Chem 466 Polymer Chemistry II

(Kinetics & Thermodynamics of Polymerization; Polymer Characterizations)

Winter Term 06-07; Thursday 6-9 pm; LeBow 135

Department of Chemistry, Drexel University
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Pre-requisite: Minimum 1 physical chemistry or equivalent course (e.g., thermodynamics)

No.	Date	Topic	Reading	Homework
1	1/11/07	Introduction & Background	O:1; A:1	
		Reactions of polymers	O:9; A:7	O:9-1,2,3,4,7,10,11; A:7-3,4
		Kinetics and Thermodynamics of Polymerization		
2	1/18/07	Free-radical polymerization	O:3; A:12	O:3-3,5,7,10,11
3	1/25/07	Free-radical and	O:3; A:12	O:3-12,13,17,19
		ionic polymerization	O:5; A:13	O:5-2,6,9,10,11,12
4	2/1/07	*Class cancelled.* Dr. Wei will serve as a penalist for NIH study section in Washington DC from 1/31/07-2/2/07.		
5	2/8/07	Step polymerizations & Gelation theory	O:2; A:11	O:2-1,2,4,7,10-13
6	**2/15/07**	***Midterm Exam 6:00-9:00 pm; Office hour: 4:30-6:00 pm***		
7	2/22/07	Thermodynamics of polymerization	O:3-9; 2-4,5; A:10	
		Chain copolymerization	O:6; A:12	O:6-1,2,3,4,5,6,7,10
		Molecular Weight and Molecular Weight Distribution		
8	3/1/07	General characterization and spectroscopy of polymers		
		Solubility & membrane osmometry	A:14/Handouts	A:14-1,2,3,4,
9	3/8/07	Vapor-phase osmometry	A:14/Handouts	A:14-5,6,7,9
		Light-scattering	A:14/Handouts	A:14-10,11,12,14,16
10	3/15/07	Solution viscosity	A:15/Handouts	A:15-2,5,6,7,
		Gel-permeation chromatography	A:15/Handouts	A:15-8,9,10,13,14
11	**3/22/07**	*Question/Answer and Term Exam; Office hour: 4:30-6:00 pm*		

Designation	Authors	Title	Publishers
O	G.Odian	*Principles of Polymerization, 4th Ed.*	Wiley, 2004
A	Allcock&Lampe	*Contemporary Polymer Chemistry* 3rd Edition	Prentice Hall, 2003

Notes & Hints: *(1) Homework will be assigned in the class and will be collected two weeks from the data of assignment. The quality of homework will affect the final grade. (2) Your classroom notes will be very important since the lectures may cover the latest developments in polymer chemistry that have not been included in the textbooks.*

Grades (no curving): A+: >95; A: 90-94; A-: 85-89; B+: 81-84; B: 78-80; B-: 75-77; C+: 71-74; C: 68-70; C-: 65-67; D+: 61-64; D: 58-60; D-: 55-57; F: <55 *on the basis of ≥100 total points.*

Makeup Exams: If you miss any exams for any reason, makeup exam can be scheduled and may be significantly tougher. Midterm and final exams count equally (i.e., 50% each) to your term grade. Good homework record will help if you are 1 or 2 points below a better grade.