

Western University – Faculty of Engineering

## CBE 4411 A/B Engineering Coffee

Course Syllabus 2023-24

### 1 Purpose of the course

The course will combine and demonstrate chemical engineering in an experiential learning setting using coffee as a teaching tool. The course allows opportunities to synthesize concepts from many of the second and third year chemical engineering courses as well as from the first year business course for engineers.

### 2 Calendar Description

This course combines and demonstrates chemical engineering using coffee as a teaching tool. Experiential learning will include hands-on applications of concepts through multiple lab activities and an examination of a local café through a case based learning activity.

Prerequisites: CBE 2220 A/B, CBE 2221 A/B, CBE 3322 A/B, CBE 3323 A/B, CBE 3324 A/B

Co-requisites: None.

Anti-requisites: None.

Contact Hours: 3 laboratory hours, 1 tutorial hour

CEAB Academic Units: Engineering Design 70%, Engineering Science 20%, Complementary studies (Teamwork and Oral & Written Communication) 10%

Text: No required text. Lecture notes and supporting course information will be posted to OWL.

Reference Material: Suggested readings may be posted to OWL.

Units: Both SI and FPS unit systems may be used in lectures, tutorials and all assessments.

### 3 Instructors

Lauren Tribe, Associate Professor, contact: [lbriens@uwo.ca](mailto:lbriens@uwo.ca)

### 4 General Workload Expectations and Contact Hours

- Online preparation before each weekly activity
- Participation in weekly activities
- Post-activity deliverables

CBE 4411 will be delivered in a weekly cycle of a pre-activity module, hands-on activity (during 3 hour laboratory) and then post-activity deliverable. There is a 1 hour tutorial each week that will be used as required to provide help with concepts and extra time for hands-on activities.

## 5 Course Learning Outcomes

By the end of this course, successful students will be able to:

- Synthesize concepts from previous courses to the application of coffee processing
- Acquire skills and confidence to expand ability to synthesize engineering concepts to many real-world and important applications beyond coffee processing
- Appreciate non-traditional applications of chemical engineering
- Acquire information that might influence career decisions and pathways
- Analyze and evaluate parameters that affect coffee processing
- Create a process to make the perfect cup of coffee
- Understand and describe how coffee processes affect the operation of a café
- Appreciate how engineering and business complement each other and how both need to be considered for successful application of an idea

By the end of this course, successful students will feel empowered to:

- Tackle tasks that are new and may be uncomfortable
- Able to identify and work on areas of growth instead of continuing to demonstrate only areas of competence
- Articulate skills that have been developed during the course
- Set and work towards goals
- Self-assess participation and professionalism; useful skill as self-assessments are commonly used in workplace performance appraisals.

Knowledge Base		Use of Engineering Tools		Impact on Society and the Environment	
Problem Analysis		Individual and Teamwork		Ethics and Equity	
Investigation		Communication Skills	<b>D</b>	Economics and Project Management	
Design		Professionalism		Life-Long Learning	<b>A</b>

CS 2 – Demonstrate the ability to communicate orally using appropriate materials, language, non-verbal communication and effective graphical tools

- Students submit a weekly graphic that captures an aspect of the activity
- Students will present their capstone project to the class

LL 3 – ability to assess limitations in knowledge and skills

- Before the course, students completed a survey that included an assessment of their self perceived knowledge and skills in specific areas. This survey will be repeated at the end of the course along with a reflection of any growth in these areas.

## 6 Methods of Evaluation

Deliverable	Assessment (%)
Preliminary survey	2
Pre-activity modules	8
Activity reports	40
Photographic journal	15
Culminating project	35

### Preliminary survey

Prior to the start of the course, students will complete a survey to assess their level of knowledge of core course material and level of integration and to determine goals and course expectations.

### Pre-activity modules

There will be background information available each week to review online and to prepare for each activity.

### Activity reports

A report will be completed for each activity that includes results/discussion/conclusions and a reflection component on the most surprising and challenging aspects of each activity and suggestions for improvement.

### Photographic journal

There will be a reflective photographic collective journal. Students will be required to submit a photo to the course Instagram site that captures an aspect of each activity. This is a way to share, learn, and further reflect upon the course experiences. It will also strengthen the interactions between students thereby forming a stronger community in which all are valued and positively contributing.

### Culminating project

The culminating project will include a competition between teams to make the best cup of coffee. The assessment will be student centred: students will choose the criteria to assess the best cup of coffee based on the knowledge and skills they have developed, learned and practiced throughout the course. This approach will increase motivation for engagement, provide more ownership over learning, another opportunity for reflection on the learning outcomes, and an opportunity to develop skills in self and peer assessment. There will be a report associated with the culminating project and a component of the report will require reflection upon the course as a learning experience and its impact on their future as an engineer.

### Diversity Statement

I consider the space for CBE 4411A to be a place where you will be treated with respect. I welcome individuals from all abilities, backgrounds, beliefs, ages, national origins, ethnicities, religious affiliations, genders and gender expressions and identities, sexual orientations, and any other visible and non-visible differences. All members of this class are expected to contribute to a respectful, welcoming, and inclusive environment for everyone in the class.

### Repeating All Components of the Course

In accordance with Senate and Faculty Policy, students who have failed an Engineering course must repeat all components of the course. No special permissions will be granted enabling a student to retain laboratory, assignment or test marks from previous years. Previously completed assignments and laboratories cannot be resubmitted for grading by the student in subsequent years.

### Use of English

In accordance with Senate and Faculty Policy, students may be penalized up to 10% of the marks on all assignments, tests, and examinations for the improper use of English. Additionally, poorly written work with the exception of the final examination may be returned without grading. If resubmission of the work is permitted, it may be graded with marks deducted for poor English and/or late submission.

### Attendance

Attendance is mandatory for the activities. There will not be opportunities to make up any activities. Attendance of a minimum of seven activities is required to achieve a passing grade in the course.

## Cheating

University policy states that cheating is a scholastic offence. The commission of a scholastic offence is attended by academic penalties, which might include expulsion from the program. If you are caught cheating, there will be no second warning (see Scholastic Offence Policy in the Western Academic Calendar).

## Plagiarism

Students must write their essays and assignments in their own words. Whenever students take an idea or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar). The University of Western Ontario has software for plagiarism checking. Students may be required to submit their work in electronic form for plagiarism checking.

## Conduct

Students are expected to arrive at lectures on time, and to conduct themselves during class in a professional and respectful manner that is not disruptive to others.

## Sickness and Other Problems

Students should immediately consult with the instructor or Department Chair if they have any problems that could affect their performance in the course. The student should seek advice from the Instructor or Department Chair regarding how best to deal with the problem. Failure to notify the Instructor or Department Chair immediately (or as soon as possible thereafter) will have a negative effect on any appeal.

Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

## Notices

Students are responsible for regularly checking their Western email and notices posted on Instructors' doors.

## Consultation

Students are encouraged to discuss problems with their teaching assistants and/or instructor. Individual consultation can be arranged by appointment with the instructor.

## Instructions for Students Unable to Write Tests or Examinations or Submit Assignments as Scheduled

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

**Assessments worth less than 10% of the overall course grade:** A student seeking academic accommodation for any work worth less than 10% must contact the instructor directly. The instructor will use good judgment and ensure fair treatment for all students. Where medical documentation is required, such documentation must be submitted by the student directly to the appropriate Faculty Dean's office, and it will be the Dean's office that will make the determination whether accommodation is warranted. Given the University's Official Student Record Information Privacy Policy, instructors may not collect medical documentation.

**Assessments worth 10% or more of the overall course grade:** For work totalling 10% or more of the final course grade, 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](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](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf).

## STATEMENT ON GENDER-BASED AND SEXUAL VIOLENCE

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 gender-based or sexual violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts, here. To connect with a case manager or set up an appointment, please contact [support@uwo.ca](mailto:support@uwo.ca).

## INSTRUCTIONS FOR STUDENTS UNABLE TO WRITE TESTS OR EXAMINATIONS OR SUBMIT ASSIGNMENTS AS SCHEDULED

If, on medical or compassionate grounds, you are unable to write term tests or final examinations or complete course work by the due date, you should follow the instructions listed below. You should understand that academic relief will not be granted automatically on request. You must demonstrate to your department (or the Undergraduate Services Office) that there are compelling medical or compassionate grounds that can be documented before academic relief will be considered. Different regulations apply to term tests, final examinations and late assignments. Please read the instructions carefully.

#### A. GENERAL REGULATIONS & PROCEDURES

1. All first-year students will report to the Undergraduate Services Office by submitting the Academic Consideration Request Form, for all instances.
2. If you are an upper year student and you are missing a test/assignment/lab or examination you will report the absence by submitting Academic Consideration Request Form. Absences worth LESS THAN 10% of your mark, will be processed by your department office. If your course work is worth 10% OR MORE of your final grade, your request will be processed by the Undergraduate Services Office.
3. Check the course outline to see if the instructor has a policy for missed tests, examinations, late assignments or attendance.
4. Documentation must be provided as soon as possible. If no one is available in your department office or the Undergraduate Services Office, leave a message clearly stating your name & student number and reason for your call. The department telephone numbers are given at the end of these instructions.
5. If you decide to write a test or an examination you should be prepared to accept the mark you earn. Rewriting tests or examinations or having the value of a test or examination reweighted on a retroactive basis is not permitted.

#### B. TERM/MIDTERM TESTS

1. If you are in first year and you are unable to write a midterm/term test, contact the Undergraduate Services Office, SEB 2097 PRIOR to the scheduled date of the test.
2. If you are an upper year student and you are unable to write a midterm/term test, inform your instructor PRIOR to the scheduled date of the test and request relief through the Academic Consideration Request Form. If the instructor is not available, leave a message for him/her at the department office. If the test is worth LESS THAN 10% of your mark, your request for relief will be processed by your department office. If the test is worth MORE THAN 10% of your final grade your request for relief will be processed by the Undergraduate Services Office.

3. Be prepared to attach supporting documentation to the Department Chair and/or the Undergraduate Services Office through the online form (see next page for information on documentation).
  
4. Discuss with the instructor if and when the test can be rescheduled. The approval of the Chair or the Undergraduate Services Office is required when rescheduling midterm/term tests.

## C. FINAL EXAMINATIONS

1. If you are unable to write a final examination, contact the Undergraduate Services Office PRIOR TO THE SCHEDULED EXAMINATION TIME to report your absence using the Academic Consideration Request Form and request permission to write a Special Final Examination. If no one is available in the Undergraduate Services Office, leave a message clearly stating your name & student number.
2. Be prepared to provide the Undergraduate Services Office with supporting documentation (see next page for information on documentation) the next day, or as soon as possible (in cases where students are hospitalized). The following circumstances are not considered grounds for missing a final examination or requesting special examinations: common cold, headache, sleeping in, misreading timetable and travel arrangements.
3. In order to receive permission to write a Special Examination, you must obtain the approval of the Chair of the Department and the Associate Dean and in order to apply you must submit an "Application for a Special Exam" form. The Undergraduate Services Office will then notify the course instructor(s) and reschedule the examination on your behalf.

PLEASE NOTE: It is the student's responsibility to check the date, time and location of the Special Examination.

## D. LATE ASSIGNMENTS

1. Advise the instructor if you are having problems completing the assignment on time (prior to the due date of the assignment).
2. Be prepared to submit the Academic Consideration Request Form and provide documentation if requested by the instructor (see reverse side for information on documentation).
3. If you are granted an extension, establish a due date. The approval of the Chair of your Department (or the Assistant Dean, First Year Studies, if you are in first year) is not required if assignments will be completed prior to the last day of classes.
4.
  - i) Extensions beyond the end of classes must have the consent of the instructor, the department Chair and the Associate Dean, Undergraduate Studies. Documentation is mandatory.
  - ii) A Recommendation of Incomplete Form must be filled out indicating the work to be completed and the date by which it is due. This form must be signed by the student, the instructor, the department Chair and the Associate Dean, Undergraduate Studies.

## E. SHORT ABSENCES

If you miss a class due to a minor illness or other problem, check your course outlines for information regarding attendance requirements and make sure you are not missing a test, laboratory or assignment. Cover any readings and arrange to borrow notes from a classmate.

#### F. EXTENDED ABSENCES

If you are absent more than one week or if you get too far behind to catch up, you should consider reducing your workload by dropping one or more courses. (Note drop deadlines listed below). You are strongly encouraged to seek advice from your Academic Counsellor in the Undergraduate Services Office.

#### G. DOCUMENTATION

If you consulted an off-campus doctor or Student Health Services regarding your illness or personal problem, you must provide the doctor with a Student Medical Certificate to complete at the time of your visit and then bring it to the Department (or the Undergraduate Services Office). This note must contain the following information: severity of illness, effect on academic studies and duration of absence. Regular doctor's notes will not be accepted; only the Student Medical Certificate will be accepted.

**In Case of Serious Illness of a Family Member:** Provide a Student Medical Certificate to your family member's physician to complete and bring it to the Department (or the Undergraduate Services Office if you are in first year).

**In Case of a Death:** Obtain a copy of the death certificate or the notice provided by the funeral director's office. You must include your relationship to the deceased and bring it to the Department (or the Undergraduate Services Office if you are in first year).

**For Other Extenuating Circumstances:** If you are not sure what documentation to provide, ask the Departmental Office (or the Undergraduate Services Office if you are in first year) for direction.

**Note:** Forged notes and certificates will be dealt with severely. To submit a forged document is a scholastic offence (see below).

## H. ACADEMIC CONCERNS

1. You need to know if your instructors have a policy on late penalties, missed tests, etc. This information may be included on the course outlines. If not, ask your instructor(s).
2. You should also be aware of attendance requirements in some courses. You can be debarred from writing the final examination if your attendance is not satisfactory.
3. If you are in academic difficulty, check out the minimum requirements for progression in the calendar. If in doubt, see your Academic Counsellor.

Calendar References: Check these regulations in your 2023 Western Academic Calendar available at [www.westerncalendar.uwo.ca](http://www.westerncalendar.uwo.ca).

### Absences Due to Illness:

[https://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_135](https://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_135)

### Academic Accommodations for Students with Disabilities:

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_10](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_10)

### Academic Accommodations for Religious or Holy Days:

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_16](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_16)

### Course Withdrawals:

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=6&SelectedCalendar=Live&ArchiveID=#Page\\_75](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=6&SelectedCalendar=Live&ArchiveID=#Page_75)

### Examinations:

<http://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=5&command=showCategory&SelectedCalendar=Live&ArchiveID=>

### Scheduling of Term Assignments:

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=5&SelectedCalendar=Live&ArchiveID=#SubHeading\\_78](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=5&SelectedCalendar=Live&ArchiveID=#SubHeading_78)

### Scholastic Offences:

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_20](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_20)

Student Medical Certificate:  
<https://www.eng.uwo.ca/files/undergraduate/student-medical-certificate.pdf>

Engineering Academic Regulations:  
[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=4&SelectedCalendar=Live&ArchiveID=#Page\\_86](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=4&SelectedCalendar=Live&ArchiveID=#Page_86)

Note: These instructions apply to all students registered in the Faculty of Engineering regardless of whether the courses are offered by the Faculty of Engineering or other faculties in the University.

Add Deadlines: First term half course (i.e. "A" or "F")  
September 15, 2023  
Full courses and full-year half course (i.e. "E", "Y" or no suffix)  
September 15, 2023  
Second term half course (i.e. "B" or "G")  
January 16, 2024

Drop Deadlines: First term half course without penalty (i.e. "A" or "F")  
November 13, 2023  
Full courses and full-year half courses without penalty (i.e. "E", "Y" or no suffix)  
November 30, 2023  
Second term half or second term full course without penalty (i.e. "B" or "G")  
March 7, 2024

Contact Information:

Undergraduate Services Office: 2130 E-mail: <a href="mailto:engugrad@uwo.ca">engugrad@uwo.ca</a>	SEB 2097 Phone: 519-661-
Chemical & Green Process Engineering: E-mail: <a href="mailto:cbeugrad@uwo.ca">cbeugrad@uwo.ca</a>	TEB 477 Phone: 519-661-2131
Civil Engineering: 2139 E-mail: <a href="mailto:civil@uwo.ca">civil@uwo.ca</a>	SEB 3005 Phone: 519-661-
Computer, Electrical, Mechatronic Systems & Software Engineering 661-3758 E-mail: <a href="mailto:eceugrad@uwo.ca">eceugrad@uwo.ca</a>	TEB 279 Phone: 519-

Integrated Engineering  
E-mail: engceli@uwo.ca

ACEB 2410 Phone: 519-661-6725

Mechanical Engineering:  
4122 E-mail: mmeundergraduate@uwo.ca

SEB 3002 Phone: 519-661-