

Chemistry 3330F Course Outline

1. Course Information

Course Information

Industrial Chemistry 3330F, Fall 2021

B&GS 0165,

Tuesdays 0930-1130 h and Thursdays 0930-1030 h.

List of Prerequisites: Either [Chemistry 2273A](#) and [2283G](#) or [Chemistry 2213A/B](#), or the former Chemistry 253; either [Chemistry 2284B](#) or [2214A/B](#), or the former Chemistry 254.

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.

Antirequisites: CBE 2216, or the former Chemistry 358a/b.

2. Instructor Information

Instructor	Email	Office	Phone	Office Hours
Dr. Jamie Noël	jjnoel@uwo.ca	ChB 20	88029	Online, by appointment

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

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

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, importance, excitement, and challenges of the 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 and a series of guest lecturers from various sectors of the chemical industry. 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.

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:
 - Petrochemical
 - Pharmaceutical
 - Chlor-alkali
 - Agrochemical
 - Biotech
 - Others, time permitting.

Key Sessional Dates:

Classes begin: September 8, 2021

Reading Week: November 1–7, 2021

Classes end: December 8, 2021

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, all remaining 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). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

4. Course Materials

Suggested Texts:

The following books provide relevant information on a broad spectrum of issues and applications in the chemical industry. Purchase of these books is not required. (They are old and there are no really good modern books on the topic available). The UWO bookstore is aware of these suggested texts and will be able to obtain them for you. They may also carry a limited number of copies, but ask about ordering one if you want it but cannot find it. I have also asked that copies of several relevant chapters be made available on reserve in the Taylor library.

- 1) Alan Heaton "The Chemical Industry, Second Edition", Chapman Hall, 1994, ISBN 0 7514 0018 1
- 2) Alan Heaton "An Introduction to Industrial Chemistry, Third Edition", Chapman Hall, 1996, ISBN 0 7514 0272 9

Additionally, I will provide copies of the lecture notes and other relevant materials on the course OWL site. All posted 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.**

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.

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.

5. Methods of Evaluation

The overall course grade will be determined from student performance as indicated below:

Assignments (2 x 10%)	20%
In-class speaker summaries (10 x 2%)	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. 7, 2021

Assignment #2 due: Tues. Nov. 30, 2012

Midterm test (in-class): Tues. Oct. 26, 2021

Final examination: TBA (set by the Registrar)

The midterm test will include course content up to and including the class of Oct. 21. 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).

Note: A minimum grade of 13/20 on the speaker summaries is required to pass this course. Students not achieving this minimum score will receive a maximum overall grade of no higher than 45% in the course, regardless of their performance on the assignments, midterm test, and final examination. In case of a valid excused absence, the grade for this portion of the course will be weighted based on the remaining number of expected speaker summaries.

Accommodations on Evaluations

If necessary, a make-up midterm test will be held on Friday, Oct. 29, 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.

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 weighted based on the remaining number of expected speaker summaries.

An assignment submitted beyond the deadline will be assessed a penalty of 25% if submitted within 48 h 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.

6. Student Absences

Academic Consideration for Student Absences

Students who experience an extenuating circumstance (illness, injury or other extenuating circumstance) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes:

- (i) Submitting a Self-Reported Absence (SRA) form provided that the conditions for submission are met. To be eligible for a Self-Reported Absence:
 - an absence must be no more than 48 hours
 - the assessments must be worth no more than 30% of the student's final grade
 - no more than two SRAs may be submitted during the Fall/Winter term

- (ii) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.
- (iii) Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Note that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered, unless otherwise instructed in the course outline.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For the policy on Academic Consideration for Student Absences – Undergraduate Students in First Entry Programs, see:

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

and for the Student Medical Certificate (SMC), see:

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

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>.

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 make-up 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, 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. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under Special Examinations).

6. Accommodation and Accessibility

Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD), 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.

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 his/her official university address is attended to in a timely manner.

Electronic devices will not 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 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/>.

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 (519) 661-2147 if you have any questions regarding accommodations.

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/>.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.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.

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

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