ALGONQUIN COLLEGE | Ottawa Pembroke Perth Online

WEEKLY SCHEDULE WINTER 2026

CST8513 Quality Assurance and Testing
Section 010&011 – Synchronous
Computer Programming and Analysis Advanced Diploma – Level 6

Professor's Name: Dr. Yuan (Kevin) Huang
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Learning Resources

Free Open-Educational Resource are provided within Brightspace course.

Additional Reference and Supporting Resources:

- Laporte, C. Y., & April, A. (2017). Software Quality Assurance. In Systems, Software and Services Process Improvement. Springer.
- Chopra, R. (2019). Software Testing: A Self-Teaching Introduction. Wiley.

Evaluation Breakdown

Reminder to include Assessment Due Dates in Brightspace Calendar

Assessment	Due Date and Time	Value	CLRs
Practical (Lab) part		50%	
Lab Activities		25%	
Lab Activity 1	In-Lab Week 1	1%	1, 2
Lab Activity 2	Jan 25 11:59pm	2%	1, 2, 3
Lab Activity 3	In-Lab Week 3	1.5%	1, 4
Lab Activity 4	Feb 8 11:59pm	5%	1, 2, 3, 4, 5
Lab Activity 5	In-Lab Week 5	1.5%	1, 2, 4, 5
Lab Activity 6	In-Lab Week 6	1.5%	1, 2, 5
Lab Activity 7	In-Lab Week 7	1.5%	1, 3, 4, 5
Lab Activity 9	In-Lab Week 9	1.5%	1, 7
Lab Activity 10	Mar 23 11:59pm	5%	1, 6
Lab Activity 11	In-Lab Week 11	1.5%	1, 4, 7
Lab Activity 12	In-Lab Week 12	1.5%	1, 5, 7
Lab Activity 13	In-Lab Week 13	1.5%	1, 6, 7
Team Projects		25%	
Project 1: Proposal	Feb 20 11:59pm	5%	1, 2, 3
Project 2: Functional	Mar 27 11:59pm	10%	1, 2, 3, 4, 5
Project 3: Automation	Apr 10 11:59pm	10%	1, 2, 6

Assessment	Due Date and Time	Value	CLRs
Theory part		50%	
In-Class Work		5%	
Exit Ticket 1	Week 1 In-Class	1%	1, 2
Exit Ticket 2	Week 3 In-Class	1%	1, 4
Exit Ticket 3	Week 5 In-Class	1%	1, 3, 5
Exit Ticket 4	Week 9 In-Class	1%	1, 2, 4
Exit Ticket 5	Week 12 In-Class	1%	1, 2, 5
Presentation	Week 14 In-Class	10%	1, 2, 8, 9
Quizzes		35%	
Quiz 1	Week 2 In-Class	5%	1, 2, 3
Quiz 2	Week 4 In-Class	5%	1, 2, 3, 4
Quiz 3	Week 6 In-Class	10%	3, 6
Quiz 4	Week 10 In-Class	5%	3, 7
Quiz 5	Week 14 In-Class	10%	8, 9

Learning Schedule

Learning schedule is subject to change with notification

Date	Weekly Theme and Learning Outcomes	Learning Activities	Assessments (%) Due Date	Resources	CLRs
Week 1 Jan 12	**Introduction to Quality Assurance (QA)** • Define software quality and its importance. • Differentiate between QA and QC. • Explain the 7 Principles of Testing. • Define role of Quality Assurance in SDLC. • Define entry and exit criteria in STLC. • List Different levels of software testing.	- Interactive Lecture - Group Discussion - Problem Solving	Exit Ticket 1 In-Class (1%) Lab 1 In-Lab (1 %)	Resources provided within Brightspace course	1, 2
Week 2 Jan 19	**Exploring Different Types of Tests** • Identify various software testing types. • Describe the purpose and application of each test type. • Distinguish between black box and white box testing. • Define the significance of tests in software development and QA.	- Interactive Lecture - Group Discussion - Problem Solving	Quiz 1 In-Class (5%) Lab 2 Jan 25 11:59pm (2 %)	Resources provided within Brightspace course	1,2
Week 3 Jan 26	**Test Case Design** • Create a test plan based on software requirements. • Use major testing methodologies. • Execute tests from planning to documentation. • Analyze software requirements for testing direction.	- Interactive Lecture - Group Discussion - Problem Solving	Exit Ticket 2 In-Class (1%) Lab 3 In-Lab (1.5 %)	Resources provided within Brightspace course	1,2,3
Week 4 Feb 2	**Implementing Test Plans** • Develop a test plan from software needs. • Describe key testing techniques. • Implement comprehensive testing processes. • Write structured test plans' role in quality. • Direct testing based on software requirements.	- Interactive Lecture - Group Discussion - Problem Solving	Quiz 2 In-Class (5%) Lab 4 Feb 8 11:59pm (5 %)	Resources provided within Brightspace course	2,3,4

Date	Weekly Theme and Learning Outcomes	Learning Activities	Assessments (%) Due Date	Resources	CLRs
Week 5 Feb 9	**Analyzing and Documenting Test Results** • Create a test plan from software needs. • Prioritize test cases by risk. • List defect tracking significance. • Link test cases with requirements for coverage. • Describe test coverage for software quality. • Enhance communication for collaboration and defect clarity.	- Interactive Lecture - Group Discussion - Problem Solving	Exit Ticket 3 In-Class (1%) Project Proposal Feb 20 11:59pm (5%) Lab 5 In-Lab (1.5 %)	Resources provided within Brightspace course	3,4,5
Week 6 Feb 16	**Basics of Test Automation** • List test automation fundamentals. • Weigh manual vs. automated testing. • Determine automation application in testing levels. • Explore automation methodologies. • Use Selenium for web application testing.	- Interactive Lecture - Group Discussion - Problem Solving	Quiz 3 In-Class (10%) Lab 6 In-Lab (1.5 %)	Resources provided within Brightspace course	3, 6
Week 7 Feb 23	**Advanced Test Automation** • Learn Robot Framework and Selenium basics. • Use Selenium with Robot Framework for web automation. • List Selenium components: IDE, WebDriver, GRID. • Explore key Robot Framework libraries. • Implement Page Object Model in Robot Framework tests.	- Interactive Lecture - Group Discussion - Problem Solving	Lab 7 In-Lab (1.5%)	Resources provided within Brightspace course	6
Week 8 Mar 2	Enjoy your Break 😊				

Date	Weekly Theme and Learning Outcomes	Learning Activities	Assessments (%) Due Date	Resources	CLRs
Week 9 Mar 9	**API Testing** • Define an API and its functions. • Differentiate between REST, SOAP, and GraphQL. • List API components like endpoints and methods. • Use tools like Postman for API interactions.	- Interactive Lecture - Group Discussion - Problem Solving	Exit Ticket 4 In-Class (1%) Lab 9 In-Lab (1.5 %)	Resources provided within Brightspace course	3, 4
Week 10 Mar 16	**Introduction to Performance Testing** • List the role of performance testing in QA. • Use open-source tools for performance testing. • Analyze test results to identify bottlenecks. • Describe the range of non-functional testing.	- Interactive Lecture - Group Discussion - Problem Solving	Team Project: Functional part Mar 27 11:59pm (10%) Lab 10 Mar 23 11:59pm (5 %)	Resources provided within Brightspace course	7
Week 11 Mar 23	**Accessibility Testing** • List accessibility testing techniques and tools. • Analyze the broader context of non-functional testing. • Identify accessibility issues in software applications.	- Interactive Lecture - Group Discussion - Problem Solving	Quiz 4 In-Class (5%) Lab 11 (1.5 %)	Resources provided within Brightspace course	2
Week 12 Mar 30	**Evaluating Software for Security Risks** • Describe the role of security testing in QA. • List tools and techniques for security risk evaluation. • Identify common types of software security vulnerabilities. • Develop strategies for effective security mitigation.	- Interactive Lecture - Group Discussion - Problem Solving	Exit Ticket 5 In-Class (1%) Team Project: Automation part Apr 10 11:59pm (10%) Lab 12 In-Lab (1.5 %)	Resources provided within Brightspace course	8

Date	Weekly Theme and Learning Outcomes	Learning Activities	Assessments (%) Due Date	Resources	CLRs
Week 13 Apr 6	**Integrating Testing in CI/CD Pipelines** • Describe CI/CD concepts and the role of testing within it. • Incorporate different testing types into a CI/CD pipeline. • Learn to use popular CI/CD tools for managing testing pipelines.	- Group Discussion - Problem Solving	Lab 13 In-Lab (1.5 %)	Resources provided within Brightspace course	3, 9
Week 14 Apr 13	**Students' presentations**	- Group Discussion - Presentation	Presentation In-Class (10%) Quiz 5 In-Class (10%)		1,2,8

Statement on Generative Artificial Intelligence (AI)
Some Use Permitted

Students may use generative AI in this course in accordance with the guidelines outlined by the instructor for each assessment, provided that the use of generative AI is cited following instructions communicated in the Weekly Schedule.

Under Policy AA48: https://www.algonquincollege.com/policies/aa48/ "Academic work submitted by learners is evaluated on the assumption that the work presented by the learner is their own" and defines contract cheating as "[a] third-party completing work, with or without payment, for a learner, who then submits the work as their own, where such input is not permitted." Use of generative AI outside assessment guidelines and/or without citation will be brought forward as instances of academic misconduct under this policy. When uncertain, students should reach out to their professor, who will clarify as necessary.

Other Important Information

Please note the Weekly Schedule document is not a legal document and can be changed by the course professor as the term progresses. The professor will notify you about these changes.

Communications

- Email is the official communication channel for this course; I will respond to email typically within 24 to 48 hours. Emails must be sent using your Algonquin College student email account, or from within Brightspace. I may ignore emails sent from other sources (Gmail, Hotmail etc.) to protect student privacy.
- Note that emails will not be answered on weekends (Saturday, Sunday) or on holidays when the campus is closed.
- Include your full name, student number, course number and course section or lab section number as well as a description of the issue you need help with. This will help me to help you.
- See Brightspace for my contact information, as well as the contact information for your lab professor in their Brightspace course section shell if this person is not me.

Submission Notes for Homework

- All work (unless indicated otherwise) must be submitted via Brightspace using the correct upload link.
- You are responsible to upload the correct deliverable to the correct upload link, if you make a mistake like this contact your lab professor immediately and let him/her know the details of the mistake.
- **Lab professors may specify submission requirements for their labs that are different from, or in addition to, the guidelines set here. Please see the lab section Brightspace course shell for communications from the lab professor regarding their submission requirements.**

- If you know you will miss a due date because of one of the reasons listed in Paragraph 3 of Algonquin Policy AA21 Deferred Evaluation, inform the professor by email, before or, in extenuating circumstances, immediately after the evaluation is missed, normally within three (3) working days (see Paragraph 4 of Policy AA21).
- A grade of 0 will be assigned for the assessment if submission is not completed before 8:00am on the first business day after the due date, unless Policy AA21 applies.

Citations and References

- Citations and References are needed in all documents you create and pass in when you use resources external from the course handouts. This includes placing citations and references within source code using IEEE style as programmer comments.
- If the professor does not request citations or references as part of an assignment's instruction, you still need to cite and reference your sources.
- See these documents online as a quick reference for IEEE citations: https://ieee-dataport.org/sites/default/files/analysis/27/IEEE%20Citation%20Guidelines.pdf http://www.ijssst.info/info/IEEE-Citation-StyleGuide.pdf
- Note: The work you complete in this course must be your own original work
- Copy and pasting without citing and referencing the original author(s) may result in a zero for the deliverable.
- Copy and pasting huge portions of documents (including source code) from other authors will not earn you marks even if properly cited and referenced (you are only demonstrating that you can copy and paste, not that you can write code on your own). This will be determined on a case-by-case basis at the discretion of the professor, if you are not sure or have questions on a deliverable you are working on contact the professor before the due date to get advice and/or help.
- As an example: you find a tutorial online that closely matches the homework assigned, so you copy and paste it all, then change a few things. If the tutorial is not cited and referenced, you have committed academic dishonesty, as per Algonquin Policy AA48. If the tutorial's material is cited and referenced your professor may provide a mark deduction up to a score of zero for not using your own work.
- **Citing Generative AI**
Please refer to the college library website with regards to citing Generative AI, while you are expected to use IEEE citation format please following the guidelines under the APA Citation Guide, see the "Artificial Intelligence (AI)" tab. https://algonquincollege.libguides.com/citingandreferencing

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