Western Science

Department of Computer Science

CS2212B Course Outline
Introduction to Software Engineering
Winter 2026

1. Course Information

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. We will also cover the practicalities of software engineering, covering a number of the key tools and technologies leveraged in successful endeavours. A large group project, completed by teams of students, will serve to reinforce concepts learned and give students practical experience developing software in a realistic work environment.

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

- Overview of software engineering
- Software processes and workflows
- Agile software development
- Software requirements gathering and modelling
- Software design concepts
- Implementation of software
- Testing and software quality management
- Managing software projects
- Enterprise-scale software and collaboration tools

Prerequisite Requirements

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

Antirequisites

- Software Engineering 2203A/B

Unless you have either the requisites for this course or written special permission from your Dean's Designate (Department/Program Counsellors and Science Academic Advisors) 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.

2. Instructor Information

Instructor:	Dr. Daniel Servos
E-Mail:	dservos5@uwo.ca *(please include CS2212 in the subject of all e-mails)*
Office:	[redacted]
Office Hours:	By Appointment Book via: http://danielservos.ca/apt
Website:	http://danielservos.ca

2.1. Office Hours

Instructor office hours must be booked 12 hours in advance using the above link. When booking an office hour, you should include a description of the topic you wish to discuss and any relevant files including a copy of any assignment, project, document, etc. that you wish to ask questions about.

2.2. E-Mail Contact

Students must use their Western (@uwo.ca) email addresses when contacting their instructor and include "CS2212" in the subject line of their e-mail. Failing to do this may result in your e-mail being marked as spam and not delivered properly. Every attempt will be made to answer all e-mails within two business days (non holiday Mondays to Fridays). Please keep this in mind when deadlines are approaching and plan to start work early enough to receive a reply to any questions.

E-mails regarding personal matters and accommodations should be sent directly to the course instructor (dservos5@uwo.ca) and not a teaching assistant.

E-mails regarding assignment marking and regrading should first be addressed to the TA who marked your assignment and only to the course instructor if your discussion with the TA was not satisfactory.

General questions should be posted to the OWL Brightspace course forums.

3. Course Schedule & Delivery Mode

The format of this course will be **flipped** with both in-person lectures/tutorials each week and asynchronous online videos to view before class. Readings, videos, and other online resources will be posted weekly to the OWL course site. To be successful in this course, you will nee to both attend the in-person lectures and complete the assigned videos/readings.

Lecture Hours

- **Tuesday*:** 10:30AM to 12:30PM [redacted]
- **Friday+:** 11:30AM to 12:30 PM [redacted]

** Attendance and active participation in the Tuesday lecture is required and part of your participation grade.*

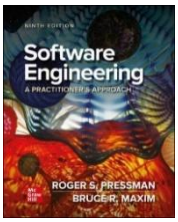
+ The Friday lecture time will be used for teams to work on the term long group project. Students are expected to meet each week wither their assigned team each Friday (does not have to be in [redacted]). No lecture will be held during the Friday lecture hour time.

Students are expected to bring blank paper and writing utensils to class**. Bringing a laptop is also highly encouraged** to enable you to follow along with examples and tutorials. If you do not have a laptop, please sit with someone from your group that has one so you can participate fully.

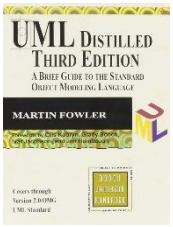
4. Course Materials

4.1. Recommended Textbooks

Readings from the following textbooks will be assigned each week. They are available for purchase from the university bookstore and other sources as both a physical book and eTextbook:



Software Engineering: A Practitioner's Approach
(Strongly Recommended)
9th Edition
By Roger Pressman and Bruce Maxim
ISBN10: 1259872971
ISBN13: 9781259872976
Price: $112.15 (printed) or $67.75 (180-day rental)
https://www mheducation.com/highered/product/1259872971.html



UML Distilled: A Brief Guide to the Standard Object Modeling Language
(Strongly Recommended)
3rd Edition
By Martin Fowler
ISBN: 978-0321193681
Price: $61.99
https://martinfowler.com/books/uml.html

Additional free online references and suggested readings may also be provided throughout the course as the project requires them. Please check the course OWL website weekly for updates and more information.

4.2. How the Textbooks will be Used

Readings from these texts will be assigned weekly on OWL. Typically, two chapters a week will be assigned from Software Engineering: A Practitioner's Approach and only occasionally from UML Distilled.

While **nothing from the textbooks will be directly graded**, they are **strongly recommended** as supplements to the lecture videos and provided course content. The course is designed around both completing the readings and watching the provided lecture videos each week.

We will **not** be using any online components of the text. Purchasing a used copy of either textbook is acceptable, but it is recommended that you find a copy that has the same edition number.

The UML Distilled text will be an important resource for you and your team when working on the group project and is **very strongly recommended**, however, this information can also be found for free via online resources and as such is not listed as required. Once teams are formed you may want to ensure at least one team member has a copy of this text.

Note that UML Distilled is also used in some future 3rd year computer science courses such as CS3307, so purchasing it now is recommended.

4.3. Required Subscription (Kritik360)

All students taking CS2212 are required to have a subscription to Kritik360 (www.kritik.io/kritik360), a peer-to-peer learning and evaluation platform, and agree to their terms of service (https://www.kritik.io/policy/terms-of-service) and privacy policy (https://www.kritik.io/policy/privacy-policy). This is required for both submitting assignments and completing your peer evaluations of your team and other team's work. The feedback you submit and receive on Kritik360 will be part of your final grade. The cost of the subscription is $22.

An email invitation will be sent to your Western email account that contains information on how to register for a Kritik360 account and enroll in the course. This email will be sent after add/drop date on January 13th. You can not purchase or setup your subscription until you receive this email invitation.

Note that the following information will be shared with Kritik360: your name, your Western email address, your group membership (for the team project), and the fact that you are registered in this course during this term. You may optional provide Kritik360 with your phone number to provide SMS reminders of due dates, but this is not required or recommend by the course instructor. It is also recommended that you do not share personal or identifying information in the feedback you provide to other students via the Kritik360 platform to keep your identity anonymous from other students.

Instructors and teaching assistants will have access to the assignments, evaluations, and feedback you submit/receive on Kritik360.

4.4. Other Technology Requirements:

- Access to a modern personal computer or laptop running Windows or macOS.
- A webcam (can be built into a laptop).
- A microphone (can be built into a laptop).
- A reliable internet connection.
- A laptop, smartphone, or tablet you can take to class that can access Western's Wi-Fi network and can open sites via a web browser.
- Other free or provided software including Java, JUnit, git, Zoom, a web browser, a UML diagram editor (e.g. draw.io), and a tool for mocking up UI wireframes.

4.5. OWL Course Site

The course website is located within OWL Brightspace. To access the website, navigate to https://westernu.brightspace.com and login with your Western University account (user id and password). Course content, including assigned readings, notes, assignments, and class information, will be posted to this site each week. **You are responsible for checking the course site regularly** *(at least once a week including* ***both the weekly unit pages and announcements****)*. This is the primary method by which information will be disseminated to all students in the class.

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

5. Methods of Evaluation

Element	Weight
Group Project	40%
Participation	10%
Group Peer Evaluations	5%
Midterms *(x2)* **or** Final Exam	45%

5.1. Essential Requirements

To be eligible to obtain a passing mark (50% or over) in the course you must satisfy ALL of the following requirements:

1. You must obtain a weighted Midterm/Final Exam average of **at least 40%.** This average is weighted by the worth of each test in terms of your final grade.
2. You must attend and actively participate in the acceptance testing meeting with your team and TA at the end of the term *(unless a documented consideration request is approved for your absence).*
3. You must attend and be an **active participant** in the group project which entails **all** of the following:
    a. Obtain a **grade of 40% or over** on your team's peer evaluation of your performance in your team project.
    b. Contribute in some meaningful way to each milestone in the group project (as shown by the edit, commit, and issue history on GitLab). You must use your own account to make edits and commits to GitLab to create this history.
    c. Regularly attending **both** your **team's weekly meetings,** and the **biweekly TA check in** with your team's assigned TA. You must **attend at least half of each type of meeting** to pass the course.

If you fail to satisfy any of these criteria, your maximum final grade for this course will be **capped at 45%.**

5.2. Rounding & Curving of Grades

Final grades will be rounded to a whole number using the common Half Round Up method. That is grades ending in a fractional part of 0.5 or higher are rounded up to the next whole number, and grades ending in a fractional part less than 0.5 will be rounded down to the pervious whole number.

To ensure a consistent and fair grading scheme, project, quiz, midterm, and exam grades maybe be normalized or curved to ensure consistency in marking between different TA graders or peer evaluators.

6. Group Project

All students are required to be an active participant in a term long group project that will involve the specification, design, and implementation of a reasonably large-scale software system.

Details on the overall topic of the project will be posted to OWL by January 18th, with more details on each project milestone posted closer to the due dates in table below *(these dates are **tentative** and subject to change)*. Any changes, updates, and clarifications to these descriptions and dates will be posted on the OWL website. **The due dates on OWL should be considered the official due dates.**

6.1. Project Milestones *(dates are tentative)*

The following table lists the milestones for the group project. For each milestone your group must make one submission (as a group) to Kritik360 by the "Groups Submission Due Date". Three days after the group submission date, each individual student must then complete a peer assessment of one other group's work by the "Kritk360 Peer Assessment Due Date".

Milestones	**Weight (*of your final grade)***	**Groups Submission Due Date *(by 11:59PM) (tentative)***	**Kritk360 Peer Assessment Due Date *(by 11:59PM (tentative)***
Planning Documentation *(evaluated using Kritik360)*	4%	Friday January 23rd	Friday January 30th
Requirements Documentation *(evaluated using Kritik360)*	8%	Friday February 6th	Friday February 13th
Design Documentation *(evaluated using Kritik360)*	9%	Friday March 6th	Friday March 13th
Testing Documentation & Project Demo Video *(evaluated using Kritik360)*	9%	Thursday April 2nd	Thursday April 9th
Final Implementation & Delivery *(evaluated by TA)*	10%	Thursday April 2nd	N/A

All dates listed above are tentative and subject to change.

The project components are worth 40% of the overall mark for the course. If a component must be cancelled for the whole class for any reason, the remaining project component weights will be pro-rated to add up to 40%.

6.2. Evaluation of Project Milestones

Each project milestone (except for final implementation and delivery) will be evaluated through peer assessments using the Kritik360 platform. This will happen in three stages for each milestone:

- **Stage 1:** Groups submit a copy of their milestone via Kritik360 by the *"Group Submission Due Date"*, all images, PDFs, diagrams, videos, files, etc. must be included in this submission. Peer evaluators will not have access to your GitLab project or local files.

- **Stage 2:** Three days after the *"Group Submission Due Date"* each individual student (not as a group) will evaluate the work of another team via the Kritik360 platform. This evaluation must be completed by the *"Kritk360 Peer Assessment Due Date"*. This is an individual submission.
- **Stage 3:** Within **three days** after the *"Kritk360 Peer Assessment Due Date"* you must evaluate the quality of feedback you received from another team. For example, if the peer assessment was due on March 13th, you would need to give your evaluation of the feedback by March 16th at 11:59PM.

Your individual grade on a given milestone (except for final implementation and delivery) will be calculated using the following weightings:

- 80% based on the peer evaluation of your group's works.
- 15% based on the quality of the peer evaluation you completed of another groups work.
- 5% for evaluating the feedback your group was given.

6.3. Appealing a Milestone Grade

If you feel your work was unfairly evaluated by a peer evaluator or your assigned teaching assistant, you must appeal the grade within 1 week of the grade being returned to you. To appeal a grade you must follow these steps in order:

1. Contact the teaching assistant assigned to your team via their email and explain in detail why you feel your work was incorrectly evaluated. Be specific and provide justifications for why the evaluation is incorrect or unfair.
2. If your teaching assistant agrees with your appeal, they can adjust the grade of a peer evaluator or their own grade.
3. If you disagree with your teaching assistant's determination or they fail to respond in one week, you may escalate your appeal to the course instructor by emailing them. In your email, please forward any communications with your teaching assistant related to the appeal and include detailed justification of why you feel your teaching assistant's assessment was incorrect.

Appeals made after the 1-week deadline will not be considered. Any appeal that fails to include the required justification will not be considered (e.g. you can not ask for a milestone to be regraded without an explanation as to why the initial evaluation was incorrect).

6.4. Late Policy for Milestones

- It is expected that groups budget enough time to properly submit their project components and allow for any unforeseen technological issues. Groups are expected to regularly back up their work and submit well before any deadline.
- **The late penalty for all group work components is a zero grade on the component.** However, each team will be given **6 late coupons** they can use to add a no late penalty period of

24 hours per ticket (up to a **maximum of 3 tickets per component**) on the group submission (stage 1).

- Late coupons **cannot** be used on individual components (i.e. peer reviews, Kritik360 peer assessments, quizzes, exams, etc.) or Acceptance Testing.
- All of a team's late coupons must be used before any consideration requests or extenuating circumstances are considered.
- No action is required by a team to use a late coupon. Simply submit late, and the correct number of late coupons will be used. If insufficient late coupons remain for the number of days late or the component is more than 3 days late, a zero grade will be given.
- It is the responsibility of the team to keep track of how many late coupons they have remaining. An estimate of the number of late coupons your team has remaining will be kept in OWL's gradebook, but this will not be updated in real time (typically this will only be updated manually after a milestone is marked).
- The late penalty for the peer assessment component (stage 2) or the evaluation of the quality of feedback you received (stage 3) is simply a zero grade if you miss that deadline.

6.5. Rules for Milestone Work and Submissions

- All milestones must be type-written for legibility and digitally created (not scans or photos of written work) to facilitate electronic submission. If components require the creation of diagrams or illustrations, these too must be done electronically. Appropriate tools will be discussed in class and in the descriptions of the components.
- All digital submissions (including diagrams) must be legible and written in English. Any submissions that cannot be understood by the marker (due to spelling, grammar, language used, poor image resolution, etc.) will be given a zero grade. It is the student's responsibility to ensure all diagrams are legible, not cut off, and have a reasonable resolution.
- All documentation and code must be created collaboratively and developed progressively using the GitLab project site provided to your team. GitLab creates a history of your contributions and failing to use GitLab or use your own account on GitLab may result in no evidence of your contributions to the groups work (this is important for passing the essential requirements in section 5.1).
- You are required to submit each component electronically through Kritik360 **in addition to** retaining a copy on GitLab. If final submissions are too large for a Kritik360 submission, alternate arrangements must be made with the course instructor before the due date. All work products (text, diagrams, code, videos, etc.) must be included in the Kritik360 submission. Peer evaluators will be unable to access your GitLab project or links you provide. **Anything that is missing from the Kritik360 submission will be given a zero grade.**
- **Milestones are expected to be individual efforts (where individual could also mean designated group in the case of a group project such as this).** Any code or content that is borrowed from an existing source, book, course resource, generated by a tool, or created by a person not in the group must be clearly identified as such in the appropriate documentation; otherwise, this may constitute a plagiarism offence. This includes any code created by AI tools such as ChatGPT, Copilot, Claude, Gemini, or Code Autopilot as well as any other tool that generates code, text. or diagrams.

- While discussion about the project is encouraged between groups, directly using code or copying from another group (including groups from past terms) is strictly prohibited and a scholastic offence for all groups involved. Groups should not share any work products directly with other groups.
- Using code or content you have previously created (e.g. for past courses or projects) is not allowed without written permission from the course instructor. This includes any work created for this course in past terms (if you are retaking it).
- Borrowing a large amount of code or content from outside sources (even if it is properly identified) will lead to a reduced grade. You will only be granted marks on content your team writes and implements. If you have any doubt about how much is too much, please ask the course instructor for guidance.

6.6. Formation of Your Team

- You will be given the opportunity to form your own teams of 4 or 5. The deadline for doing so is January 14th. After this date the instructors will finalize the composition of the teams. Students who are not on a team will be placed on a team by the instructor. The instructor will attempt to make sure that each team has at least 4 members and no more than 5 members.
- If a team has less than 5 members, the instructor may add additional team members at their discretion up until January 23rd. After January 23rd the teams will be finalized.
- All teams with 4 or 5 members will be assessed the same regardless of the number of members. Teams that drop to less than 4 members (e.g. due to a student dropping the course) should contact the instructor as soon as possible for other arrangements to be made (it is the team's responsibility to do this in a timely manner).
- Individual students may submit a request to be taken out of the team to which they were assigned for a **good reason** (such as a prior conflict with one of the team members). Such requests must be made to the instructor before January 23rd and detail the good reason. **No changes are allowed in team composition after January 23rd.**

6.7. Weekly Team Meetings (team members only)

- Students are required to keep in contact and collaborate closely with their teammates through weekly meetings scheduled and organized by the team **starting on January 19th.**
- Weekly meetings may occur in-person or virtually online (e.g. using Zoom or MS Teams). **Online meetings cannot be done solely through e-mail or a text/audio only medium and require that all members have their webcam on during the meeting.**
- Weekly meetings should be **at least** 1 hour long, and it is highly recommended that you use some of this time to work on project deliverables together collaboratively (e.g. utilizing pair-programming). The Friday lecture time is provided as free time that all team members must have available.
- **Each team is required to write minutes of each team meeting**, listing date, time, attendance, what the topics of discussion in the meeting were, any decisions that were made, and which team members were assigned which tasks.

- A weekly meeting is not required during reading week or after the acceptance testing has been completed.
- Weekly meetings cannot be held on holidays recognized by Western University or reading week unless all team members agree to meet on these dates.
- All team members are expected to attend these meetings and teams are expected to schedule meetings during times when all members can attend. Should teams be unable to find a common time/day of week/location, they must use the Friday lecture time and room.
- Failing to hold or properly document these meetings may impact the team's project grade or result in team members being unable to fulfill the essential requirements given in section 5.1.

6.8. Biweekly TA Check In (with your team members and TA)

- Teams are required to meet biweekly (every other week) with their team's assigned TA to keep them apprised of the progress of the project, any concerns they may have, or issues the team may be facing. These are different from the Weekly Team Meetings.
- The week a team meets with their TA is determined by the team's assigned number. Even teams will meet on even weeks and odd teams on odd weeks (see the meeting schedule in the next section for week numbers and details).
- **It is the team's responsibility to work with their assigned TA to arrange a day of the week and time for these meetings that works for all members and the TA.** Failure to follow up or respond to the TA is not grounds for missing these meetings. Failing to let the TA know that time does not work for you is not grounds for missing a meeting.
- If your team cannot come to an agreement on when to meet with your assigned TA, you **must** let the instructor know **before January 19th.**
- These meetings should be **at <u>most</u>** 20 minutes long.
- Teams must come prepared to each meeting and be able to present what progress has been made since the last meeting, any issues blocking their progress, and their plans for the upcoming week.
- All team members are expected to attend these meetings and be active participants. Failing to attend or be an active participant may result in failing this course (see the essential requirements in Section 5.1).

6.9. TA Check in Schedule

- **Week 1 (Jan 5 - 11):** No meeting this week.
- **Week 2 (Jan 12 - 18):** No meeting this week.
- **Week 3 (Jan 19 - 25):** Odd numbered team meet with TA
- **Week 4 (Jan 26 – Feb 1):** Even numbered team meet with TA
- **Week 5 (Feb 2 - 8):** Odd numbered team meet with TA
- **Week 6 (Feb 9 - 15):** Even numbered team meet with TA
- **Reading Week (Feb 16 – 22):** No meetings this week
- **Week 7 (Feb 23 – Mar 1):** Odd numbered team meet with TA

- **Week 8 (Mar 2 - 8):** Even numbered team meet with TA
- **Week 9 (Mar 9 - 15):** Odd numbered team meet with TA
- **Week 10 (Mar 16 - 22):** Even numbered team meet with TA
- **Week 11 (Mar 23 - 29):** No meetings this week
- **Week 12 (Mar 30 – Apr 5):** No meetings this week
- **Week 13 (Apr 6 – Apr 9)** Acceptance testing (all teams meet with TA)

6.10. Acceptance Testing

- **Acceptance Testing will take place between April 6th and April 9th.** The exact date and time of acceptance testing must be arranged with your assigned TA closer to the date.
- This involves meeting with your team's TA one last time for acceptance testing where your team will demonstrate your software, show how it fulfills all requirements, and answer any questions about the process and design of their project. **All team members must be present for acceptance testing.**
- Teams are responsible for working with their TA to schedule a date/time that works for all team members and their assigned TA. **No class will be held this week to give times when all students should be available.**

7. Group Peer Evaluations

At two times during the course, you will be asked to provide peer evaluations of your team members. This will occur at approximately halfway through the course and at the end of the semester as shown in the following table.

Group Peer Evaluation	**Weight** ***(of your final grade)***	**Individual Submission Due Date** ***(by 11:59PM) (tentative)***	**Kritk360 Peer Evaluation Due Date** ***(by 11:59PM (tentative)***
Midway Peer Evaluation *(evaluated using Kritik360)*	1.5%	Friday February 13th	Monday February 23rd
Final Peer Evaluation *(evaluated using Kritik360)*	3.5%	Thursday April 2nd	Thursday April 9th

Each peer evaluation will happen in three stages:

- **Stage 1:** You must make a submission to Kritik360 by the *"Individual Submission Due Date"* that describes your contributions to the group and a self-reflection on your work to date.
- **Stage 2:** Three days after the *"Individual Submission Due Date"* you will evaluate the work of your team members to date via Kritik360. This must be completed before the *"Kritk360 Peer Evaluation Due Date"*.
- **Stage 3:** Within **three days** after the *"Individual Submission Due Date"* you must evaluate the quality of feedback you received from your team members. For example, if the peer

assessment was due on February 23rd, you would need to give your evaluation of the feedback by February 26th at 11:59PM.

Your grade on a given peer evaluation will be calculated using the following weightings:

- 80% based on the peer evaluation of your work to date by the group.
- 15% based on the quality of the peer evaluations you completed of your team members.
- 5% for evaluating the feedback your were given by your team members.

The late penalty for the individual submission due date (stage 1) is 10% for 1 day, 25% for 2 days, and 40% for three days late. A zero grade will be given after 3 days. Failure to complete the peer evaluation (stage 2) or evaluation of feedback (stage 3) components by the given dates will result in a zero on that part of the peer evaluation.

8. Midterms OR Final Exam

8.1. Test options

You are given the options of 1) writing two midterms, 2) writing a final exam, or 3) some combination of both to makeup your test grade (worth 45% of your final grade). The following rules apply to this system:

- **If you only write two midterms:** your test grade will be equal to your grade on the midterm exams weighed evenly (both midterms are worth 22.5% of your final grade each).
- **If you only write the final exam:** your test grade will be equal to your grade on the final exam (worth 45% of your final grade).
- **If you write both midterms and the final exam:** your test grade will be equal to either the grade you obtained on the final exam or your grade on the midterm exams weighted evenly (whichever is higher).
- **If you write only one midterm and the final exam:** your test grade will be weighted such that the one midterm and final exam have an equal weight (both 22.5% of your final grade) or will be based solely on your final exam grade (whichever is higher).
- **No makeup will be offered for the midterm exams.** If you miss a midterm exam, you must write the final exam to make up that part of your test grade.
- **All exams are closed book and notes.** No electronics of any kind (including cell phones, smart watches, smart glasses, calculator, etc.) are allowed during the final exam.
- **Midterms will be 2 hours in length and the final exam 3 hours.** The format and content covered on each will be announced before the exam but may include any content covered to date in the course. This may include content from lectures, online videos, in-class activities, and the group project.

8.2. Tentative Exam Schedule

Exam	Date
Midterm 1	Saturday February 7th
Midterm 2	Friday March 20th
Final Exam	Final Exam Period *(TBA)*

The time and location of the midterm exams will be announced closer to the exam dates. The final exam will be held during the winter final exam period as scheduled by the Office of the Registrar.

9. Participation

As Computer Science is a highly collaborative field, it is important to develop the skills and tools you need to work with others on complex programming and technical problems. For this reason, CS2212 in-class lectures makes use of active learning and group work activities. It is expected that you will be an active participant in all course activities and come prepared by completing the required readings and videos before class each week.

Participation will be tracked using "participation points" that are awarded for different activities that demonstrate engagement and participation in the course, aiding other students, completing in-class activities, answer questions in-class, or making meaningful contributions on the course forums.
The following are examples of activities that award participation points (other opportunities may be added at the instructor's discretion):

Activity	Participation Points	Description
Attending and actively participating in the Tuesday lecture.	Up to 100 points per week and at most 1,100 in total.	Tuesday lectures may include a group work activity or tutorial section that asks you to work with a group to complete a small poll, quiz, short written response, or other activity. Completing these (even if your answer is incorrect) will reward points so long as the instructions of the activity were followed correctly. These activities must be done in-class during the designated time, and your attendance/submission must be recorded.
Attending a Stand-Up Meeting with your TA.	100 points per meeting, and at most 500 in total.	Attending one of your regularly scheduled stand-up meetings with your TA and team will earn 100 points but only if you are an active participant in the meeting. To count you must arrive on time and stay for the duration of the meeting. Acceptance testing counts as a TA meeting for the purposes of participation points.
Completing a participation quiz.	50 points per quiz and at most 550 in total.	Each week a short quiz will be posted to OWL Brightspace. This quiz will have content that covers the lecture videos assigned for the upcoming Tuesday lecture. Completing the quiz before the due date (typically date/time of the next Tuesday lecture) with a grade of at least 80% will grant 50 participation points. You may retake the quiz as many times as required to obtain the 80% grade up until the due date.

Watching a lecture video.	10 points per lecture video.	If OWL Brightspace records you as having watched a lecture video, this is granting 10 participation points per video. Brightspace will indicate that the video has been watched by showing the page on Brightspace as being completed. To count for participation points you must watch the video at least once on Brightspace (rather than via YouTube directly).
Help another student by answering a question on the course forums.	Up to 50 points per answer, and at most 300 in total.	Answering an **unanswered** question posted by another student on the course forums in a meaningful way or **significantly** adding to an already answered question. To count, the answer must be posted in good faith and **within in one week** of the question being asked. No points will be awarded to students working together to post/answer questions purely for points. Most meaningful answers will be given **25 points on average** depending on the quality. **At most 300 points can be earned from answering questions on the forums.**
Creating a tutorial and posting it to the course forums.	Up to 200 points per tutorial, and at most 400 in total.	Creating a tutorial related to one of the topics, technologies, or software used in the course that is not otherwise covered by the course material and posting it to the OWL course forums. To count for points, 1) the topic may not already be covered by a tutorial posted by another student, 2) the tutorial must be detailed, and clear effort must have done to create it (equivalent of at least one hour of work), 3) the tutorial must have been posted at a time in the course when it would be helpful to other students (i.e. it can not be on a topic for which the related project component is already due), 4) it must contain content not fully covered by the course material, and 5) it must include graphics/media (e.g. screenshots, diagrams, video, example files, etc.) to demonstrate the concept being taught. Most primarily text-based tutorials will be given **100 points on average** depending on the quality. Most video-based tutorials will be given 150 on average depending on the quality. **At most 400 points can be earned from posting tutorials and at most 200 points per tutorial.**

Participation points will be converted into percentage (out of 10%) to calculate your final participation mark using the following table:

Level	**Grade** (out of 10%)	**Minimum Participation Points Required**
0	0%	0
1	1%	300
2	2%	375
3	3%	490
4	4%	610
5	5%	750
6	6%	960

7	7%	1200
8	8%	1480
9	9%	1850
10	10%	2225

No fraction of percentages will be granted for participation. You must make it to the next level to increase your participation grade. For example, 955 points would still be a level 5, worth 5%.

Important! If you experience technical issues during the lecture that prevent you from submitting the in-class group work or recording your attendance you **must** inform the instructor during or immediately after the lecture (before the instructor leaves the room). Failing to do so will result in no participation points being earned for the activity.

Due to technical limitations, participation points will not be updated live, and it is your responsibility to estimate them if you wish to track your progress. A final official calculation will be done **after** April 9th and **all work that counts towards participation must be completed by April 9th at 11:59pm.**

The final subjective decision of what constitutes a "meaningful contribution" or how may points is assigned for a contribution is at the sole discretion of the course instructor. Quantity or length of posts/answers is not a substitute for quality and multiple low-quality posts/answers do not add up to one meaningful contribution. While spelling and grammar will not be marked, all posts/answers must be legible, intelligible, and written in English.

To encourage students to read this course syllabus in 50 participation points can be earned by navigation to https://forms.office.com/r/EfPEs4Hv44 and completing the form by January 30th. No points will be granted for this after this date. You may not share this link with other students.

At the instructor's sole discretion, participation points may be removed for disruptive in-class or online behaviour including but not limited to talking during inappropriate times, inappropriate comments, or failing to work well with other students during group work activities. Participation points may also be removed for attempting to "cheat" the participation system. For example, submitting in-class group work for students not in attendance or otherwise falsifying participation records. Spamming the discussion forums or any in-class response system with low quality posts purely to inflate your participation mark may also be penalized.

10. Generative AI

The use of generative AI tools (such as ChatGPT, Claude, Copilot, Gemini, et. al) is allowed in this course under the restrictions and limitations outlined in the following table:

Use of Generative AI	Allowed / Not Allowed	Restrictions / Notes
During a Quiz or Exam	**Not Allowed**	
Writing Requirements and Design Documentation	**Not Allowed**	
Creating UML Diagrams	**Not Allowed**	

Generating Javadoc Comments	**Not Allowed**	
Generating Final Demo Video	**Not Allowed**	You may use AI to generate music and image assets for the video, but the voice over, screen recording, and content must be created by your team.
Editing and Proof-Reading Requirements and Design Documentation	**With Restrictions**	The use of the tool must not generate any content and only provide suggestions on spelling, grammar, etc. that would be equivalent to a human editor. This use of generative AI must be cited in your Requirements or Design Documentation
Researching and Brainstorming for Project Milestones	**With Restrictions**	The use of the tool must not write any part of the Requirements or Design Documentation for you, but may be used to brainstorm ideas, find sources, and research/explore ideas. This use of generative AI must be cited in your documentation.
Checking UML Diagrams for Correctness	**With Restrictions**	You may use generative AI tools to check your work, so long as they do not generate any part of the diagrams. **Warning:** some generative AI tools perform poorly at this task and may give poor or incorrect suggestions. Always think critically about the responses you are given and double check the UML standards.
Generating Code for the Project's Implementation	**With Restrictions**	All generated code must be clearly cited in the comments of your code. It must always be clear what code was created by your team members and what was generated by a tool. While generating coed is allowed, it will not be considered you or your team's contribution. A completely or mostly generated project implementation will result in a poor implementation grade.
Generating JUnit Tests	**With Restrictions**	All generated must be clearly cited in the comments of your code. It must always be clear which tests were created by your team members and what was generated by a tool. Tests that were completely generated by a tool will not be considered you or your team's contribution. If the majority of your Junit tests are generated by AI, this can result in a poor testing grade.

		Your team should be able to explain each test in your project, what it tests, and why it is worth including regardless of how it was created.
Checking and Suggesting JUnit Tests	**Allowed**	You may use generative AI tools to suggest tests and check tests you created for correctness and evaluate their effectiveness. This use does not need to be cited if it does not generate code.
Providing Help with git and GitLab	**Allowed**	You may use generative AI tools to help you use and troubleshoot git and the GitLab software. This use does not need to be cited if it does not generate code.
Debugging and Troubleshooting Code	**Allowed**	You may use generative AI tools to help you debug and troubleshoot your implementation code and JUnit tests. This use does not need to be cited if it does not generate code. Any generated code must be cited.
Generating Media Assets (Images, Sprites, Music, UI Elements, etc.) for Final Software Implementation	**Allowed**	You may use generative AI tools to create media (images, music, sprites, etc.) for use in the final implementation of the project. This use does not need to be cited if it is limited to image files (.png, .jpeg, etc.) or music files (.mp3, etc.). However, if it includes code or text it should be cited as per the citation guidelines.
Studying for Tests	**Allowed**	You may use generative AI to generate practice questions, tutoring, and for other studying purposes so long as it is not used during a test (including quizzes and exams).
Other Uses	**Ask your instructor**	If your use of generative AI is not listed here, ask your instructor for permission before using it.

Citating Generative AI Use

For a guideline on how to cite your use of generative AI, please see the The Artificial Intelligence Disclosure (AID) Framework: https://subjectguides.uwaterloo.ca/chatgpt_generative_ai/attribution

11. Accommodations & Missed Coursework

11.1. 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://www.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/
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)
- The group project (one exception allowed by course syllabus).

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.

11.2. Evaluation Scheme for Missed Assessments and Flexibility

Assessment	Evaluation Scheme for Missed Work
Group Project Milestones *(group submissions)* *Has Flexibility*[1]	Your team may **use the late coupon system to gain a no penalty grace period** of one day per late coupon (up to 3 late coupons can be used per assignment). See Section 6.4 for full details on the late coupon system.
Group Peer Reviews, Peer Assessment of Other Teams, & Evaluation of Feedback *(individual submission)*	If you have an absence that prevents you from completing a peer review, peer assessment, or evaluation of feedback by the given due date, you must submit a consideration request to academic advising. If the consideration request is approved by academic advising or is your one undocumented consideration request, special consideration will be provided by

[1] By policy, instructors may deny academic consideration requests for assessments with built-in flexibility.

	the course instructor. This special consideration will either be the opportunity to submit late without penalty (only if the late submission deadline has not passed) or moving the weight to your midterm/final exam grade (if the late submission deadline has passed or would not be feasible).
Participation *Has Flexibility*[1]	The participation system described in section 9 contains multiple ways to earn a full participation grade. Should you miss a participation quiz, lecture or meeting, you can make up the points using one of the methods for earning points described in section 9. Should your absence be significantly long enough to make it impossible to earn the missed participation points through other means, you must submit a **documented** consideration request to academic counselling.
Group Meetings, TA Check Ins, and Acceptance Testing *Has Flexibility*[1]	**You may miss half of the Group Meetings and TA Check Ins without penalty (for the purposes of the course essential requirements).** If you miss more than half of any type of meeting or the Acceptance Testing meeting you must submit a **documented** academic consideration request. If the request is approved and covers the correct dates, missing this meeting will not be held against you in terms of the essential requirements for passing this course.
Midterm Exam *Has Flexibility*[1]	No makeup is offered for the midterm exams. Instead missing a midterm results in the weight being placed on the final exam (see Section 8 for full details). No consideration request is required if you miss the midterm.
Final Exam	If you wrote both midterms, your midterm/exam grade will simply be comprised of your midterm grade as described in Section 8. No consideration or action is needed in this case. If you missed one or both midterms as well as the final exam you must submit a **documented** academic consideration request. If the request is approved and covers the exam date, you 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. In this case your midterm/exam grade will still be calculated as per Section 8 using the grade of your makeup exam as your final exam grade.

11.3. Essential Learning Requirements

Even when Academic Considerations are granted for missed coursework, the following are deemed essential to earn a passing grade:

- The minimum requirements for the tests and group project participation as defined in Section 5.1.

12. Contingency Plans

Should Kritik360 be unavailable or fail to accommodate the marking schemes or polices in this course outline, the course instructor reserves the right to move assignment submissions to OWL Brightspace and use other means to collect peer evaluations.

Should any exam be unable to be held in-person (e.g. due to a pandemic or other emergency situation) the evaluation scheme described in this outline will remain the same, but evaluations and lectures may be moved online using software such as Proctortrack or Zoom. You agree to use this software and accept their terms of use and privacy policies and that you will require a webcam and microphone.

Should a Tuesday lecture be cancelled, an alterative means of earning the 100 participation points for the cancelled lecture will be offered. Information about the alterative will be posted to OWL Brightspace should that occur.

13. Additional Statements

13.1. Religious Accommodation

When conflicts arise with a religious holiday that requires an absence from the University or prohibits certain activities, students should request an accommodation for their absence in writing to the course instructor and/or the Academic Advising office of their Faculty of Registration. This notice should be made as early as possible, but not later than two weeks prior to the writing of the examination (or one week prior to the writing of the test).

Please visit the Diversity Calendars posted on our university's EDID website for the recognized religious holidays - https://www.edi.uwo.ca

13.2. 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.

13.3. 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, 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.

13.4. Requests for Relief (formally 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

Procedures on Request for Relief from Academic Decision (Undergraduate):
https://uwo.ca/univsec//pdf/academic_policies/appeals/undergrad_requests_for_relief_procedure.pdf

13.5. Scholastic Offences

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:

https://uwo.ca/univsec//pdf/academic_policies/appeals/scholastic_offences.pdf

You may also find the Procedures on Scholastic Offences (Undergraduate) here:
https://uwo.ca/univsec//pdf/academic_policies/appeals/undergrad_scholastic_offence_procedure.pdf

Please see Section 6 and 10 for some guidelines on what may also constitute an offence for this course.

All required project submissions may be subject to submission for textual, code, and meta data similarity review to the commercial and custom plagiarism detection software under license to the University for the detection of plagiarism. Such services may include Turnitin, Gradescope, MOSS, and custom software created by the course instructor. All work submitted for such checking may be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of Turnitin and Gradescope are subject to the licensing agreements, currently between The University of Western Ontario and the respective service providers.

Computer-marked tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

13.6. 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 may be brought into the assessment room. It is your responsibility to review and comply with these expectations.

13.7. 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 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. If you have any questions regarding accommodations, you may also wish to contact Accessible Education at

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.

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/.