

# CPSC 270A Syllabus

**Instructor:** Dr. Durell Bouchard  
**Office Hours:** M-F: 1:00 PM - 2:00 PM  
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## Course Objectives

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In previous courses, you have learned how to create programs, organize them with data structures, and analyze their computational complexity. These topics and skills provide the foundations for all other computer science classes. Real-world software projects are significantly more extensive and complex than the programs you created in these classes. Fortunately, there is a sub-discipline of computer science, software engineering, dedicated to making the software development process more manageable. The techniques and tools you acquire in this class will not only prepare you for upper-level computer science courses but also equip you for success in software development after graduation.

**Intended Learning Outcomes:** By the end of the course, successful students will be able to:

1. Design and implement large software projects using a suitable software process model.
2. Review code for design, readability, and computational complexity.
3. Create appropriate and thorough test cases for a software implementation.
4. Utilize and comprehend the features of an integrated development environment, including compiling, debugging, testing, and version control.

## Course Content

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**Prerequisites:** CPSC250

**Text:** *Clean Code: A Handbook of Agile Software Craftmanship*, by Robert C. Martin, Prentice Hall, 2008.

**Project:** The primary focus of the course is a semester-long software development group project. This project aims to integrate all the software engineering tools and skills you have acquired throughout the semester into the development of a mobile app.

**Activities:** In-class activities provide you with a structured experience in software engineering, enhancing your ability to use and understand the tools available for software development. These activities bridge the gap between the reading material and lectures, preparing you for the project.

**Co-curricular:** The Department of Mathematics, Computer Science, and Physics is offering a series of lectures designed to engage the campus community in discussions of ongoing research, novel applications, and other issues within these disciplines. You may submit up to two papers reflecting on a talk you attend for extra credit.

**Grading:** Course grades are assigned based on the following weights and scale:

Grade Weights			
Category	Weight		
Project	65%		
Activities	35%		
Grade Scale			
Grade	Range	Grade	Range
A	93-100	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	0-59

## Course Policies

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**Attendance:** If you have a temperature of 100.4 or higher or other COVID symptoms, do not come to class. Call Health Services IMMEDIATELY. For your absence to be excused, you must allow Health Services to notify me that you have consulted them about COVID symptoms. If Health Services instructs you to isolate and not attend class for multiple days, inform me so that we can devise a plan to keep you up-to-date with the course material. All absences caused by consultation with Health Services regarding coronavirus symptoms or isolation ordered by Health Services will be excused. You will still need to complete the work and graded assignments, even if we extend your deadline.

Class attendance is crucial for success in this course; the material covered during missed sessions remains the responsibility of the student. Conversations in class clarify the published class materials and are subject to evaluation in subsequent tests and quizzes. If you anticipate being unable to attend class, please email me before class to request an excusal.

**Late Work:** Unless specified otherwise, assignments must be submitted before the start of class on the due date. If you anticipate being unable to meet a deadline, email me before the deadline to request an extension. Unexcused late work will receive no credit.

**Academic Integrity:** Collaboration is a fundamental part of learning. You are encouraged to discuss and learn from one another while working on the activities. However, collaboration on the group project requires proper attribution. Copying someone else's work or submitting someone else's work as your own is NEVER allowed. Using someone else's work or ideas without appropriate attribution constitutes plagiarism and is considered an academic integrity offense. Please familiarize yourself with Roanoke College's standards for academic integrity. If you are unsure about how the policy applies to any assignments in this course, seek clarification from me.

**Subject Tutoring:** located on the lower level of Fintel Library (Room 5), is open 4-9 PM, Sunday-Thursday. Subject Tutors are highly trained, current students who offer free, one-on-one (and small group) tutorials in over 80 courses taught at Roanoke College, including: Business, Economics, Mathematics, INQ 240, Modern Languages, Lab Sciences, and Social Sciences. Check out all available subjects and schedule 30- or 60-minute appointments at <[www.roanoke.edu/tutoring](http://www.roanoke.edu/tutoring)>. If you have a question, feel free to stop by, or contact us at [subject\\_tutoring@roanoke.edu](mailto:subject_tutoring@roanoke.edu) or 540-375-2590. See you soon!

**Accessible Education Services:** Accessible Education Services (AES) is located in the Goode-Pasfield Center for Learning and Teaching in Fintel Library. AES provides reasonable accommodations to students with documented disabilities. To register for services, students must self-identify to AES, complete the registration process, and provide current documentation of a disability along with recommendations from the qualified specialist. Please contact Dustin Persinger, Assistant Director of Academic Services for Accessible Education, at 540-375-2247 or by e-mail at [aes@roanoke.edu](mailto:aes@roanoke.edu) to schedule an appointment. If you have registered with AES in the past and would like to receive academic accommodations for this semester, please contact Dustin Persinger at your earliest convenience to schedule an appointment and/or obtain your accommodation letter for the current semester.

**Student Health and Counseling Services:** Student Health & Counseling Services supports students through in-person health appointments, in-person counseling, 24/7 telehealth (TimelyCare), Therapy Assistance Online, as well as resources related to general wellness, LGBTQ+, sexual assault, substance abuse, and suicide prevention. Unmet health needs can negatively impact your performance in this course. Student Health & Counseling Services can help. Please see <https://www.roanoke.edu/shcs> for more information and to access services.

**Diversity:** This classroom is a place where all individuals will be treated with respect, and students of all backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, abilities, and other visible and non-visible differences are welcomed. All members of this class are expected to contribute to creating a respectful, welcoming, and inclusive environment for each other.

**Preferred Name/Pronoun:** I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester to make appropriate changes to my records.

## Course Schedule

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This course expects you to spend at least 12 hours of work each week inside and outside of class.

<b>Date</b>	<b>Topic</b>
Wednesday, January 17	Introduction
Friday, January 19	Web Page - HTML
Monday, January 22	Web Page - CSS
Wednesday, January 24	Web Page - Layouts
Friday, January 26	Web Page - Responsive Layout
Monday, January 29	JavaScript - Introduction
Wednesday, January 31	JavaScript - Continued
Friday, February 2	JavaScript - Objects
Monday, February 5	JavaScript - Async
Wednesday, February 7	JavaScript - App
Friday, February 9	React - UI
Monday, February 12	React - Interactivity
Wednesday, February 14	React - State
Friday, February 16	React Native - Introduction
Monday, February 19	React Native - Design
Wednesday, February 21	React Native - Navigation
Friday, February 23	React Native - Animation
Monday, February 26	React Native - Async
Wednesday, February 28	React Native - App
Friday, March 1	Project
<b>Spring Break</b>	
Monday, March 11	Version Control
Wednesday, March 13	Agile - Introduction
Friday, March 15	Agile - Philosophy
Monday, March 18	Agile - Planning
Wednesday, March 20	User Interface Design
Friday, March 22	Testing - Jest

<b>Date</b>	<b>Topic</b>
Monday, March 25	Testing - Testing Library
Wednesday, March 27	Project
Monday, April 1	Clean Code - Introduction
Wednesday, April 3	Clean Code - Names
Friday, April 5	Project
Monday, April 8	Clean Code - Functions
Wednesday, April 10	Clean Code - Comments
Friday, April 12	Project
Monday, April 15	Clean Code - Formatting
Wednesday, April 17	Clean Code - Objects
Friday, April 19	Project
Monday, April 22	Project
Tuesday, April 23	Project
Thursday, April 25 10:00 AM	Project Presentations