

Chemistry 3330F Course Outline

1. Course Information

Industrial Chemistry 3330F, Fall 2022

Lectures in room NCB-293, Tuesdays 0930-1130 h and Thursdays 0930-1030 h.

List of Prerequisites:

Either (Chemistry 2273A and 2283G) or Chemistry 2213A/B, and either Chemistry 2214A/B or 2384B.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

Antirequisite:

The former CBE 2216.

2. Instructor Information

| Instructors | Email | Office | Phone | Office Hours |
|---------------------|--|--------|-------|----------------------|
| Dr. Jamie Noël | jjnoel@uwo.ca | ChB 20 | 88029 | Zoom, By appointment |
| TA: Jeffrey Collins | jcoll29@uwo.ca | email | email | Zoom, By appointment |

Students must use their Western (@uwo.ca) email addresses when contacting their instructor or TA.

3. Course Syllabus, Schedule, Delivery Mode

This course will address industrial applications of chemistry, including:

- a survey of the chemical industry and its principal products
- comparative economics of chemical processes
- quality assurance
- safety
- environmental issues
- employment and careers in the chemical industry

Some of this material will be presented in lecture format by your instructor. Additionally, guest speakers with relevant professional experience will share first-hand knowledge of different aspects of the chemical industry.

Expected Learning Outcomes: It is intended that students will acquire an appreciation for the ubiquity, diversity, importance, excitement, and challenges of the modern chemical industry and observe some of the concerns and motivations that drive the industry. Students should begin to discover some of the career opportunities in chemistry that are open to them, begin to make networking contacts with industry professionals, and develop a strategic approach to job-seeking in the chemical field.

Delivery Modes: The course will be delivered through a mixture of in-class presentations by the course instructor, a series of guest lecturers from various sectors of the chemical industry, and a modest amount of independent research by the students themselves. The flexibility afforded by videoconferencing software will greatly enhance our opportunities to hear from industry personnel stationed near or far from Western University. Therefore, some guest lecturers may be physically present in class and others may make their presentations electronically. To facilitate student questions and discussion with the guest lecturers, students are expected to be present in class for these lectures, even if they are delivered by a guest lecturer who presents online. ****Students will not be able to access guest lectures remotely unless the course moves online due to COVID-19 (see [Contingency Plan](#) below). Regardless, guest lectures will NOT be recorded for later viewing.**

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Topics:

- a) Introduction to the chemical industry
- b) Health and safety in the chemical industry
- c) Quality assurance
- d) Sources of chemicals
- e) Energy
- f) Infrastructure
- g) Environmental impact
- h) Industry sectors (time permitting):
 - Petrochemical
 - Pharmaceutical
 - Chlor-alkali
 - Agrochemical
 - Biotech

Key Sessional Dates:

Classes begin: September 8, 2022; January 9, 2023

Fall Reading Week: October 31 – November 6, 2022; February 18 – 26, 2023

Classes end: December 8, 2022; April 10, 2023

Exam period: December 10 – 22, 2022; April 13 – 30, 2023

Contingency plan for an in-person class pivoting to 100% online learning

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, affected course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable, **particularly for the guest lectures**) or asynchronously (e.g., posted on OWL for students to view at their convenience)) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

4. Course Materials

I am not requiring (or even recommending) any textbook purchases. There are various books, several of them available in the library, that provide relevant information on a broad spectrum of issues and applications in the chemical industry, but they are all dated.

Students are responsible for checking the course OWL site (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class.

All course material will be posted to OWL: <http://owl.uwo.ca>. **Guest lectures will not be recorded; students must be present in class during guest lectures.**

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

Technical Requirements

In the event that online learning is required, a stable internet connection with working microphone and webcam will be required. As has been the case in the past, the decision to pivot to online learning will be made by Western, and not individual instructors or departments (excepting temporary online instruction in the event of instructor illness).

5. Methods of Evaluation

The overall course grade will be calculated as follows:

| | |
|---------------------------------|------------|
| Assignments (2) | 20% |
| In-class speaker summaries (10) | 20% |
| Midterm Test | 20% |
| Final Exam | <u>40%</u> |
| | 100% |

All work submitted for a grade in this course must be your personal work. The use of answers obtained externally is prohibited.

Important Dates:

Assignment #1 due: Thurs. Oct. 6, 2022

Assignment #2 due: Tues. Nov. 29, 2022

Midterm test (in-class): Tues. Oct. 25, 2022

Final examination: TBA (set by the Registrar, during the final examination period)

The midterm test will include course content up to and including the class of Oct. 20. The final examination is cumulative (i.e., it will include all course material from the beginning to the end of the course).

In-class speaker summaries will consist of a printed questionnaire-style evaluation with **short** answers to be written in the space provided right on the question page. The answers to the questions will be readily

available to students by listening carefully to the guest lecturer's presentation and by asking questions of the guest lecturer. The summary must be submitted at the end of the class period during which the guest lecture was presented (i.e., you must attend each guest lecture and submit the speaker summary at the end of the talk).

Note: Students must attend a minimum of 6 of the 10 lectures by visiting speakers to pass this course, whether EXCUSED or not. Students not achieving this minimum level of participation will receive a maximum overall grade of no higher than 40% in the course, regardless of their performance on the assignments, midterm test, and final examination.

Note also: This course is designated an "essay course" to satisfy the Senate requirement that students must demonstrate "some minimal competence in essay writing." Therefore, in order to pass the course, students must achieve a passing grade (50% or higher) on the "assignments" portion of the course. Students not achieving this minimum score will receive a maximum overall grade of no higher than 40% in the course, regardless of their performance on the speaker summaries, midterm test, and final examination.

6. Student Absences

If you are unable to meet any evaluation component of this course (speaker summary, assignment, test, etc.) due to illness or other serious circumstances, *regardless of its weight*, and wish to be excused, you must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

The Student Medical Certificate is available at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

Late submissions of in-class speaker summaries will not be accepted. Missing submissions will merit a score of zero. In case of an accommodated absence, the grade for this portion of the course will be re-weighted based on the unexcused speaker summaries.

An assignment submitted beyond the deadline will be assessed a penalty of 25% if submitted within 48 hours of the deadline. Assignments will not be accepted more than 48 h after the deadline and a score of zero will be entered. An assignment from a student with a valid accommodation will be accepted without penalty for 48 h following expiry of the accommodated period, then with 25% late penalty for the next 48-h period, after which the assignment will not be accepted and a score of zero will be entered.

If necessary, a make-up midterm test will be held on Friday, Oct. 28, 1430-1630 h (location to be determined) for students with accommodated absences from the regular midterm. If a student misses the make-up midterm with a valid accommodation, then the weight of the midterm will be applied to the final examination (i.e., 60% final exam weight).

Absences from Final Examinations

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination (SPC), the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. Students who fail to write an approved SPC examination on that date forfeit that privilege and must apply again. The maximum course load for the term in which the SPC was granted will be reduced appropriately. See the Academic Calendar for details (under [Special Examinations](#)).

Note: missed work can *only* be excused through the mechanism described above. Being asked not to attend an in-person course requirement due to potential COVID-19 symptoms is not sufficient on its own.

6. Accommodation and Accessibility

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

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).

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy,

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 e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner.

No electronic devices will be permitted on tests and exams.

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:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.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>).

In the event of a health lock-down, tests and examinations in this course will be conducted using a remote proctoring service. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide **personal information** (including some biometric data) and the session will be **recorded**. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. More information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at:

<https://remoteproctoring.uwo.ca>.

8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, 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 and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (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.

To connect with a case manager or set up an appointment, please contact 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. You may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Learning-skills counsellors at the Student Development Centre (<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.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

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