

COURSE SYLLABUS



COURSE TITLE: ICS211 Web Applications
CLASS SECTION: X03A, X03B
TERM: Fall 2023
COURSE CREDITS: 3
DELIVERY METHOD(S): Face-to-face

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.
Learn more about Camosun's [Territorial Acknowledgement](#).

For COVID-19 information please visit <https://legacy.camosun.ca/covid19/index.html>.

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.

INSTRUCTOR DETAILS

NAME: Brandon Devnich
EMAIL: devnichb@camosun.bc.ca
OFFICE: TEC 236
HOURS: By appointment in person or via Collaborate

As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.

CALENDAR DESCRIPTION

Students will expand their knowledge in website building by adding dynamic and interactive components. Through applied activities, students will be introduced to how client-side scripts interact with server-side programs and back-end concepts and tools for end-to-end (e.g., full-stack) web development.

PREREQUISITE(S): C in ICS 121 or ICS 128
and
C in ENGR 155, or ICS 125
CO-REQUISITE(S): -
EXCLUSION(S): -

COURSE LEARNING OUTCOMES / OBJECTIVES

Learn web technologies to create dynamic and interactive web applications. You will learn the underlying client and server-side web technologies to create dynamic web applications. The intended learning outcomes are as follows:

- Design, implement and test a web application using current web technologies including client-side markup, server-side programming for data processing and authentication techniques.;
- Describe the major areas and challenges of web programming;
- Explain the function of each web application component using domain-specific terminology;
- Describe different security issues with web applications and apply the appropriate technique to secure data integrity; and
- Apply accepted standards to ensure security, privacy, and integrity of data while recognizing the ethical, legal, and social implications of web applications

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

- Materials on the D2L course page:
 - presentation slides for lectures, lab assignment instructions for labs, etc. see <https://online.camosun.ca/d2l/home/265098>
- Materials on the ICS 211 course page:
 - Code snippets for quick access <https://211.ics.compsci.cc>
- Required Textbooks
 - None
- Recommended Hardware
 - Although not required, a personal laptop would be an asset.

General Schedule

The course will meet in-person, four times per week over a 14-week semester. Each week will consist of three one-hour lectures and one two-hour lab. Additional time over and above the allotted lab time may be required to complete lab assignments.

Lectures will be delivered in-person at regular times. Recordings of lectures may be made available.

Labs will be assigned and then due before the next scheduled lab block.

Please see lecture and lab schedule at <http://my.camosun.ca> for detailed information about class hours and locations. Please consult the calendar tool in D2L frequently for any updates.

Topics

Lectures will contain topics that will help you complete the weekly lab. These topics will teach you the basics of web application development using the React platform, as well as experience building a web application that interfaces with a real-world API. Please see course schedule and topics table below for more detail.

Activities

During lectures, you will have the opportunity to participate in in-class code practice. You will receive a bonus participation mark, worth up to 5%, upon completion of the course, based upon the number of in-class examples you participate in. You will submit these up to your allocated course web space.

There will be weekly at-home open-book quizzes to reinforce your comprehension of course material covered during the week. You will have unlimited opportunities to complete each quiz before their weekly due date.

The instructor will be available, in person, during the regularly scheduled lab times. While labs can be done from home, provided you have an internet connection, students who attend lab in-person will receive priority assistance.

There will be a major term project in the last third of the course that will satisfy the primary course objective to “design, implement, and test a web application”.

Expected Workload

For highest results, you should expect to spend, outside of scheduled lecture and lab times, an additional 1 hour daily (or 7 hours weekly) to complete lab assignments, practice examples, review material, and complete quizzes.

Evaluation

You will be evaluated regularly through the at-home quizzes, and completion of the weekly labs. Building towards the final exam, you will complete the term project which will further give you practice applying the knowledge you acquire through the course. At the end of the course, you will complete a theoretical and practical exam.

Schedule of Sessions and Topics

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

Week	Start	Topics	Labs	Quiz
1	Sept 5	01: Course Outline 02: Introduction to Visual Studio Code 03: Introduction to Web Apps	Lab 00: Setting Up Your Development Environment Requires: Lesson 1	Q1
2	Sept 11	04: AJAX, SOP DOM & Intro to React 05: Intro to JSX 06: Intro to React Components	Lab 01: Create a static HTML page with React Components and JSX Requires: Lesson 2, 3, 4, 5	Q2
3	Sept 18	07: ES6, Arrow Function & Destructuring 08: Styling React Components 09: Using map()	Lab 02: ES6-izing and Styling Your React Components Requires: Lesson 6, 7	Q3
4	Sept 25	10: React Hooks, Component Lifecycle 11: Stateful Components 12: Data Interchange and the JSON Data Format	Lab 03: Fetching Data From a JSON-based API Requires: Lesson 8, 9, 10	Q4
5	Oct 2	13: Async Programming, ES6 Promises & Fetching Data 14: The Effect Hook & React DOM Events 15: Forms in React	Lab 04: Adding a Form to Your Application & Submitting the Form Requires: Lesson 11, 12, 13	Q5
6	Oct 9	16: Review / Catchup 17: Form Submission and Conditional Rendering 18: UX Design	Lab 05: Material UI and React Router Requires: Lesson 14, 15	Q6
7	Oct 16	19: Client-Side URL Routing 20: State Management 21: Node JS & Create NextJS App	Lab 06: SOP, AJAX, XSS, SQLi Requires: Lesson 16, 17	Q7
8	Oct 23	22: Jest, React Testing Library 23: MERN Stack Overview & NodeJS 24: MERN Stack Express / React / Mongo	Lab 07: NodeJS, Jest and React Testing Requires: Lesson 18, 19	Q8
9	Oct 30	25: NextJS - MongoDB 26: NextJS - App Routing 27: Chat GPT API	Lab 08: MERN Stack Requires: Lesson 23, 24	Q9
10	Nov 6	28: Chat GPT Prompts 29: Chat GPT Conversations 30: Q&A	Project: Chatbot Milestone 1 -- Send & Receive Requires: Lessons 1-28	
11	Nov 13	31: Store in DB, Fetch from DB 32: Q&A 33: Q&A	Project: Chatbot Milestone 2 -- Store & Fetch Requires: Lessons 1-31	
12	Nov 20	34: Security / Forms, Authentication, Tokens 35: Q&A 36: Q&A	Project: Chatbot Milestone 3 -- Login & Security Requires Lessons 1-34	
13	Nov 27	37: Performance Optimization 38: Deployment with Docker 39: Deployment with render.com	Project: Chatbot Milestone 4 -- UI & Performance Requires: Lessons 1-37	Q10
14	Dec 4	40: Review W1-5 41: Review W6-9 42: Review W10-13	Project Due	
15	Dec 11	Final Exam (Theoretical & Practical)		

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced noticed is required. Deadlines scan be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
Lab Assignments Must achieve a 55% minimum average and complete all labs.	20%
Quizzes Ten, at-home open book quizzes. Two opportunities to complete each quiz.	10%
Term Project Mandatory 55% completion.	20%
Final Exams Closed-book theoretical worth 15% & Open-book practical worth 35%. Must have a combined minimum average of 55% to pass the course.	50%
TOTAL	100%
Lecture Participation Completion of 20 lecture in-class examples.	5% BONUS

If you have a concern about a grade that you have received for an evaluation, please see instructor as soon as possible. Refer to the [Grade Review and Appeals](#) policy for more information.

<https://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

COURSE GUIDELINES & EXPECTATIONS

Late assignments and/or labs will not be accepted, except by the instructor's prior written permission or in the presence of a dire and documented short-term medical or family emergency. Student must complete **all** labs.

Students must achieve all of the following in order to pass the course.

- a minimum 55% average on all labs
- all labs must be completed
- a minimum 55% on the term project
- a minimum 55% combined average on the final exam

Must achieve a C (60%) in the course to use as a pre-requisite.

SCHOOL OR DEPARTMENTAL INFORMATION

Supplemental department policies:

Grade review: You have 7 days after marks are posted to review with your instructor.

Academic Integrity Violations:

- 1st violation: **minus the weight of the deliverable** and a note on your departmental file.
- 2nd violation: F in the course
- 3rd violation: Student Conduct Policy E-2.5 is applied

Missed Examinations/Quizzes: If a student misses a quiz, project or an exam, a mark of zero will be assigned unless there are extenuating circumstances. You must provide a note from a medical practitioner (Doctor, Nurse, Psychologist, Counsellor, etc.) In such cases, the proportion of grade assigned to the missed quiz or exam will be added to the proportion assigned to the final exam.

Electronic Devices: The school's policy regarding electronic devices is that any student who has a cell phone or other unauthorized electronic device (ie. ipad, laptop, playbook, etc.) on their person or around their desk during a closed-book exam will be guilty of cheating and will receive a grade of "F" for the course.

STUDENT RESPONSIBILITY

Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

SUPPORTS AND SERVICES FOR STUDENTS

Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

Support Service	Website
Academic Advising	http://camosun.ca/advising
Accessible Learning	http://camosun.ca/accessible-learning
Counselling	http://camosun.ca/counselling
Career Services	http://camosun.ca/coop
Financial Aid and Awards	http://camosun.ca/financialaid
Help Centres (Math/English/Science)	http://camosun.ca/help-centres
Indigenous Student Support	http://camosun.ca/indigenous
International Student Support	http://camosun.ca/international/

Support Service	Website
Learning Skills	http://camosun.ca/learningskills
Library	http://camosun.ca/services/library/
Office of Student Support	http://camosun.ca/oss
Ombudsperson	http://camosun.ca/ombuds
Registration	http://camosun.ca/registration
Technology Support	http://camosun.ca/its
Writing Centre	http://camosun.ca/writing-centre

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the “Attendance” section under “Registration Policies and Procedures” (<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun’s Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student’s right to choose what is right for them. For more information see Camosun’s Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and camosun.ca/sexual-violence. To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-3703841

Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College’s Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College’s expectations of academic integrity and student behavioural conduct.

Changes to this Syllabus: Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.