
Course Outline

Introduction to Internet application development; emphasis on computer science fundamentals of technologies underlying web applications. Topics include: scripting and functional languages, language-based virtual machines, database query languages, remote procedure calls over the Internet, and performance and security concerns in modern distributed applications.

Course Information

Instructor Name	Alina Shaikhet
Contact Information	alina.shaikhet@carleton.ca
Lecture Hours	Mondays and Wednesdays 8:35 – 9:55 online (there are pre-recorded lectures)
Course Website	https://www.carleton.ca/culearn/
Course Forum	Discord server (link is available on the course website)
Course GitHub	Link will be posted soon

Course Delivery

This course will be delivered in an asynchronous manner. Required lecture and tutorial material will be delivered via pre-recorded videos. Scheduled lecture and tutorial times will be used to deliver supplementary material and activities, as well as for further discussion of course concepts, practice problems, and course projects. Where possible, scheduled activities will be recorded and shared with students for later use. The instructor, lab coordinator, and TAs will be available via Discord during scheduled hours to answer questions and clarify topics. Students will be required to use an alias that includes their first and last name, as listed on cuLearn, in the course Discord and in any other course meetings or activities (Zoom, etc.).

Required Textbook

There will be no required textbook for this course. A good introductory resource for the basics of the Javascript, HTML, and CSS that we will be using in the course is <https://www.w3schools.com/>. Additional resources will be posted in the course Discord server, on cuLearn, and on the course GitHub throughout the term. If you are looking for a good introductory Javascript/Node.js book, I would recommend the most recent editions of either:

 "Eloquent Javascript" by Marijn Haverbeke (focus is largely on Javascript and functional programming)

 "Beginning Node.js" by Basarat Ali Syed (more relevant to this course, a bit out of date)

The course will also offer a zyBook to students. Information regarding the zyBook will be shared on cuLearn and in the course Discord server.

Assessment Scheme

Your performance in this course will be assessed using several components. These include **three (3) project check-ins in meetings, one (1) course project, as well as community participation throughout the term**. The grades you achieve on these components will be weighted using the following scheme:

Project Check-Ins (3 × 10% each)	30%
Course Project	50%
Community Participation	20%

Some preliminary details of each assessment item are provided in the following sections of this document. More information on each will be provided as the course progresses.

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Course Project

The course project will be a term-long assignment that will involve all of the key concepts and tools learned throughout the course. Projects can be completed individually or in pairs. Students will be able to select one project to work on out of a set of provided projects. Students will be required to confirm whether they will be working individually or in a pair, as well as what project they intend to complete, before the end of October 16th. After this date, changing from a pair project to an individual project or vice versa, or changing the selected project, will not be permitted. Pair projects will have higher expectations, which will be outlined in the project documents. The final project will also require students to attend a 20-30 minute oral defense of their project during the exam session (December 12th-23rd). Scheduling of these defenses will be flexible to accommodate possible conflicts with scheduled and other take-home exams.

Project Check-Ins

Project check-ins will involve meeting with a TA to discuss and receive feedback about the state of your project. Each student or pair will be required to book an available time with a TA in advance of the check-in. The goals of the project check-ins are to verify that the project is progressing at an appropriate rate, review the overall design and quality of the implementation, discuss/critique possible design decisions, and identify a plan for the project to proceed until the next check-in.

Community Participation

The community participation portion of the grade will evaluate your participation in the current course offering, your contributions to the course learning materials and learning of others, as well as any contributions you make to the study of web development at Carleton throughout the term, including participation in activities of the Carleton Web Development Club. In order to qualify for this portion of the grade, these contributions must be made during the term and must be something that can be tracked and validated by TAs, the lab coordinator, or the instructor. Students will be required to submit a report detailing their participation at the end of the term.

Topics Covered

Below is a summary of topics the course will cover:

- Web Concepts, HTTP
- Javascript
- Functional Programming and Closures
- Markup Languages (e.g., HTML, CSS, XML, Bootstrap)
- Synchronous vs Asynchronous function calls
- Client- and Server-side coding in Javascript
- Javascript execution environments: Browsers and Node.js
- Node.js and the NPM system
- JSON databases (using MongoDB), and possibly SQL databases (using SQLite)
- Server-side templating (using Pug, etc.)
- Sessions and Cookies, AJAX, Web Sockets
- Cloud deployment and hosting (e.g., OpenStack, Heroku)

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University Policies

Student Academic Integrity Policy

Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties, which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Some examples of offences are plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found in the Undergraduate Calendar. For more information, including the Standard Penalty Guideline, see <https://science.carleton.ca/academic-integrity/>.

Plagiarism

As defined by the Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science.

Unauthorized Co-operation or Collaboration

Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.

Academic Accommodations for Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the [Paul Menton Center website](#).

Religious Obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit [the Equity Services website](#).

Pregnancy Obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit [the Equity Services website](#).

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and where survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

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Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, [see the policy](#).

Medical Certificate

The following is a link to the official medical certificate accepted by Carleton University for the deferral of final examinations or assignments in undergraduate courses. To access the form, please go to <http://www.carleton.ca/registrar/form>. For more information on academic accommodation, please contact the departmental administrator or visit: students.carleton.ca/course-outline

Undergraduate Academic Advisor

The Undergraduate Advisor for the School of Computer Science is available in Room 5302C HP, by telephone at 520-2600, ext. 4364 or by email at undergraduate_advisor@scs.carleton.ca. The undergraduate advisor can assist with information about prerequisites and preclusions, course substitutions or equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisor will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and the Writing Tutorial Services.

You must also read: <http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

Additional Notes

Including the time spent viewing lectures, completing practice problems, and working on other course material, **students can expect to spend at least ten (10) hours per week on this course**. Students are asked to pose all questions related to course content using the official course Discord server. Students should not email the instructor directly unless the question contains confidential information or is of a personal nature.

The instructor will attempt to answer every student email received within 48 hours of the time the message was received, unless the email requests information that has already been addressed in the course Discord server or in the course outline. All emails regarding the course should be sent from your Carleton email account. To ensure that all announcements are received, **students are expected to check their Carleton email on a daily basis**.

All materials created for this course (including, but not limited to, lecture notes, in-class examples, tutorial exercises, assignments, examinations, and posted solutions) remain the intellectual property of the instructor. These materials are intended for the personal and non-transferable use of students registered in the current offering of the course. **Reposting, reproducing, or redistributing any course materials, in part or in whole, without the written consent of the instructor, is strictly prohibited.**

Students are invited to discuss any concerns with the Instructor at the earliest opportunity.