

<p><b>Organic Special Topics</b></p> <p><b>Polymer Chemistry</b></p> <p><b>Fall 2017</b></p>
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Meetings: MWF, 10-10:50 am  
Location: LaT, Room 200

Instructor: Dr. Douglas A. Klumpp  
Office: Faraday, Room 356  
Office Hours: WED 2:00 to 3:00 pm  
and by appointment.  
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Textbook: **Polymer Chemistry**  
by Malcolm Stevens  
Oxford Press 1999

**Grades:**

The course grade will be assigned based on your point totals from the homework and exams. There will be three worksheets at 50 points each. The exams are worth 100 points and will be given on the dates listed below. The Final will be worth 200 points. Exams cannot be rescheduled. The point total is as follows:

Worksheets (three at 50 points each)	150 Points
Exam 1 (9/22)	100 Points
Exam 2 (10/13)	100 Points
Exam 3 (11/3)	100 Points
Final (12/11, 10 am)	200 Pionts
Total Points	650 Points

## TENATIVE SCHEDULE

Lecture Dates	Chapters	Subject
	<b>1</b>	Introduction: [categories of polymers, definitions, nomenclature]
	<b>2-3-4</b>	Polymer characteristics: [molecular weight, morphology, crystallinity, stereochemistry, cross-linking, polymer analysis]
<b>EXAM 1</b>		
	<b>6-7-8-9</b>	Vinyl polymers: [polymerization chemistry (free radical, ionic, transition metal catalyzed), reactions of the polymers]
<b>EXAM 2</b>		
<b>Spring Break</b>		
	<b>10-11-12-13-14</b>	Nonvinyl polymers: [polymerization chemistry (step-reactions and ring-opening, polyethers, polyesters, polyamides, phenol/urea and formaldehyde polymers)]
<b>EXAM 3</b>		
Recent topics from the polymer literature.		
<b>FINAL EXAM</b>		

## Suggested Homework Problems

Chapter 15 : 27 a-f and h-v; 28 a-b; 29 a-c; 33; 38; 43; 48; 49

Chapter 16: 27 a-p; 28 a-g; 29; a-f; 38 a-b; 40 a-b; 43

Chapter 17: 17.16; 17.17; 17.18; 17.19; 17.20; 17.22; 17.26; 17.27; 17.31

Chapter 18: 18.34a, b, d; 18.35 a, b, c, d, e; 18.38; 18.40; 18.41; 18.44; 18.45