



Polymer Science and Engineering

The University of Toledo
Chemical and Environmental Engineering
CHEE 4800/5800

Instructor:	Maria Coleman	Class Location:	Palmer 2450
Email:	maria.coleman6@utoledo.ed	Class Day/Time:	MW 9:30 am-10:45
Office Hours:	TTh 1-2:00, MW 1-2:00	Lab Location:	NA
Office Location:	NE 2470	Lab Day/Time:	NA
Office Phone:	419-530-8091	Credit Hours:	3
Term:	Fall 2015		

COURSE/CATALOG DESCRIPTION

Polymerization processes, characterization, structure and properties of polymers, processing and engineering applications of the major polymer types.

STUDENT LEARNING OUTCOMES

The students will be able to use terminology specific to polymer industry, can set up and solve problems related to polymer synthesis, processing and characteristics of polymers. Specific topics:

Topics

The following table lists topics to be covered and specific locations in Eberwele Text along with suggested practice problems.

Topic	Chapters	Problems
Introduction to Polymers and Polymerization	1 & 2	1.1; 1.2; 1.5; 1.6 2.3; 2.4;
Condensation and Addition Polymerization	6 & 7	6.1; 6.4; 6.5 a,b 7.3; 7.4; 7.6
Polymer structure and morphology	3	3.3; 3.7; 3.11
Thermal Transitions	4	4.2; 4.3; 4.4; 4.8;
Polymer Modification	5 & 9	5.3; 5.6; 5.8; 5.10; 9.1
Polymer processing	11	11.2; 11.3; 11.4
Mechanical Properties	13	13.1; 13.3;13.7; 13.10

TEACHING STRATEGIES

The course consists of two primary lecture periods in which a new concepts will be introduced and example problems will be solved during course time. Additionally material is supplied to introduce students to operation of polymer processing systems.

PREREQUISITES AND COREQUISITES

NA



REQUIRED TEXTS AND ANCILLARY MATERIALS

Polymer Science and Technology, Robert Ebewele, CRC Press, first edition.

TECHNOLOGY REQUIREMENTS

Software - Excel

UNIVERSITY POLICIES

The University is an equal opportunity educational institution. Please read [The University's Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance.](#))

Academic Accommodations

The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or you believe you have a disability and would like information regarding academic accommodations/adjustments in this course please contact the [Student Disability Services Office.](#)

ACADEMIC POLICIES

The rules of academic dishonesty as described in the University of Toledo General Catalogue will apply to this course. If you are found cheating on an examination, you can be assigned an F in the course. If you are unsure about what constitutes academic dishonesty, consult me.

COURSE EXPECTATIONS

While homework assignments are not mandatory for this course, suggested problems will be assigned and solutions posted on blackboard. All exams missed without prior notice cannot be made up and will be considered a zero. Exceptions will be made for emergencies to be discussed with the professor.

GRADING

Grading:

Exam 1	30 %
Exam 2	30 %
Final exam	40 %

Grade Scale:	90-100	A
	80-89	B
	70-79	C
	60-69	D
	Below 60	F