



COSC 4P01: Software Engineering

Course Information

Course Number: COSC 4P01

Term/Year/Duration: 2024 Fall D1

Course Title: Software Engineering

Instructor Information

Instructor Name: Naser Ezzati-Jivan

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Contact:

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Times and Locations

Credit Hours: 36

Location: STH202

Period: Sep 05, 2024 to Dec 05, 2024

Time: Monday: 800 -930

Thursday: 800 -930

Note: Classes at Brock University end ten minutes ahead of the hour or half hour to facilitate transfer time.

Learning Outcomes:

- *Understand and compare different software development methodologies, including plan-driven and Agile development, and apply them appropriately in various project scenarios.*
- *Demonstrate proficiency in software requirements elicitation, design, and analysis, utilizing design patterns and principles to create robust, secure, and maintainable software solutions.*
- *Develop skills in software testing, maintenance, and observability, ensuring software safety, security, and robustness in diverse environments.*

- *Gain hands-on experience with industry-standard tools like Git, GitHub, Azure DevOps, and GitHub AI CoPilot, and learn to integrate AI techniques in software engineering practices.*

Required Readings or Texts



Software Engineering (10e) by Ian Sommerville, isbn: 9780133943030



Software Engineering: A Practitioner's Approach (9e) by R. Pressman, isbn: 978007802212

Course Communications

All course communications will be conducted through Brightspace and Brock email; students will be notified of any class cancellations, inclement weather, or other issues via these platforms, with responses to inquiries expected within 24-48 hours.

Assessment Components and Due Dates

Table 1 Assessment Components

Assessment Component	Grade Weight	Due Date
Assignment 1	10 %	Date: Sept 30 th
Assignment 2	10 %	Date: Oct 30 th
Assignment 3	10 %	Date: Nov 30 th
Midterm	20 %	Date: Oct 10 th
Test Term	30 %	Date: Dec 2 nd
Pop-up Quizzes (at least 6)	20 %	Date: entire semester
Total	100%	

Task Descriptions

Assignments:

- There will be 3 assignments.
- Due date and time for assignment submission will be printed on the assignment text.
- Assignments are “Individual”, and each student is individually responsible for completing the assignment and will receive an individual grade.
- Late submissions: up to 4 days after the deadline with a one-time 25% penalty.

- Random students may be chosen to explain their assignment material to
- the instructor

Exams:

- Midterms: 20%: Closed-book, in-person, in class exam on Thursday, Oct 10th from 8:00 to 9:15 am
- Term Test (30%): Closed-book and in-person, In class exam on Monday, Dec 2nd from 8:00 am to 9:15 am.
- Quizzes: Unscheduled and will be popup
 - Minimum 6 quizzes
 - The lowest mark will be disregarded.

Late Submission Policy

The penalty for late submission of assigned coursework is a one-time deduction of 25% if submitted up to 4 days late, unless accompanied by medical documentation. See the Medical Exemption Policy and the medical health certificate on the [Registrar's Website \(Forms\)](#).

Important dates

The most recent listing of Important Dates for all durations is at <https://brocku.ca/important-dates/all/>

First day of classes: 4 September

Last day of lectures: 3 December

Last day of exams: 19 December

Deadline for withdrawal without academic penalty: 5 November

Relationship between attendance and grades:

Students are expected to attend all classes.

Academic Policies

Academic Integrity

Statement for undergraduate courses

Academic misconduct is a serious offence. The principle of academic integrity, particularly of doing one's own work, documenting properly (including use of quotation marks, appropriate paraphrasing and referencing/citation), collaborating appropriately, and avoiding

misrepresentation, is a core principle in university study. Students should consult Section VII, “Academic Misconduct”, in the “Academic Regulations and University Policies” entry in the [Undergraduate Calendar](#) to view a fuller description of prohibited actions, and the procedures and penalties. Information on what constitutes academic integrity is available at [Brock University Academic Integrity Website](#).

Plagiarism software:

This course may use Turnitin.com, phrase-matching software. If you object to uploading your assignments to Turnitin.com for any reason, please notify the instructor to discuss alternative submissions.

Penalties for Academic Misconduct in the Faculty of Mathematics and Science

The following are standard penalties imposed in academic misconduct cases in FMS. Please be aware that the Associate Dean, Undergraduate Programs, may assign different penalties than those listed here, depending on the details of individual cases. ***Requests for special academic consideration, such as exceptions to academic regulations, will not be considered while academic integrity cases are ongoing.***

Penalties for misconduct in course work, including mid-term tests

First offence: Zero grade on assignment, additional penalty of 100% of the weight of the assignment to be subtracted from the final grade, mandatory completion of the AZLS Academic Integrity workshop

Second offence: Zero grade on assignment, 4-month suspension

Third offence: Zero grade in course, 1-year suspension, permanent removal from major program.

Fourth offence: Permanent suspension / debarment.

Penalties for misconduct in final exams:

First offence: Zero grade in course

Second offence: Zero grade in course, 4-month suspension

Third: Zero grade in course, 1-year suspension, permanent removal from major program,

Fourth offence: Permanent suspension / debarment.

Intellectual Property Notice

All slides, presentations, handouts, tests, exams, and other course materials created by the instructor in this course are the intellectual property of the instructor. A student who publicly posts or sells an instructor's work, without the instructor's express consent, may be charged with misconduct under Brock's Academic Integrity Policy and/or Code of Conduct, and may also face adverse legal consequences for infringement of intellectual property rights.

Accommodations

The University is committed to fostering an inclusive and supportive environment for all students and will adhere to the Human Rights principles that ensure respect for dignity, individualized accommodation, inclusion and full participation. The University provides a wide range of resources to assist students, as follows:

- a) If you require academic accommodation because of a disability or an ongoing health or mental health condition, please contact Student Accessibility Services at askSAS@brocku.ca or 905 688 5550 ext. 3240.

b) Medical Self-Declaration Forms (brief absence up to 72 hours)

In the case of a short-term medical circumstance, if a student wishes to seek an academic consideration, please use the [Medical Self-Declaration Form](#). The request is to be made in good faith by the student requesting the academic consideration due to a short-term condition that impacts their academic activities (e.g., participation in academic classes, delay in assignments, etc.).

The period of this short-term medical condition for academic consideration must fall within a 72-hour (3 day) period. The form must be submitted to the instructor either during your brief absence or if you are too unwell, within 24 hours of the end of your 3 day brief absence.

Medical Verification Form (extended duration)

In cases where a student requests academic consideration due to a medical circumstance that exceeds 72 hours (three days) and will impact their academic activities (e.g., participation in academic classes, delay in assignments, etc.), or in the case of a final exam deferral, the [medical verification form](#) must be signed by the student and the health professional as per process set out in the [Faculty Handbook III:9.4.1](#).

- c) If you are experiencing mental health concerns, contact the Student Wellness and Accessibility Centre. *Good2Talk* is a service specifically for post-secondary students, available 24/7, 365 days a year, and provides anonymous assistance: [Good 2 Talk](#) or call

1-866-925-5454. For information on wellness, coping and resiliency, visit: [Brock University \(Mental Health\)](#)

- d) If you require academic accommodation on religious grounds, you should make a formal, written request to your instructor(s) for alternative dates and/or means of satisfying requirements. Such requests should be made during the first two weeks of any given academic term, or as soon as possible after a need for accommodation is known to exist.
- e) If you have been affected by sexual violence, the Human Rights & Equity Office offers support, information, reasonable accommodations, and resources through the Sexual Violence Support & Education Coordinator. For information on sexual violence, visit [Brock's Sexual Assault and Harassment Policy](#) or contact the Sexual Violence Support & Response Coordinator at humanrights@brocku.ca or 905 688 5550 ext. 4387.
- f) If you have experienced discrimination or harassment on any of the above grounds, including racial, gender or other forms of discrimination, contact the Human Rights and Equity Office at humanrights@brocku.ca.

Sequence and Dates of Topics and Readings

Below is a list of dates of topics with associated readings and other relevant information. This list is subject to change based on class discussions.

Table 2 Sequence of Dates of Topics and Readings

Class Dates	Focus/topic	Reading(s), Activities, and Other Information
Week 1	Introduction to Software Engineering	Chapter 1
Week 2	Software processes & Agile	Chapter 2 and 3
Week 3	Requirements Engineering	Chapter 4 Assignment 1 Release
Week 4	System Modelling	Chapter 5 Midterm
Week 5	Architectural Design	Chapter 6
Week 6	Design & Implementation	Chapter 7
Week 7	Software Testing	Chapter 8
Week 8	Software Testing	Chapter 8 Assignment 2 Release
Week 9	Software Evolution and Maintenance	Chapter 9
Week 10	Software Evolution and Maintenance	Chapter 9
Week 11	Software Observability	Chapter 9 Assignment 3 Release
Week 12	Review and Term Test	Term Test