	21	22
	MLK Day No class		Ch 2 Examples of Condensation and Free Radical Polymers		Ch 2 / 3 Polymer Chain Lengths Stereoisomers	
23	24	25	26	27	28	29
	Ch 4 Polymer Morphology		Ch 5 Molecular Weight Definition, Mw, Mn, Polydispersity Index; MW Determination Techniques: overview HW 1 due		CB out of town No Class	
30	31					
	Ch 5 MW Determination Techniques					

2011

February

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
		1	2 Ch 5: Molecular Weight Distributions; gel permeation chromatography	3	4 Ch 5/6 MW discussion; Thermal Transitions (T _g) in Polymers; Crystallinity, optics	5
6	7 Ch 6: Melting point and glass transitions	8	9 Ch 6: Liquid Crystal Polymers HW 2 due	10	11 Ch 7: Polymer Solubility; Interaction Parameter Polymer Mini-Pres. Topic/Group Selection	12
13	14 Ch 8: Condensation Polymerization	15	16 Ch 8: chain length and gelation in condensation polymerization	17	18 Ch 9: Free Radical Polymerization: mechanism	19
20	21 Ch 9: Free Radical Polymerization: kinetics Polymer mini-pres/fact sheets due by e-mail @ 5:00 pm	22	23 Polymer Fact Sheets: #1-9	24	25 Polymer Fact Sheets #10-18	26
27	28 Ch 9: Free Radical Polymerization: Initiator Types, Autoacceleration					

2011

March

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
		1	2 Ch 10 & 11: A survey of advanced Polymerization Techniques; Copolymerization	3	4 Ch 12 Polymerization Practice: Bulk, Solution and Emulsion Polymerization, reactor types HW 3 due	5
6	7 Review/Catch-up	8	9 EXAM 1: Ch 1-12	10	11 Ch 13: Rubber Elasticity	12
13	14 SPRING BREAK	15	16 SPRING BREAK	17	18 SPRING BREAK	19
20	21 Ch 14: Rheology: Polymer Flow Viscous behavior of polymers non-Newtonian Fluids	22	23 Ch 14/15: Rheology; creep flow, relaxation; Viscoelasticity Models (Maxwell / Voigt-Kelvin)	24	25 Ch 15: Viscoelasticity Selection of topics for Product Profiles (412) or Research Review (512/H)	26
27	28 Ch 16: Polymer Mechanical Behavior & Testing	29	30 Ch 16: Elastic Modulus, Polymer Elongation and Failure	31		

2011

April

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
					1 Ch 16: Polymer Mechanics: WLF Equation (Time- temperature superposition) HW 4 due	2
3	4 Ch 19: Polymer Processing Methods - overview	5	6 Ch 19: Polymer Processing Methods	7	8 Honors Day (no class)	9
10	11 Ch 19/20: Polymer Processing Finished Product Types	12	13 Ch 20: Polymer Additives: Fillers, Plasticizers, Stabilizers	14	15 Review/Catch-up HW 5 due	16
17	18 EXAM 2 Ch 13-18	19	20 Current topic in Polymers (TBD): Biomaterials?	21	22 Profiles Papers & Presentations due 8:00 AM Profiles #1-4	23
24	25 Polymer Product Profiles #5-8 Research Papers/Presentations due 5:00 pm	26	27 Polymer Product Profiles #9-10 Research Profile #1-2	28	29 Research Profiles #3-5 Review	30
May 1	2	3 Final Exam 11:30 - 2:00	4	5	6	7

2011