

Spring 2019

CHE 682-102: Polymer Structure and Properties

Kathleen McEnnis

Follow this and additional works at: <https://digitalcommons.njit.edu/cme-syllabi>

Recommended Citation

McEnnis, Kathleen, "CHE 682-102: Polymer Structure and Properties" (2019). *Chemical and Materials Engineering Syllabi*. 34.
<https://digitalcommons.njit.edu/cme-syllabi/34>

This Syllabus is brought to you for free and open access by the NJIT Syllabi at Digital Commons @ NJIT. It has been accepted for inclusion in Chemical and Materials Engineering Syllabi by an authorized administrator of Digital Commons @ NJIT. For more information, please contact digitalcommons@njit.edu.

CHE 682 – Polymer Structure and Properties Spring 2019

Instructor: Dr. Kathleen McEnnis **Office:** 382 Tiernan Hall **Email:** mcennis@njit.edu

Office Hours: **Monday:** 1:00 – 2:00 PM; **Friday:** 2:00 PM – 3:00 PM
Other hours by appointment only

Text: Polymer Physics, Michael Rubinstein and Ralph H. Colby, ISBN: 9780198520597

Class: Wednesday 6:00 PM-8:50 PM Room Tiernan Hall 106

Course: The course provides an overview of polymer structures and properties and their relationships from the molecular viewpoint to phenomenological descriptions. Topics include thermodynamics of a single molecule, dynamic theory and viscoelasticity of polymers, polymer solids and mechanical properties, rubbers, polymer blends and composites, biological polymers, and special applications. New areas and innovative applications of polymers will be introduced.

Prerequisites: Undergraduate physical chemistry, a materials related course or CHE 503 or equivalent

Withdraw Deadline: April 8, 2019

Homework: Homework assignments will be given in class or posted on Moodle. Homework is for you to practice and will not be graded. Solutions to the problems will be posted on Moodle.

Exams: There will be two exams and one final exam. All exams are closed book and closed notes, however an equation sheet will be provided. If you miss an exam or final, you must contact the Dean of Students with your excuse. No makeup exams or finals will be granted unless the Dean of Students contacts me about your reason for missing and it is deemed an acceptable excuse.

Project: Details of the project will be announced in class.

GRADING

2 Exams	50%
Final	30%
Project	<u>20%</u>
	100%

Grades will be based on:

A: 90 – 100%
B+: 80 – 89%
B: 70 – 79%
C+: 60 – 69%
C: 50 – 59%
F: 0 – 49%

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:

<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. ***Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university.*** If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

Topics

Single Chain Conformation
Dilute Solutions
Semidilute Solutions
Concentrated Solutions/Blends
Chain Dynamics
Glasses
Crystals
Rubber Elasticity

Key Dates

Exam 1 Wednesday, March 6
Project Due Wednesday, April 3
Exam 2 Wednesday, April 17
Final Exam TBA
(will take place during the May
10 – May 16 Final Exam period)

Exam dates and topics may be subject to change.

If you need accommodations due to a disability please contact Chantonette Lyles, Associate Director of Disability Support Services, Fenster Hall Room 260 to discuss your specific needs. A Letter of Accommodation Eligibility from the Disability Support Services office authorizing your accommodations will be required.