

## Syllabus

## CHM 6271 - Chemistry of High Polymers; Class Number 30342; Fall 2024

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**Instructor & Contact Information.** Prof. Brent S. Sumerlin; [sumerlin@chem.ufl.edu](mailto:sumerlin@chem.ufl.edu); PH: 352-392-0563; Office: Sisler 301

**Class Time & Location.** Wednesday 9:35-11:30AM; Classroom: 113 Keene-Flint Hall

**Instructor Office Hours.** By appointment. Email to arrange.

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**Course Description.** Fundamental polymer chemistry, with emphasis on the mechanisms of polymerization reactions of historical and emerging importance and the relationship of physical properties to chemical constitution, with particular focus on recent literature.

**Prerequisites.** CHM 5275 (graduate-level synthetic polymer chemistry), or equivalent.

**Learning Outcomes/Objectives.** Upon completion of this course, a successful student will be able to:

- Discuss the advanced concepts of polymer chemistry;
  - Demonstrate clear understanding of synthetic polymer chemistry, mechanisms of polymerization, and structure-property relationships;
  - Describe historic and modern techniques of macromolecular chemistry
  - Present the basic kinetic, thermodynamic, and mechanistic details of polymerization reactions of historical and emerging importance
  - Explain how polymer chemistry is relevant in living organisms and to the world at large.
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**Suggested Textbook.** *Principles of Polymerization*, 4<sup>th</sup> Edition by George Odian (ISBN: 0-471-27400-3) and related handouts. Note: UF has an ebook subscription to this book (only 3 concurrent users allowed):

<https://ebookcentral.proquest.com/lib/ufl/detail.action?docID=469767>

**Supplementary Sources.** *Textbook of Polymer Chemistry* by Fred W. Billmeyer; *Principles of Polymer Chemistry* by Paul J. Flory; *Contemporary Polymer Chemistry* by Harry R. Allcock; *Introduction to Physical Polymer Science* by L. H. Sperling; *Essentials of Polymer Science and Engineering* by Paul C. Painter and Michael M. Coleman; *Polymer Chemistry* by Paul C. Hiemenz and Timothy P. Lodge.

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**e-Learning Website.** All students have access to the e-Learning website: <https://elearning.ufl.edu/>

Login with your Gatorlink account username and password. Lecture notes/slides will be posted on e-Learning after each class. Check e-Learning often. The site may also be used for making announcements and recording grades. Additional materials that supplement the text may be posted.

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### Class Requirements.

- 1) Two in-class exams (Oct 2, 2024 and Dec 4, 2024) (100 points each; 200 points total)
- 2) Oral presentation (toward the end of the semester) (100 points)

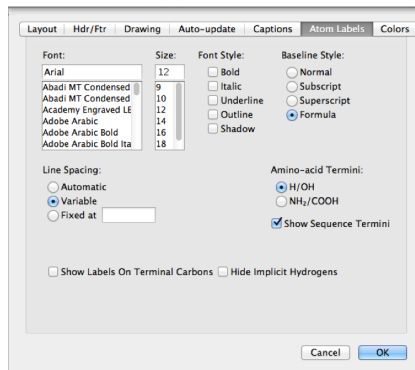
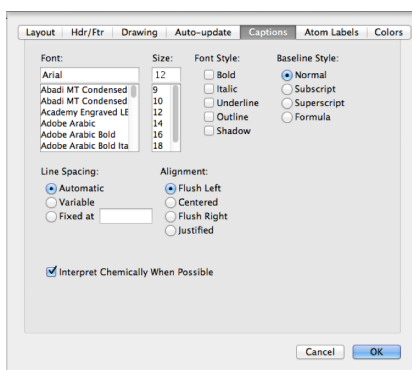
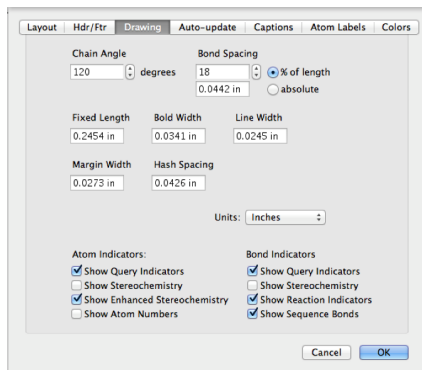
**Total = 300 possible points**

**Note:** For reasons of privacy, grades will not be discussed by email. All grades will be posted on e-Learning. If you have questions about your grade, you should come to office hours to discuss your questions/concerns with me.

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**Presentation requirements.** For the sake of consistency across presentations, a few rules must be followed by all presenters.

- The FINAL version of all presentations must be submitted as a .pptx or .ppt file via Canvas (under *both* the Assignments and Discussions sections) by 10PM the night before your scheduled presentation. Failure to do so will result in a 5-point deduction.
- Name your file "LastName – TopicTitle.pptx" (or \*.ppt). Name your Discussion with the same name and attach your presentation as a file. Keep the Discussion available until 12/31/2024.
- **Presentations should be designed to last for 20 min**, leaving roughly **5-10 min for questions and discussion**.
- Slides must be made using the template and guidelines contained therein provided by the instructor via Canvas.
- Citations must be provided for all literature sources from which information is derived. These citations must be in ACS format (i.e., *Journal Name* **YEAR**, *Volume*, FirstPage-SecondPage).
- ChemDraw structures should follow the settings outlined below.



**Presentation Grading.** Presentation grades will be determined based on the quality, depth, and timing of the oral presentation and lecture slides. Lecture slides will be assessed for their detail, clarity, organization, quality, and conformance to the template guidelines. The goal of each presentation is to *teach* the fundamentals of the topics being discussed. Presentations should primarily focus on fundamentals (history of development, mechanism, scope, kinetics, thermodynamics, utility) of the assigned topic. Presentations should not *primarily* be reviews of literature.

**Lecture Absence Policy.** This course administers all conflicts with scheduled assessments and examinations in accordance with University policy. As such, certain unavoidable absences by students from examinations are allowed, if properly documented and disclosed to Dr. Sumerlin at least one week before the anticipated conflict. Such allowed absences include, but are not limited to, religious observances, sanctioned sporting events, military obligations, and court-imposed legal obligations. In such cases, provided documented notice was made to Dr. Sumerlin one week in advance of the exam date, students will be given an excused absence. In this event, recorded lectures may be available.

Unpredicted absences due to medical emergencies are not covered under the above absence policy. If the time and severity of the emergency is severe enough to make continuation in scholastic activity impossible for the rest of the term, a medical withdrawal is strongly advised. If the condition warranting the absence at a scheduled exam is unexpected and can be recovered from in short order, the student must provide verifiable documentation of the medical emergency to Dr. Sumerlin within a timely fashion of the scheduled assessment date.

**Attendance.** Attendance for lectures is mandatory. While discouraged, two lectures may be missed without penalty.

**Accommodations for students with disabilities.** Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

**Inclusive learning environment.** We embrace the University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinion or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." We are committed to fostering an open and inclusive classroom and laboratory environment in our College, where every student, guest instructor and contributor feels valued. If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office on Multicultural & Diversity Affairs Website: <http://www.multicultural.ufl.edu/>

**UF Honor Code.** We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

On all work submitted for credit by students at the university, the following pledge is either required or implied: "**On my honor, I have neither given nor received unauthorized aid in doing this assignment.**" "The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior."

**Cheating and Plagiarism.** Cheating and/or plagiarism will not be tolerated. All images and text derived from literature sources must be accompanied by the appropriate citation using the format outlined in the ACS Style Guide. Plagiarism consists of passing off as one's own the ideas, words, writings, etc. that belong to someone else. You are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have that person's permission. See: <http://www.dso.ufl.edu/scrr/honorcodes/honorcode.php>  
<http://www.dso.ufl.edu/scrr/honorcodes/conductcode.php>

**Copyright Notice.** All handouts used in this course will be distributed to the class and instructor, including for their future reference and use.