

CHEM 8873/ CHBE 8803/MSE 8803

Molecular Sciences and Engineering 1224
and
BlueJeans via our Canvas Site
(Partially at a Distance (BOR) Instructional Method)

Advanced Polymer Chemistry

Professor John R. Reynolds
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Fall 2020 T, Th 12:30 p.m. to 1:45 p.m.

Text: *Principles of Polymerization* by George Odian (4th Edition)

Lectures: This course will address advanced topics in synthetic polymerization methodology, polymer structure, and polymer properties in solution and the solid state. Based on prerequisites of a fundamental background in synthetic and physical polymer chemistry, concepts will be extended to recent scientific and application developments in the literature. Example topics include copolymerization, living radical polymerizations, coordination polymerization, metal mediated coupling polymerizations, branched polymers, high strength fibers, polymer nanocomposites, recycling and bio-degradation of polymers, photo- and electroactive polymers. Select topics will be presented by guest lecturers.

Pre-Requisites: Students should be familiar with the basic concepts of synthetic and physical polymer chemistry. Questions on this should be directed to the instructor.

Readings: Homework reading assignments made for reading specific portions of the text and material from outside sources will be "fair game" on exams.

Course Format: This course is "hybrid" and will feature lectures from the course instructor and a special set of contributing Georgia Tech faculty. All course-related communication, including any changes, will be via Canvas. Attendance for scheduled in-person sessions (with a limited number of attendees pre-set) is encouraged but not required, and all course material will be available remotely. Remote lectures will be synchronous. Participation during lectures is an important component of the learning experience. Students should be prepared for in-class questions addressing pre-assigned readings and lecture concepts. All lectures will be recorded during class and made available via Canvas after the class period. Office hours will be virtual.

Health: Effective July 15, 2020, University System of Georgia (USG) institutions will require all faculty, staff, students, and visitors to wear an appropriate face covering while inside campus facilities/buildings where six feet social

distancing may not always be possible. Students with health issues are encouraged to take this course remotely.

Grading: Grading will be based on a total point system with points accumulated from two mid-terms and one final exam to be done as “take home” exams. The exams will be open notes, open book, and open internet. Students will work independently on these exams getting help from no other classmates or people. Approximate standing during the course can be obtained by private discussion with the instructor.

Exams: Exams will be worth 100 points each. Dates for the exams are:

Exam 1 - Take home exam delivered to students on Wednesday, September 23. Due date is Friday, September 25 at 5:00 pm

Exam 2 - Take home exam delivered to students on Wednesday, October 28. Due date is Friday, October 30 at 5:00 pm.

Final Exam - Take home final exam delivered to students on Friday, December 4. Due date is Tuesday, December 8 at 2:10PM

(The final will be comprehensive but will still be worth 100 points.)

Important Note – A 10 point penalty (10 percent) will be levied for each 24 hours that an exam is late.

Office Hours: On BlueJeans, Thursdays, 3:00 p.m.- 4:00 p.m., and by appointment. Contact via e-mail at Reynolds@chemistry.gatech.edu (subject line – Advanced Polymer Chemistry 8803/8873)

Disability Services: The Office of Disability Services is committed to providing guidance and resources for students with disabilities during this time. If you have a question about your accommodations or other accessibility matters, the office will be operating normal business hours in a virtual format. Contact the Office of Disability Services at (404)894-2563 and <https://disabilityservices.gatech.edu/>

Academic Honesty: Students are expected to adhere to the Georgia Tech honor code during all aspects of this course (see <http://osi.gatech.edu/content/honor-code> for details). For more on Student-Faculty expectations, see <http://catalog.gatech.edu/rules/22/>