The University of Western Ontario
Chemistry 9663T, Winter 2018

Advanced Polymer Chemistry II

Instructor          Dr. Joe Gilroy
                    Email: joe.gilroy@uwo.ca
                    Tel: 519-661-2111 ext. 81561
                    Office: MSA 3201

Description

This 0.25 course will build on the topics covered in Chem 9653 including a detailed look at block copolymer synthesis, characterization and self-assembly and other special topics. Through the discussion of recent examples from the literature, the ability of these synthetic techniques to provide tailor-made functional materials for various applications will be explored. Students are recommended to have taken Chem 9653 or an equivalent undergraduate polymer chemistry course before enrolling. If there is uncertainty surrounding previous courses, please discuss them with Dr. Gilroy.

Outline (tentative)

1. Brief refresher of living polymerization techniques
2. Cyclic polymers - how and why do they form?
3. Block copolymers - synthesis, purification, and characterization
4. Thin-film and solid-state self-assembly (including nanoconfinement, reactive-ion etching, and applications)
5. Solution self-assembly of coil-coil block copolymers
6. Solution self-assembly of crystalline-coil block copolymers
7. Additional selected topics (topics will vary depending on who is enrolled in class).

Lectures          3 hours per week. Mon, Wed, Fri 9:30-10:30, MSA 3204 (weeks of Feb 26, Mar 5, 12, 19, 26, Apr 2)

Evaluation (tentative)

Assignments (2 × 30%)                  60%
Literature Presentation (on a recent paper)  30%
In-Class Participation              10%

Course Materials

There is no required textbook. Course notes and electronic supplements will be provided during the course.
Course attendance and missed tests/exams

Course attendance is mandatory for Chem. 9663. Appeals related to information missed due to course absences will not be considered for the basis of a grade appeal.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed.

Notes on Academic Honesty

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf

All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (http://www.turnitin.com).

Health and Wellness

As part of a successful graduate student experience at Western, we encourage students to make their health and wellness a priority. Western provides several on campus health-related services to help you achieve optimum health and engage in healthy living while pursuing your graduate degree. For example, to support physical activity, all students, as part of their registration, receive membership in Western’s Campus Recreation Centre. Numerous cultural events are offered throughout the year. For example, please check out the Faculty of Music web page http://www.music.uwo.ca/, and our own McIntosh Gallery http://www.mcintoshgallery.ca/. Information regarding health- and wellness-related services available to students may be found at http://www.health.uwo.ca/. Students seeking help regarding mental health concerns are advised to speak to someone they feel comfortable confiding in, such as their faculty supervisor, their program director (graduate chair), or other relevant administrators in their unit. Campus mental health resources may be found at http://www.health.uwo.ca/mental_health/resources.html.