

# **Chemistry 3320B Polymer Chemistry Winter 2026**

## **Course Outline**

### **1. Course Information**

#### **Course Information**



The schedule for the lab experiments will be established and distributed during the first week of classes.

**Prerequisite(s):** Either (Chemistry 2273A and Chemistry 2283G) or Chemistry 2213A/B, and either (Chemistry 2214A/B or Chemistry 2274A or the former Chemistry 2384B).

Unless you have either the prerequisites for this course or written special permission from the Department of Chemistry to enroll in it, you may be removed and withdrawn from this course in accordance with university policy. This may be done after the add/drop deadline of the academic term, and the course will be marked as withdrawn (WDN) on your academic record. This decision may not be appealed.

### **2. Instructor Information**



Students must use their Western (@uwo.ca) email addresses when contacting their instructors.

### **3. Course Syllabus, Schedule, Delivery Mode**

#### **Course Description**

A comprehensive treatment of the preparation and uses of polymers and their chemical and physical properties in the solid state and solution.

## Course Topics (number of lectures is approximate)

- General introduction and physical properties of polymers (5 lectures)
- Addition polymerization of alkenes including radical, ionic, and transition metal (5 lectures)
- NMR spectra of polymers (2 lectures)
- Condensation polymerization (1 lecture)
- Synthesis of  $\pi$ -conjugated polymers (2 lectures)
- Ring-opening polymerization (2 lectures)
- Inorganic polymers: silicones and polyphosphazenes (2 lectures)
- Molecular weight and its determination (3 lectures)
- Thermal analysis of polymers (2 lectures)
- Structure and properties of polymers, crosslinking (3 lectures)
- Copolymers and self-assembly (5 lectures)
- Inorganic alkene analogs (2 lectures)

## Learning Outcomes

*Upon completion of Chem 3320, students will be able to....*

1. Describe the scientific principles governing polymer synthesis and characterization and apply these principles to problems.
2. Use their knowledge of polymer chemistry to predict and rationalize properties, mechanisms, and patterns of reactivity.
3. Apply methodologies in order to conduct polymer synthesis, analyses, or other chemical investigations.
4. Prepare logical, organized, and concise written reports describing their experimental results in the areas of polymer synthesis and characterization.
5. Work productively and collaboratively as a team member.

## Laboratory Experiments

The laboratory component of the course is intended to augment the lecture course by providing experimental examples to illustrate general principles. It is also intended to teach experimental techniques that are commonly used in polymer/synthetic chemistry. Labs begin Jan 16 (Friday Section) or Jan 19 (Monday Section).

A lab report must be submitted via Gradescope for each experiment (details are provided in the Chem 3320B lab manual). This will either be in the form of a formal, written report or data sheet format. You will be given your individual schedule during the first week of classes.

To help you find the hazards/safety information for the reagents that you will be using in the lab the following online resources will help you:

<https://www.uwo.ca/hr/safety/topics/sds.html>



To Maintain consistency across the entire course, please contact Suhjung first with lab-related questions prior to contacting Dr. Gilroy. *All correspondence to TAs must be from your @uwo.ca email account.*

### **Laboratory Schedule and Grading**

Individualized laboratory schedules will be circulated via OWL during the first week of classes. A breakdown of laboratory grading can be found on page 32 of the Chem 3320 Lab Manual.

\*Note - Formal reports and data sheets must be submitted electronically via Gradescope before end of day on the day of your lab section the week that they are due.

### **Important Dates**

Classes begin: Jan. 5, 2026

Reading Week: Feb. 14 – 22, 2026

Classes end: Apr. 9, 2026

## **4. Course Materials**

All course material will be posted to OWL: <https://westernu.brightspace.com/>

Students are responsible for checking the course OWL site (<https://westernu.brightspace.com/>) regularly for news and updates. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance with the course OWL site, they can seek support on the [OWL Brightspace Help](#) page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

### **Textbook and Other Learning Materials**

**Required textbook:** There is no required textbook for Chem 3320B.

**Lab Manual:** Chemistry 3320B Laboratory Manual Winter 2026 Edition (\$40.00). This is required and can be purchased from the UWO Campus Bookstore.

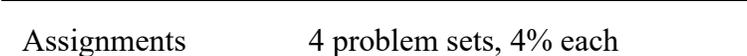
**Lab Notebook:** A Hayden-McNeil Organic Chemistry Laboratory Notebook with Carbon Copy (\$16.05) is required for recording all data and observations in the laboratory. This can be used for more than one (not concurrent) course.

**Personal Protective Equipment:** Safety glasses are required at all times when working in the laboratory. The UWO Undergraduate Chemistry Society sells these at the beginning of term should you require a pair. Students who normally wear prescription glasses must wear safety glasses or goggles over their regular glasses. A lab coat is also required.

## 5. Methods of Evaluation

### Grading Scheme and Assessment Dates

The overall course grade will be calculated as follows:

		12%
		12%
Assignments	4 problem sets, 4% each (Approximate due dates Jan. 23, Feb. 6, Feb. 27, and Mar. 20; due at beginning of class)	16%
Laboratory	4 reports, 3 worksheets	24%
Final Exam (cumulative, date and time to be announced)		36%

### Course Attendance

Course attendance is mandatory for Chem 3320B. Information missed during unexcused absences will not be the grounds for academic appeal.

### General Information about Missed Coursework

Students must familiarize themselves with the *University Policy on Academic Consideration – Undergraduate Students in First Entry Programs*, posted on the Academic Calendar:

[https://uwo.ca/univsec/pdf/academic\\_policies/appeals/academic\\_consideration\\_Sep24.pdf](https://uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf)

This policy does not apply to requests for Academic Consideration submitted for **attempted or completed work**, whether online or in person.

The policy also does not apply to students experiencing longer-term impacts on their academic responsibilities. These students should consult [Accessible Education](#).

For procedures on how to submit Academic Consideration requests, please see the information posted on the Office of the Registrar's webpage: [https://registrar.uwo.ca/academics/academic\\_considerations/](https://registrar.uwo.ca/academics/academic_considerations/)

All requests for Academic Consideration must be made within 48 hours after the assessment date or submission deadline.

All Academic Consideration requests must include supporting documentation; however, recognizing that formal documentation may not be available in some extenuating circumstances, the policy allows students to make one Academic Consideration request **without supporting documentation** in this course. However, the following assessments are excluded from this and, therefore, always require formal supporting documentation:

- Examinations scheduled during official examination periods (Defined by policy)

When a student *mistakenly* submits their one allowed Academic Consideration request **without supporting documentation** for the assessments listed above or those in the **Coursework with Assessment Flexibility** section below, the request cannot be recalled and reapplied. This privilege is forfeited.

### **Evaluation Scheme for Missed Assessments**

*Assignments and Lab Reports:* If an assignment or lab report is missed for valid reasons, the weighting of the assignment or lab report will be transferred to the corresponding portion of the course (*i.e.*, the total for assignments or labs).

*Midterm Tests:* If a midterm test is missed for valid reasons, the weighting of the test will be transferred to the final examination. For those students who cannot write a midterm test on the date indicated because of religious or class conflicts, please contact Dr. Gilroy immediately to make alternative arrangements.

*Final Exam:* When a student misses the Final Exam and their Academic Consideration has been granted, they will be allowed to write the Special Examination (the name given by the University to a makeup Final Exam). See the Academic Calendar for details (under [Special Examinations](#)), especially for those who miss multiple final exams within one examination period.

### **Late Submissions**

Laboratory reports and assignments handed in late will receive a penalty of 10% per day, with the weekend counting as two days. Academic considerations will only be given to students who get the required approval from the academic counsellors in the Faculty of Science. Graded lab reports will be returned no sooner than 7 days after the due date. No late lab report submissions can be accepted after the graded reports have been returned, whether you received a deadline extension or not. If your academic accommodation for a missed lab report extends beyond the date that graded reports are returned, you will have to apply for a grade of INC and submit the missed lab report the next time the course is offered. Alternatively, you may choose to accept a mark of ZERO for the missed work.

### **Essential Learning Requirements**

All work submitted for a grade in this course must be your personal work (or yours and a team member as appropriate), use of answers obtained externally is prohibited. Even when Academic Considerations are granted for missed coursework, the following are deemed essential to earn a passing grade.

The labs, assignments, and tests/exams are essential components of this course. You must attend and complete reports for at least 4 out of the 6 labs, 2 out of the 4 assignments, write at least one of the two midterm tests, and write the final exam to pass this course. In addition, you must achieve a grade of at least 50% for both the laboratory component and the combined marks for the term tests, assignments, and final examination. Students who fail to meet any of these requirements, whether excused or not, will receive a final grade of not greater than 40%, even if the calculated grade is higher. Exception: Students who, for medical or compassionate reasons, have been granted Incomplete Standing (INC grade) by the Dean's Office will be required to complete the missed work the next time the course is offered.

## 6. Additional Statements

### 6.1 Religious Accommodation

When a recognized religious holiday or observance conflicts with an examination, test, or other scheduled academic obligation, students must request accommodation via the University's Student Absence Portal (SAP). This request should identify the conflict and specify which course component(s) (*e.g.*, test, midterm, exam) are affected.

Students are encouraged to submit the SAP request as early as possible, but no later than two weeks before any examination, or one week before any mid-term test or quiz, to allow sufficient time for adjustment.

The SAP request serves as official notification to both the course instructor and the Academic Advising Office, in accordance with University policy:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_religious.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf)

The Faculty of Science considers religious accommodations as scheduling conflicts. Instructors should provide either a make-up exam or an earlier sitting of the same exam to accommodate the student.

For more information on recognized religious holidays, please visit the Diversity Calendar posted on the Equity, Diversity & Inclusion website - <https://www.edi.uwo.ca>

### 6.2 Academic Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic\\_Accommodation\\_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf).

### 6.3 General Academic Policies

The website for Registrar Services is <https://www.registrar.uwo.ca/>.

#### Use of @uwo.ca email

In accordance with policy, [https://www.uwo.ca/univsec/pdf/policies\\_procedures/section1/mapp113.pdf](https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf), the centrally administered e-mail account provided to students will be considered the individual's official university email address. It is the responsibility of the account holder to ensure that emails received from the University at their official university address are attended to in a timely manner.

#### Requests for Relief (formerly known as "appeals")

Policy on Request for Relief from Academic Decision:

[https://uwo.ca/univsec/pdf/academic\\_policies/appeals/requests\\_for\\_relief\\_from\\_academic\\_decisions.pdf](https://uwo.ca/univsec/pdf/academic_policies/appeals/requests_for_relief_from_academic_decisions.pdf)

Procedures on Request for Relief from Academic Decision (Undergraduate):

[https://uwo.ca/univsec//pdf/academic\\_policies/appeals/undergrad\\_requests\\_for\\_relief\\_procedure.pdf](https://uwo.ca/univsec//pdf/academic_policies/appeals/undergrad_requests_for_relief_procedure.pdf)

## 6.4 Scholastic Offences

Policy on Scholastic Offences:

[https://uwo.ca/univsec//pdf/academic\\_policies/appeals/scholastic\\_offences.pdf](https://uwo.ca/univsec//pdf/academic_policies/appeals/scholastic_offences.pdf)

Procedures on Scholastic Offences (Undergraduate):

[https://uwo.ca/univsec//pdf/academic\\_policies/appeals/undergrad\\_scholastic\\_offence\\_procedure.pdf](https://uwo.ca/univsec//pdf/academic_policies/appeals/undergrad_scholastic_offence_procedure.pdf)

## Use of Electronic Devices During Assessments

In courses offered by the Faculty of Science, the possession of unauthorized electronic devices during any in-person assessment (such as tests, midterms, and final examinations) is strictly prohibited. This includes, but is not limited to: mobile phones, smart watches, smart glasses, and wireless earbuds or headphones. **Unless explicitly stated otherwise in advance by the instructor, the presence of any such device at your desk, on your person, or within reach during an assessment will be treated as a *scholastic offence*, even if the device is not in use.** Only devices expressly permitted by the instructor (*e.g.*, non-programmable calculators) may be brought into the assessment room. It is your responsibility to review and comply with these expectations.

## Use of Generative AI Tools

Unless otherwise stated, the use of generative AI tools (*e.g.*, ChatGPT, Microsoft Copilot, Google Gemini, or similar platforms) is **not permitted** in the completion of any course assessments, including but not limited to: assignments, lab reports, presentations, tests, and final examinations. Using such tools for content generation, code writing, problem solving, translation, or summarization—when not explicitly allowed—will be treated as a **scholastic offence**. If the use of generative AI is permitted for a particular assessment, the conditions of use will be specified by the instructor in advance. If no such permission is granted, students must assume that use is prohibited. It is your responsibility to seek clarification before using any AI tools in academic work.

## 6.5 Support Services

Please visit the Science & Basic Medical Sciences Academic Advising webpage for information on adding/dropping courses, academic considerations for absences, requests for relief, exam conflicts, and many other academic-related matters: <https://www.uwo.ca/sci/counselling/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced

GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts, at:

[https://www.uwo.ca/health/student\\_support/survivor\\_support/get-help.html](https://www.uwo.ca/health/student_support/survivor_support/get-help.html).

To connect with a case manager or set up an appointment, please contact [support@uwo.ca](mailto:support@uwo.ca).

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. If you have any questions regarding accommodations, you may also wish to contact Accessible Education at

[http://academicsupport.uwo.ca/accessible\\_education/index.html](http://academicsupport.uwo.ca/accessible_education/index.html)

Learning-skills counsellors at Learning Development and Success (<https://learning.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Additional student-run support services are offered by the USC, <https://westernusc.ca/services/>.