MS/ME 504 Polymers and Soft Materials
MW 2-4pm, Fall 2008

Professor Catherine Klapperich, catherin@bu.edu
Office Hours T 2-4pm, Room 725 ERB
Courseinfo Website MS 504
Textbook: Strobl, Physics of Polymers (2nd ed)
McCrum, Introduction to Polymer Engineering (2nd ed)
Grading: Homework 15%, Participation/Attendance 15%, Midterms 30% each, Final 40%

Lecture	Date	Topic	Reading
1	Wed 3 Sept	Intro to Course/Overview of Polymers	McCrum; Chapters 0 and 1
2	Mon 8 Sept	Polymerization, crosslinking, molecular weight calculations	McCrum Chapter 1
	Wed 10 Sept	NO CLASS	
3	Mon 15 Sept	Crystallinity, glass transition temperature	McCrum; Chapter 2 Strobl; Chapter 5.3
4	Wed 17 Sept	Single chain conformations	Strobl; Chapter 2.1, 2.2, 2.3
5	Mon 22 Sept	Dilute polymer solutions; mixtures	Strobl, 3.2 (through 3.2.2)
6	Wed 24 Sept	Dilute polymer solutions; mixtures	*HW#1 Due*
7	Mon 29 Sept	Block copolymers; nanostructures	Strobl; Chapter 3.3;
8	Wed 1 Oct	Crystalization and Growth	*HW#2 Due* Strobl; Chapter 4 McCrum; Chapter 2
9	Mon 6 Oct	Self assembly	
10	Wed 8 Oct	Mechanical behavior: rubber elasticity	
	Mon 13 Oct	NO CLASS	
11	Tues 14 Oct	Mechanical behavior: viscoelasticity	McCrum; Chapter 3 Strobl; Chapter 7.1
12	Wed 15 Oct	Mechanical behavior: viscoelasticity; Midterm Review	Strobl: 5.1 Mc Crum; Chapter 4
13	Mon 20 Oct	**Midterm**	
14	Wed 22 Oct	Mechanical behavior: dynamic response	Strobl; Chapter 6 McCrum; Chapter 4.3.2
	Mon 27 Oct	Yielding in plastics	
15	Wed 29 Oct	Linear fracture mechanics models	
16	Mon 3 Nov	Linear fracture mechanics models	
17	Wed 5 Nov	NO CLASS	
18	Mon 10 Nov	Elastic plastic fracture	
19	Wed 12 Nov	Hydrogels and networks	
20	Mon 17 Nov	Surface mechanical properties; biodegradation	
21	Wed 19 Nov		
22	Mon 24 Nov		
	Wed 26 Nov	NO CLASS	
23	Mon 1 Dec	Overview of plastics processing	McCrum; Chapters 7 and 8
24	Wed 3 Dec	Conductive Polymers	
25	Mon 8 Dec	Polymers for medical applications	

26	Wed 10 Dec	Final Exam (early)	
	Wed 17 Dec	**Final Exam**	