COMPSCI 2212B 001 FW20 ›
↪ 📖 Syllabus

Syllabus

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Syllabus - Outline	Tue Sep 01, 2020 01:00 AM - Mon Mar 01, 2021 01:00 AM

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**THE UNIVERSITY
OF WESTERN
ONTARIO
DEPARTMENT OF
COMPUTER
SCIENCE**

CS2212B Introduction to Software Engineering

Course Syllabus -- Winter 2021

1. Course Information

Course Information

Course Number and Title: CS2212B – Introduction to Software Engineering

Lectures: Wednesday   10:30 – 11:30   On-line

                                  Friday   10:30 – 12:30   On-line

Instructor's Office Hours:

Kostas Kontogiannis   Office Hours: Tuesday   9:00 – 10:00   On-line via Zoom

Thursday	17:00 – 18:00	(see Zoom link in course's
		Web site for details and IDs)

***TAs Office Hours*:**

TBA	TBA	On-line via Zoom
		(see Zoom link in course's
		Web site for details and IDs)

Prerequisite Requirements

- Computer Science 2210a/b and 2211a/b
- Students are assumed to be familiar with the Java programming language

Note: 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.

Our classes will combine instruction on current technologies, software design and engineering methods with collaborative note development and discussion of course topics.

Copies of lecture notes will be available on the course web site. They are not a substitute for attending lectures.

2. Instructor's Information

Prof. Kostas Kontogiannis, P.Eng.

Email: kostas@csd.uwo.ca

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

Please do not send emails to the personal accounts of the instructor or the TA unless it is an absolutely urgent or personal matter. Please use the forum for any course related questions.

3. Course Syllabus, Schedule, Delivery Mode

The informal approaches that most individual programmers use when writing small programs do not work very well when applied to the development of large pieces of software and team programming situations. Software engineering is a discipline that applies principles of traditional engineering to improve software, as well as its development and maintainability.

In this course, we will examine the stages of the software engineering process, including requirements gathering, specification, design, implementation, and testing. The principles of object--oriented design and analysis and user interface design will be stressed, while a term project completed within a team of 3 students will serve to reinforce concepts learned and give students practical experience developing software in a team environment. UML (Unified Modeling Language), the standard tool for expressing designs in software engineering, will be introduced. All programming for this course will be done in Java.

The following list of topics may be covered, depending on time and the dynamics of the semester.

Software process models	UML Class Diagrams
Cost estimation and risk management	Design Patterns
Agile methodologies	Software Testing methods
PERT and Gantt charts	Software Architecture Styles
Object-Oriented design principles	Source control
User stories	User interface design
UML Use Case Diagrams	
	Build automation

4. Course Material

The textbook related to the material to be presented in class is the following:
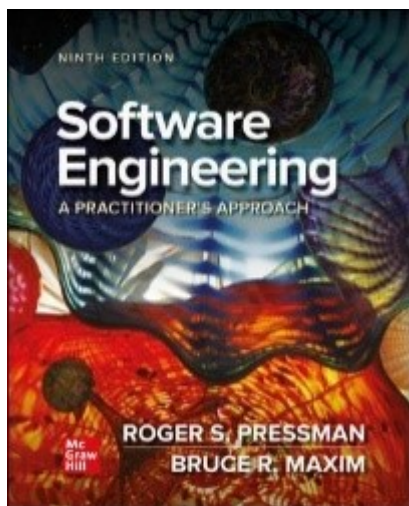
Software Engineering: A Practitioner's Approach

9th Edition

By Roger Pressman and Bruce Maxim

ISBN10: 1259872971

ISBN13: 9781259872976

https://www.mheducation.com/highered/product/1259872971.html

We will be using OWL to host the course content. *Eclipse* (or a similar IDE of your choice) will be used for software development. Depending on schedule and availability, other tools such as *BitBucket* and *Microsoft Teams* will be used for group collaboration and source code version control. Instructions will be provided in the class.

Students should check the course's Web site in OWL (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. Students are responsible for checking OWL on a regular basis.

All course material will be posted to OWL: http://owl.uwo.ca

If students need assistance, 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.

The strategy to study for this course is to read the lecture notes, watch the videos, attend the on-line classes, keep notes in the class, and read the textbook and the supporting material in the hyperlinks posted after each class unit.

Since this course will be delivered in an asynchronous on-line mode, students are required to have a stable internet connection, computer with working microphone, and/or webcam.

In addition to the electronic copy of the book available via the course's Web site in OWL, please note that the Bookstore will offer the following general services for the Fall term.

- Online ordering of physical (paper) books through the Bookstore website. Items can be shipped to students directly (online order at bookstore webpage) if they are learning remotely.
- Students buying books on campus will have the option of some form of curbside pickup
- Obtaining commercial electronic books, to be sold through the Western Bookstore website
- Converting Custom Course Materials (textbooks or lab manuals) to an electronic format. The e-books will be accessible only via the Bookstore's online platform. Students will not be able to download the content for offline access.

If you have any questions or want to place an order, contact Rachel Sandieson, Course Materials Manager (rsandies@uwo.ca). Information on how to access the on-line version of the book will be also posted on OWL.

5. Methods of Evaluation

Individual

-- Midterm	15%	(*Date to be confirmed*)
-- Quizzes	10%	(5 short quizzes) (5% participatory and 5% marked)
-- Final Exam	30%	Scheduled by Registrar

Team Project

-- Requirements Specifications Document Part 1	10%	(February 8)
-- Requirements Specifications Document Part 2	10%	(March 1)
-- Design Specifications Document	10%	(March 22)
-- Code and Presentation	15%	(April 5)

All deliverables are due by 23:55:59 on their specified due dates. Due dates are subject to change.

If, for any reason, the schedule given above cannot be adhered to, the marks will be prorated as follows:

- The individual components are worth a total of 55%. If any individual components must be cancelled, the remaining individual deliverable weights will be prorated to add up to 55%.
- The project components are worth a total of 45%. If any project components must be cancelled, the remaining project deliverable weights will be prorated to add up to 45%.

Each student will receive a mark for the project, which makes up 45% of their final grade in the course.

- Normally, the individual's combined project mark will be computed directly from the team marks for the team tasks. However, the instructors reserve the right to adjust an individual's mark – raising or lowering it – based on project participation, project presentation, meeting minutes, and the TAs' or instructor's knowledge of a student's attendance and participation in the course and/or mastery of the course material.
- During project (code) presentation the examiners (instructor, TAs) will ask questions for any part of the project to any team member, and not limited to the part(s) of the project the individual team member has worked on.
- Each individual must receive a Combined Project Mark of at least 40% (18 out of 45) in order to receive a passing grade in the course.
- Students are expected to complete a reasonable, fair, and equitable portion of their team project. Failing to do so may result in a significant deduction of the final mark allocated to the project at the discretion of the instructor.
- It is the student's responsibility to ensure that he/she is working to a satisfactory level. A student should consult with his/her TA or instructor if concerns or questions arise.

Exams

- We are planning to use a remote proctoring service such as Proctortrack for conducting tests and examinations (midterm, final).
- 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. More information about this remote proctoring service is available in the Online Proctoring Guidelines at the following link:

  https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf
  Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. Information about the technical requirements are available at the following link: **https://www.proctortrack.com/tech-requirements/**

- If we have to revert using Zoom for exam invigilation in this course, you will be required to keep your camera on for the entire session, hold up your student card for identification purposes, and share your screen with the invigilator if asked to do so at any time during the exam. The exam session using Zoom will not be recorded*. (*Please note that Zoom servers are located outside Canada. If you would prefer to use only your first name or a nickname to login to Zoom, please provide this information to the instructor in advance of the test or examination).

- Completion of this course will require you to have a reliable internet connection and a device that meets the system and technical requirements for both Zoom and Proctortrack. Information about the system and technical requirements are available at the following links:

https://www.proctortrack.com/tech-requirements/
https://support.zoom.us/hc/en-us

- There will be a one and a half hour long on-line midterm exam in this course worth of 15%. The date will be confirmed and posted on the courses Website on OWL. Details on how the final exam will be conducted on-line will also be posted on OWL.
- There will be five, 30 minutes long, quizzes posted on OWL. Each quiz will have 5 multiple choice questions. The quizzes can be performed any time within 24 hours of time that they been posted. The duration of each quiz is fixed to 30 minutes. **The dates of the quizzes will be 28/1, 11/2, 25/2, 11/3, and 25/3.** The quizzes are worth 2% each. From this 2%, 1% comes as a participatory mark (i.e. you obtain it by just submitting the quiz), and 1% of the mark comes by marking your answer. Quizzes will comprise multiple choice responses. Answering questions in each quiz may require material taught up to the time the quiz is held.
- The quizzes will utilize the OWL system and the students are required to have Internet access and be able to login to the OWL system. The students can submit their quiz any time within a 24 hour period form the tine the quiz is posted.
- The quizzes will require the use of electronic devices such as a laptop, tablet, or smart phone, with internet connectivity and web browsing capability.
- A 3-hour, closed-book final exam will be held at the end of the course, during the final exam period. The final exam will be worth 30% of the total mark. Details on how the final exam will be conducted on-line will be posted on OWL. The exam will be on-line and remotely proctored using Proctortrack or Zoom. Please see related statements on the use of Proctortrack and Zoom for on-line proctoring in the bullet points above and in the **Academic Policies** section below.
- Each student must achieve a grade of at least 40% on the final exam in order to be given a passing grade in the course.
- Students must bring their UWO identification to the exam.
- The final exams are scheduled by the Office of the Registrar during the final exam period. Details will be provided when they are available. Students are advised not to make travel plans until they have consulted the final exam schedule.
- As an important note, submissions will be subject of a similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Conduct

The teaching staff reserve the right to deduct marks from the students course grade based on misuse or inappropriate conduct of any collaborative tools used in class. The tools and the forums are for collaboration only. Personal or judgmental statements targeting individuals are not acceptable. It is your responsibility to protect any private information of yours in these collaborative environments.

Statements concerning Online Etiquette

Components of this course will involve online interactions. To ensure the best experience for both you and your classmates, please honour the following rules of etiquette:

- "Arrive" to class on time
- Use your computer and/or laptop if possible (as opposed to a cell phone or tablet)
- ensure that you are in a private location to protect the confidentiality of discussions in the event that a class discussion deals with sensitive or personal material
- To minimize background noise, mute your microphone for the entire class until you are invited to speak, unless directed otherwise

- In order to give us optimum bandwidth and web quality, turn off your video camera for the entire class unless you are invited to speak

- Please be prepared to turn your video camera off at the instructor's request if the internet connection becomes unstable

- Unless invited by your instructor, do not share your screen in the meeting

The course instructor will act as moderator for the class and will deal with any questions from participants. To participate please consider the following:

- If you wish to speak, use the "raise hand" function and wait for the instructor to acknowledge you before beginning your comment or question.

- Please remember to unmute your microphone and turn on your video camera before speaking.

- Self-identify when speaking.

- Please remember to mute your mic and turn off your video camera after speaking (unless directed otherwise).

General considerations of "netiquette":

- Keep in mind the different cultural and linguistic backgrounds of the students in the course.

- Be courteous toward the instructor, your colleagues, and authors whose work you are discussing.

- Be respectful of the diversity of viewpoints that you will encounter in the class and in your readings. The exchange of diverse ideas and opinions is part of the scholarly environment. "Flaming" is never appropriate.

- Be professional and scholarly in all online postings. Use proper grammar and spelling. Cite the ideas of others appropriately.

Note that disruptive behaviour of any type during online classes, including inappropriate use of the chat function, is unacceptable. Students found guilty of Zoom-bombing a class or of other serious online offenses may be subject to disciplinary measures under the Code of Student Conduct.

Team Project

- Students are required to work cooperatively in teams to design and implement their project.
- The instructors will decide on the composition of the teams. The instructors' decisions are final. The instructors will attempt to make sure that each team has 3 members.
- Individual students may submit requests to be taken out of the team to which they were initially assigned,   if such requests are received by **Monday, January 25,** and a good reason (such as a prior conflict with one of the team members) is given. Individual students may not specify to which team they want to be assigned instead; the instructors will choose an appropriate team.
- Students are required to keep in contact and collaborate closely with their teammates.
- If specified by the project description, the project code must run on the specified environment for acceptance testing purposes, but team members can develop it on their own systems. The project code must be implemented in the Java programming language.
- **Project demonstrations will take place between April 8 – April 12.** This involves the instructor and TAs running and testing each team's finished implementation of the team project, as well as asking questions about the process and design of the project. All team members must be present for the acceptance testing.
- Late project will be accepted for up to two days after the due date, with weekends counting as a single day. The assignments are due on Monday 11:55 pm. Submissions by Tuesday 11:55

pm will incur a penalty of 8% and submission later than Tuesday 11:55 pm and before Wednesday 11:55 pm will incur a penalty of 20% in total. No submissions are accepted after Wednesday 11:55 pm.
- No late submissions for quizzes, midterm, and final are accepted.

Meetings and Minutes

- During the course of the project, teams are required to have weekly meetings to discuss progress and plan for the future.
- Each team is required to write minutes of each meeting, listing the attendance, what the topics of discussion in the meeting were, any decisions that were made, and which team members were assigned which tasks. These minutes must be submitted with the project report in each deliverable and will provide input to be used for the overall assessment of the project.
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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 Academic Accommodation for Students with Disabilities policy can be found at: https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic Accommodation_disabilities.pdf

Religious Accommodation

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the Western Multicultural Calendar: https://multiculturalcalendar.com/ecal/index.php?s=c-univwo

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see http://www.registrar.uwo.ca/examinations/exam_schedule.html).

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 Academic Calendar for details (under Special Examinations).

7. Academic Policies

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

In accordance with policy, http://www.uwo.ca/its/identity/activatenonstudent.html, 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.

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation, or the participant has the prior written permission of the instructor.

The midterm and the final are considered as "closed book" exams, and therefore the use of any data storage capable electronic device for the purposes of retrieving material related to the examination questions is not be permitted during the midterm and the final examination.

Policy on Academic Consideration for Student Absence

Students will have up to two (2) opportunities during the regular academic year to use an on-line portal to self-report an absence during the semester, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student's final grade. Students are expected to contact their instructors within 24 hours of the end of the period of the self-reported absence, unless noted on the syllabus. Students are not able to use the self-reporting option in the following circumstances:

- for exams scheduled by the Office of the Registrar (e.g., December and April exams)
- absence of a duration greater than 48 hours,
- assessments worth more than 30% of the student's final grade,
- if a student has already used the self-reporting portal twice during the academic year

If the conditions for a Self-Reported Absence are not met, students will need to provide a Student Medical Certificate if the absence is medical, or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty academic counselling office to obtain more information about the relevant documentation.

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 policy on Academic Consideration for Student Absences, see:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf

and for the Student Medical Certificate (SMC), see:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

Examination Conflicts

A student with examinations having flexible submission times (e.g., where one or more examination is a take-home examination) cannot request alternative arrangements unless a conflict cannot be avoided by rescheduling writing the exam to a different time within the window specified by the instructor. This applies to direct conflicts as well as "heavy load" conflicts (e.g., three exams within a 23-hour period). The student should discuss any concerns about a potential conflict and/or request accommodation with their academic counselling unit prior to the deadline to drop a course without academic penalty.

In the case of online examinations, an "Examination Conflict Room," which may be assigned when a student is scheduled to write two proctored exams concurrently, will be interpreted as arrangements for continuous proctoring.

Special Exam Policy

The policy at http://www.uwo.ca/univsec/pdf/academic_policies/exam/definitions.pdf specifies that make-up examinations for December exams will be held on the first Thursday in January following the first day of classes, and make-up exams for April exams will be held on the second Thursday in May.

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). Another service which can be in use is MOSS.

Tests and examinations in this course will be conducted using the remote proctoring service, such as Proctortrack. 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**. More information about this remote proctoring service is available in the Online Proctoring Guidelines at the following link: https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf

Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. Information about the technical requirements are available at the following link: https://www.proctortrack.com/tech-requirements/

Completion of this course will require you to have a reliable internet connection and a device that meets the system requirements for Zoom. Information about the system requirements are available at the following link: https://support.zoom.us/hc/en-us

* Please note that Zoom servers are located outside Canada. If you would prefer to use only your first name or a nickname to login to Zoom, please provide this information to the instructor in advance of the test or examination.

If we have to revert using Zoom for exam invigilation in this course, you will be required to keep your camera on for the entire session, hold up your student card for identification purposes, and share your screen with the invigilator if asked to do so at any time during the exam. The exam session using Zoom will not be recorded.*

Proctortrack will require you to provide **personal** information (including some biometric data). The session will be **recorded**. By taking this course, you are consenting to the use of this software. More information about remote proctoring is available in the Online Proctoring Guidelines at the following link: https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf

Completion of this course will require you to have a reliable internet connection and a device that meets the system and technical requirements for both Zoom and Proctortrack. Information about the system and technical requirements are available at the following links: https://www.proctortrack.com/tech-requirements/ and https://support.zoom.us/hc/en-us

* Please note that Zoom servers are located outside Canada. If you would prefer to use only your first name or a nickname to login to Zoom, please provide this information to the instructor in advance of the test or examination.

Email Contact

We occasionally need to send email messages to the class or to students individually. Email is sent to your UWO email address as assigned to you by ITS (Information Technology Services). It is your responsibility to read this email frequently and regularly. You may wish to have this email forwarded to an alternative email address. See the ITS web site for directions on forwarding email.

You should note that email at ITS and other email providers may have quotas or limits on the amount of space they dedicate to each account. Unchecked email may accumulate beyond those limits and you may be unable to retrieve important messages from your instructors.

Email contact to the instructor and/or teaching assistants is discouraged; instead, you should ask your questions by posting them on the forum section at OWL's course site. Email containing questions about course material and/or assignments will not be answered. However, if you have a

special situation that you need to discuss with the teaching staff, please feel free to email from your UWO account to the instructor and/or the TA.

Accessibility Statement
Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661--2111 x82147 for any specific question regarding an accommodation.

The policy on Accommodation for Students with Disabilities can be found here:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf

Tutoring
The role of tutoring is to help students understand course material. Tutors should not write part or all of an assignment for the students who hire them. Having employed the same tutor as another student is not a legitimate defense against an accusation of collusion, should two students hand in assignments judged similar beyond the possibility of coincidence.

Ethical Conduct
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 address:
w e b s i t e :
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

All assignments must be completed individually. You can discuss approaches to problems with other students; however, the work handed in must be your individual effort.

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 serious and major academic offence (see Scholastic Offence Policy in the Western Academic Calendar). Assignments that are judged to be the result of academic dishonesty will, for the student's first offence, be given a mark of zero with an additional penalty equal to the weight of the assignment. Students are responsible for reading and respecting the Computer Science Department's policy on Scholastic Offences and Rules of Ethical Conduct.

The University of Western Ontario uses software for plagiarism checking. Students will be required to submit their programs in electronic form for plagiarism checking.

8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on add/drop 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 Student Accessibility Services (SAS) 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/mental_health) 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

This course is supported by the Science Student Donation Fund. If you are a BSc or BMSc student registered in the Faculty of Science or Schulich School of Medicine and Dentistry, you pay the Science Student Donation Fee. This fee contributes to the Science Student Donation Fund, which is administered by the Science Students' Council (SSC). One or more grants from the Fund have allowed for the purchase of equipment integral to teaching this course. You may opt out of the Fee by the end of September of each academic year by completing the online form linked from the Faculty of Science's Academic Counselling site. For further information on the process of awarding grants from the Fund or how these grants have benefitted undergraduate education in this course, consult the chair of the department or email the Science Students' Council at ssc@uwo.ca.

- [Gateway](#)
- [Help & Support](#)
- [Western University](#)

OWL is the learning management system of Western University. It is a customized version of Sakai.

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OWL - OWL - Sakai 11.3-owl6 - Server azuki19