

EMA 4666 Polymer Processing Syllabus  
SPRING 2014, Section 04E8

1. Catalog Description:

EMA 4666 Polymer Processing  
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.
2. Pre-requisites and Co-requisites:

EMA 4161
3. Course Objectives:
  - a. Use their technical knowledge of materials science and engineering to understand the processing of polymers.
  - b. Design polymer processes within realistic physical constraints.
  - c. Perform and communicate in a professional environment.
  - d. Understand the societal impacts of polymer processing.
4. Contribution of course to meeting the professional component (ABET only):
  - a. This course provides 4 credits towards engineering and includes a significant design component.
5. Relationship of course to program outcomes (ABET only):
  - a. Outcome #4: Ability to apply and integrate knowledge of structure, properties, processing, and performance to solve materials selection and design problems within realistic constraints. (Medium)
    - i. Design project device
    - ii. Design project materials selection
  - b. Outcome #7: Understanding of professional and ethical responsibility. (Med)
    - i. Exam question(s)
    - ii. Design project
  - c. Outcome #8: Ability to communicate effectively in both oral and written form. (Medium)
    - i. Exam questions
    - ii. Design project
      1. Written report
      2. Verbal reports
  - d. Outcome #9: Understanding of the economic impact of engineering solutions. (Low)
    - i. Design project requires cost analysis
  - e. Outcome #13: Ability to use the techniques, skills, and tools needed for practice as a materials engineer. (High)
    - i. Solving problems of materials processing
    - ii. Team participation for problem solving
6. Instructor: Dr. A. B. Brennan
  - a. **Office Location:** 309 Materials Sci. & Eng.
  - b. **Telephone:** 392-6281 (o); 378-6049 (h)
  - c. **Email address:** abrennan@mse.ufl.edu
  - d. **Website:** <http://brennan.mse.ufl.edu/ema4161c.html>
  - e. **Office hours:** Mon Period 3 & Wed Period 2 or by appointment

7. Teaching Assistant: NA
  - a. **Office Location:**
  - b. **Telephone:**
  - c. **Email address:**
  - d. **Website:**
  - e. **Office hours:**
8. Meeting Times:
  - a. Lectures: MWF – Period 3
  - b. Help Sessions: TBD
9. Class/laboratory schedule, i.e., number of sessions each week and duration of each session:
  - a. Lectures: 3 for 50 minutes
  - b. Help Sessions: Variable
10. Meeting Location:
  - a. Lectures: 126 Materials Engineering Building
  - b. Help Sessions: TBD
11. Material and Supply Fees: NA
12. Textbooks and Software Required:
  - a. Title: Understanding Polymer Processing: Processes and Fundamental Equations
  - b. Author: Tim A.Osswald
  - c. Publisher: Hanser Gardner
  - d. Published: 2011
  - e. ISBN: 978-1-56990-472-5
  - f. Lecture notes provided on Website: <http://brennan.mse.ufl.edu/ema4666.html>
13. Recommended Reading: NA
14. Course Outline (Detailed Class Schedule On Website):
  - a. Structure-property behavior
  - b. Mechanical Behavior
  - c. Rheology
  - d. Injection Molding
  - e. Blow Molding
15. Attendance and Expectations:
  - a. Attendance is expected.
  - b. Tardiness is reflected in class participation grade.
  - c. No cell phone use in class.

16. Grading:

<i>Homework, Quizzes &amp; Class Participation:</i>	<i>10%</i>
<i>Design Project</i>	<i>15%</i>
<i>Exam I:</i>	<i>25%</i>
<i>Exam II:</i>	<i>25%</i>
<i>Exam III</i>	<i><u>25%</u></i>
<b><i>TOTAL</i></b>	<b><i>100%</i></b>

17. Grading Scale

≥92	≥88	≥84	≥80	≥76	≥72	≥68	≥65	≥62	≥59	≥56	<56
A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

4.00	3.67	3.50	3.33	3.00	2.67	2.33	2.00	1.67	1.33	1.00	0.67
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“A C- will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

18. Make-up Exam Policy: Consult with Professor, case-by-case basis.
19. Honesty Policy – All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.
20. Accommodation for Students with Disabilities – Students Requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.
21. UF Counseling Services –Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:
  - UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
  - Career Resource Center, Reitz Union, 392-1601, career and job search services.
22. Software Use – All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.