

Polymer Processing

EMA 4666 Section 04E8

Class Periods: Tue/Thur, period 4, 10:40-11:20 AM
Thur, period 5, 11:35 AM-12:25 PM

Location: Weil 279

Academic Term: SPRING 2017

Instructor:

Anthony B. Brennan

abrennan@mse.ufl.edu

352.392.6281 (O)/352.219.8165 (C)

Office Hours: Tue/Thur, 1:30-2:30 PM, 309 Materials Engineering Building (MAE)

Teaching Assistants:

Please contact through the Canvas website

- Clayton Argenbright, cargenbright@ufl.edu, 305 Materials Engineering Building, TBA

Course Description

Credits: 3

Major processing methods for polymers and polymeric composites as related to the rheological behavior of these systems. Synthesis of polymers via industrial processes.

Course Pre-Requisites / Co-Requisites

Prereq: EMA 3066

Course Objectives

Use their technical knowledge of materials science and engineering to understand the processing of polymers.

Design polymer processes within realistic physical constraints.

Perform and communicate in a professional environment.

Understand the societal impacts of polymer processing.

Materials and Supply Fees

List if applicable

Required Textbooks and Software

Title: Understanding Polymer Processing: Processes and Fundamental Equations

Author: Tim A.Osswald

Publisher: Hanser Gardner

Published: 1998 or 2010

ISBN: 1-56990-262-3 or 978-1-56990-472-5 (Paperback recommended)

Lecture notes provided on Website: CANVAS

Course Schedule

				WEEK 1	Assignment
1	1/5/17	42740	Thur	Introduction	
2	1/5/17	42740	Thur	Structure/Property Relationships	Read: Preface, Ch 1:
				WEEK 2	Homework #1 - Canvas
3	1/10/17	42745	Tue	Structure Property cont'd	Review Chapter 2: "Polymer Mechanical"

4	1/12/17	42747	Thur	cont'd	
5	1/12/17	42747	Thur	cont'd	
				WEEK 3	
6	1/17/17	42752	Tue	cont'd	
7	1/19/17	42754	Thur	Newtonian Fluids	
8	1/19/17	42754	Thur	cont'd	Read Ch 3,
				WEEK 4	Homework #2 – Canvas
9	1/24/17	42759	Tue	cont'd	
10	1/26/17	42761	Thur	cont'd	
11	1/26/17	42761	Thur	Quiz	
				WEEK 5	
12	1/31/17	42766	Tue	cont'd	
13	2/2/17	42768	Thur	Rheology	
14	2/2/17	42768	Thur	cont'd	Homework #3 - Canvas
				WEEK 6	
15	2/7/17	42773	Tue	cont'd	
16	2/9/17	42775	Thur	cont'd	
17	2/9/17	42775	Thur	cont'd	
				WEEK 7	
18	2/14/17	42780	Tue	Transport	Read Ch 4
19	2/16/17	42782	Thur	cont'd	
20	2/16/17	42782	Thur	cont'd	Submit Design Project Topic
				WEEK 8	Ch 5, Homework - Canvas
21	2/21/17	42787	Tue	REVIEW	Homework #4 - Canvas
22	2/23/17	42789	Thur	EXAM 1 - Part 1	
23	2/23/17	42789	Thur	EXAM 1 - Part 2	
				WEEK 9	
24	2/28/17	42794	Tue	Mixing Behavior	
	3/2/17	42796	Thur	Mixing Behavior cont'd	Ch 5, Homework - Canvas
	3/2/17	42796	Thur	Cont'd	
				WEEK 10	
	3/7/17	42801	Tue	Mixing Behavior	
25	3/9/17	42803	Thur	Mixing Behavior cont'd	Ch 5, Homework - Canvas
26	3/9/17	42803	Thur	Cont'd	
				SPRING BREAK	
27	3/14/17	42808	Tue	SPRING BREAK	
28	3/16/17	42810	Thur	SPRING BREAK	
29	3/16/17	42810	Thur	SPRING BREAK	
				WEEK 11	
30	3/21/17	42815	Tue	Cont'd	Read Chapter 7

31	3/23/17	42817	Thur	Film Production	
32	3/23/17	42817	Thur	Cont'd	Homework #6 - Canvas
				WEEK 12	
33	3/28/17	42822	Tue	REVIEW	Submit Design Project Outlin
34	3/30/17	42824	Thur	EXAM II - Part 1	
35	3/30/17	42824	Thur	EXAM II - Part 2	
				WEEK 13	
36	4/4/17	42829	Tue	3D Printing Processes	
37	4/6/17	42831	Thur	Other processes	Read Chapter 8
38	4/6/17	42831	Thur	Cont'd	
				WEEK 14	
39	4/11/17	42836	Tue	Project Presentations	Submit Design Project on C
40	4/13/17	42838	Thur	Project Presentations	
41	4/13/17	42838	Thur	Project Presentations	
				WEEK 15	
43	4/18/17	42840	Tue	REVIEW	
	4/24/17		MON	Group 24C - 12:30 to 2:30 PM	

Attendance Policy, Class Expectations, and Make-Up Policy

State whether attendance is required and if so, how will it be monitored? What are the penalties for absence, tardiness, cell phone policy, laptop policy, etc. What are the arrangements for missed homework, missed quizzes, and missed exams? This statement is required: Excused absences are consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
<i>Homework, Quizzes & Class Participation:</i>	<i>10</i>	<i>10%</i>
<i>Design Project</i>	<i>100</i>	<i>15%</i>
<i>Exam I:</i>	<i>100</i>	<i>25%</i>
<i>Exam II:</i>	<i>100</i>	<i>25%</i>
<i>Exam III</i>	<i>100</i>	<i>25%</i>
TOTAL	<i>100</i>	<i>100%</i>

Grading Policy

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00

70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Campus Resources:

Health and Wellness

U Matter, We Care:

If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.
<https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>.