DALHOUSIE UNIVERSITY | FACULTY OF COMPUTER SCIENCE

CSCI 1170 | Introduction to Web Design & Development

Course Syllabus (Fall Semester 2023)

Acknowledgements

Dalhousie University and the course instructors are located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all treaty people.

We recognize that African Nova Scotians are a distinct people whose histories, legacies, and contributions have enriched the part of Mi'kma'ki, currently known as Nova Scotia since 1604.

Course offering and instructor information

Course instructors, lecture schedules, and office hours:

Dr. Raghav V. Sampangi

- Section 02 (WF 13:05 – 14:25, CHEB C170)
- Note that the lectures are in-person.
- In-person office hours on Tuesdays (12:30pm to 2:00pm, in Room 222, Goldberg building) Alternatively, online/in-person by appointment: https://calendly.com/RaghavSampangi

Dr. Mayra Barrera Machuca

- Section 01 (WF 14:35 – 15:55, James Dunn 117)
- Note that the lectures are in-person.
- Online office hours on Mondays, 5:00pm to 6:00pm, by appointment only: https://tinyurl.com/Mayra-1170-officeHours

Labs:

Lab B01

- M 17:35 – 18:55, Tupper Theatre B

Lab B02

- F 14:35 – 15:55, CHEB C170

Course website: https://dal.brightspace.com/

Course email: csci1170@dal.ca

Course textbook and reference material:

- This course does not have a required textbook.
- We will refer to material from Mozilla Developer Network and W3Schools for all learning and discussions in the course.

Course interactions: (See Course Communication Section on Page 6)

- All asynchronous course interactions and discussions regarding assignments, lectures, and labs will take place on Microsoft Teams.
- *All course announcements will be posted on Brightspace & Teams.*
- Please join the course space on Teams by using this code: **f8bnqjb**

Image source:
Galea Dacian, https://www.iconfinder.com/icons/376092/code_coding_developer_development_editor_html_monitor_icon
Philosoraptor Meme Template, https://www.kapwing.com/explore/philosoraptor-meme-template

This document contains

Course overview: what is this course all about?

This course introduces students to key web concepts and skills for designing, implementing, and maintaining web content. Topics include introduction to the Web, UI and UX best practices, client-side web programming paradigms such as HTML, cascading style sheets (CSS), and dynamic content/interactive website development using JavaScript/jQuery, and web content organization and maintenance. Prior programming experience is assumed.

Pre-requisites: none.

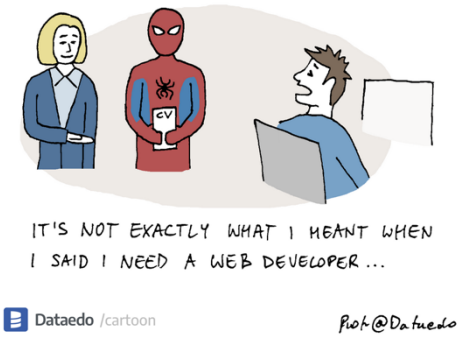
If I have concerns/questions about the course material, what do I do? It is perfectly natural to have concerns or questions. Learning something new can feel uncomfortable.

Always remember: it is a good thing to ask questions. Feel free to email get in touch with the instructors via (csci1170@dal.ca) if you have any questions.

You can also reach out to your TAs during labs or the course representative if you prefer, and they can check with the instructors on your behalf as well.

Course objectives

By the end of the course, you will be able to…



1. Have a general understanding of the way the web works, as it pertains to website building, linking, hosting, and data storage.
2. Be familiar with appropriate network terminology.
3. Apply fundamental UI/UX principles to critically evaluate websites and design usable layouts for websites.
4. Have a knowledge of general principles of website accessibility, usability, and SEO.
5. Be familiar with the software necessary to construct interactive websites.
6. Have a working understanding of the HTML, CSS, JavaScript, and jQuery languages – the computer languages required to construct interactive websites and web applications.
7. Use GUI programming concepts necessary to creative interaction on the web such as event handling and constraint-based layout management.
8. Be familiar with techniques for input validation and data sanitization.
9. Identify error conditions in interactive websites and implement error handling conditions.
10. Understand the differences between web programming and general-purpose programming and know the constraints that the web puts on developers.
11. Have a knowledge of client-side security capabilities.
12. Have a knowledge of the common types of vulnerabilities and attacks in web applications and understand the defenses against them.
13. Possess basic problem-solving skills relatable to web programming.
14. Be introduced to technologies required to build and maintain larger, more complex websites.

Image source:
Piotr Kononow, https://dataedo.com/cartoon/web-developer

What are some "things" we will learn in this course?

A.k.a. tentative high-level topics that we will discuss…

- Internet and the Web
  - Networking fundamentals
  - The World Wide Web (WWW)
  - Communication on the Web
- Web programming
  - Hypertext Markup Language (HTML)
  - Cascading Style Sheets (CSS)
  - JavaScript & jQuery
  - Coding web pages with static, fluid, responsive, and adaptive layouts
- Elements of design
  - Designing interactions for the Web
  - Usability and user experience
- Accessibility
- Search Engine Optimization (SEO)
- Interacting with the server using Asynchronous Communication APIs and JSON
- Error handling and debugging
- Form validation and security
- Filtering, searching, and sorting

Image source:
imgflip.com

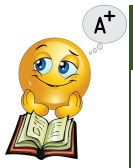
Important dates	
General important dates	Please refer to **https://www.dal.ca/dates** for a list of all Dal important dates and link to fee refund schedules. • Reading Week (no classes): November 13--17, 2023 • Last date to drop course without a “W”: October 4, 2023 • Last date to drop course with a “W”: November 2, 2023
Assignment (Ax) due dates *(All times are in Halifax/Atlantic time)*	This course has **4 applied web design and development assignments** (see *Assignment submission policy* on page 6 for available accommodations and the *Course grading scheme* on page 7 for details on how these will be graded). These assignments are due on: • A1: 11:59pm on September 29, 2023 • A2: 11:59pm on October 20, 2023 • A3: 11:59pm on November 10, 2023 • A4: 11:59pm on December 3, 2023
Lab (Lx) due dates *(All times are in Halifax/Atlantic time)*	Labs will include concept design and coding activities and will feature time for assignment help. Lab requirements will be announced at the start of each week and will be due at 11:59pm on the Friday of that week.
Quizzes (Qx) *(All times are in Halifax/Atlantic time)*	There are **4 applied/concept quizzes** in this course. They will be held during **lecture times** the following dates: • Q1: September 22, 2023 (Network concepts, HTML) • Q2: October 13, 2023 (HTML, CSS) • Q3: November 3, 2023 (HTML, CSS, JavaScript) • Q4: November 24, 2023 (HTML, Advanced CSS, JavaScript)
Final exam	To be scheduled by the registrar and held during the exam period in December.

Assignment submission policy

1. All submissions are due at 11:59pm (Atlantic time, Halifax) unless otherwise noted in the description and/or requirements of the specific assignment/lab/activity.
2. All submissions must be submitted on Brightspace or otherwise as instructed.
3. The *Life Happens* clause for individual assignments (Ax):
   a. For individual assignments (**applies to Ax only**), students have an extra 72 hours (i.e., grace period or submission window) from the deadline to submit individual assignments.
   b. Example: if an assignment is due at 11:59pm on Friday, September 29, with the Life Happens clause, students will be able to submit it until 11:59pm on Monday, October 2.
   c. Students do not have to request for this extension – it is available by default to everyone.
   d. This clause **does not apply** for lab submissions or quizzes or other participation activities during class.
4. With 72-hour extensions available with the Life Happens clause, the Student Declaration Policy **does not apply** to Ax.
5. If students have any accommodations set up through the Dalhousie Accommodations Centre, please contact the instructors **BEFORE the original deadline** to discuss accommodations.

Course format and communication

1. Content will be delivered via a combination of lectures, labs/tutorials, and interactive group exercises. All lectures and labs will begin in in-person mode. The lectures will be recorded.
2. We will be using the following tools for this course:
   a. **Brightspace:** as the official course website.
   b. **Microsoft Teams:** as the communications & discussions tool.
   Note – Microsoft Teams will be used for everything (all announcements, discussions, any group work, etc.) in this course. Please download the desktop and/or mobile app to stay up to date.
3. Students must ask the instructor permission before personally recording class lectures.
4. Course emails: Course emails, if any, will only be sent to the student's Dalhousie email address. It is the student's responsibility to check their Dal email on a daily basis.



Course grading scheme

Participation, labs, & iterative learning
• Learning happens throughout the term and iteratively, i.e., students learn iteratively by working on various assignments and lab activities.
• This grading item will cover **participation aspects (6%)** such as:
  ○ Submitting activities assigned/covered during lectures via lecture participation submission dropboxes on Brightspace by the end of the lecture day.
  ○ Submitting assignment progress via lab/progress submission dropboxes on Brightspace by the end of the week (when specified/prompted).
• This grade item will also include **labs (9%)**. There are 3 lab exercises during the term, which you are expected to work on and submit by the specified deadlines.
	15%

Quizzes (Qx) • There are 4 quizzes in the course throughout the term. • The quizzes will be scenario-based/applied in nature and may feature some questions that may test conceptual understanding (through either multiple choice or descriptive answers). The quizzes will test students' knowledge of concepts covered in the course and application knowledge gained through assignments/lab. • *Students must secure a passing grade in each quiz to be eligible to pass the course*. • *Notes (added on Sept 12, 2023)*: ○ Best 3 grades out of 4 tests will be considered towards the final grade.	**40%**
Assignments (Ax) • There are 4 assignments in the course. Best 3 out of 4 assignment submissions will be considered towards the final grade for the course. • See page 8 for details on how assignments will be graded.	**15%**
Final exam • The final exam will test students' knowledge of concepts covered in the course and application knowledge gained through assignments/lab work. • The final exam will be scenario-based/applied in nature and may feature some questions that may test conceptual understanding (through either multiple choice or descriptive answers). • *Students must secure a passing grade in the final exam to be eligible to pass the course.*	**30%**

Notes about your grades:

1. This is a core course for the BCS and BACS programs. Please consult with your academic advisors for any changes in passing grades and/or dependencies on other courses.
2. As of 2015, a minimum grade of C must be achieved in all required CS courses.
3. As of 2019, students who receive a grade lower than C in the same required CS course twice, will face dismissal from the university.
4. The grade conversion scale in Section 17.1 of the Academic Regulations, Undergraduate Calendar will be used.
5. It is up to the discretion of the instructor to use remote proctoring for any online testing. Students may be required to download proctoring software onto their devices. Students who cannot meet system requirements for remote proctoring should contact the instructor for an alternate assessment. (Typical system requirements are: (i) Mac OS or Windows, (ii) a web-cam, and (iii) an internet connection.)

Assignment grading

This course features a different way of grading assignments. *Please note that this may be different from how assignments are graded in other courses.* If students have any questions about the grading scheme, please contact the instructors as soon as possible.

- Each assignment is evaluated to assess student work for the learning they have demonstrated, with the objective of providing feedback for iterative and ongoing learning.
- Assignments have detailed requirements that are organized into functionalities of the web site.
- For each assignment, a student will:
    - Get a grade of **Completed & Submitted**, if they have *completed all requirements specified* and *submitted the assignment before the deadline*.
    - Get a grade of **Incomplete & Submitted**, if they have *submitted the assignment before the deadline* and have only *completed some of the requirements, but not all.*
    - Get a grade of **Not submitted**, if they have not submitted the assignment.
- The final 15% of the assignment grade in the grading scheme will be computed as follows:
    - Students are eligible to receive the full **15/15 of the assignment grade**, if they receive a grade of *Complete & Submitted* for at least 3 out of 4 assignments.
    - Students are eligible to receive **10/15 of the final assignment grade**, if they receive a grade of *Complete & Submitted* for at least 2 assignments but not 3.
    - Students are eligible to receive **6/15 of the final assignment grade**, if they receive a grade of *Complete & Submitted* for at least 1 assignment but not 2, and a grade of *Incomplete & Submitted* for at least 1 assignment.
    - Students are eligible to receive **3/15 of the final assignment grade**, if they receive a grade of *Incomplete & Submitted* for at least 3 assignments and have not completed any assignment.
    - If students do not submit any assignment, they will get a grade of **0/15**.

Image source:
mystickermania.com

Policy on Using AI Tools (e.g., ChatGPT, Copilot, etc.)

1. Remember…
    a. Assessments, i.e., assignments, lab/lecture activities, quizzes, etc., in this course are designed to assess a student's understanding of the concepts covered in the course.
    b. It is the student's responsibility to honour Dalhousie's Academic Integrity policy and ensure that they submit only the work that is originally developed by them.
    c. Students may be asked by the course instructors to use some AI tools or prescribed software libraries as a starting point to the assignment solution or the learning activity. In such cases, students are required to include appropriate citations and notes on what tools were used, how such tools were used, and whether they were used based on assignment instructions or with explicit permission from the course instructors.

2. Re. using ChatGPT or Copilot. In general, it is…
    a. **Okay** to use AI tools like ChatGPT as learning support. For example, if a student would like to use such a tool in addition to the recommended material such as Mozilla Developer Network or W3Schools web development content, it is okay.
    b. **Not okay** to submit code generated by AI tools like ChatGPT or Copilot as part of assignment solutions. ***Unless otherwise explicitly stated in the requirements or instructions****, no assignment submission must include code generated by AI tools*. This is a foundational course on web development, and if students submit code generated by AI tools, that is a violation of Dalhousie's Academic Integrity Policy.
    c. Again, students are reminded that assignments and participatory activities are for formative learning, i.e., to learn by hands on application and receive feedback towards continuous/iterative learning. This is reflected in our assignment grading scheme as well.
    d. **Note:** any code or text you share with AI tools are used by the tool in its learning process, i.e., if you have developed something new by yourself and you submit it to tools like ChatGPT, it is likely that what you wrote will be reused by it to respond to other users. ***Remember to never share personal or confidential information with either search engines or AI tools.***

3. During lectures and labs:
    a. Your instructors and/or TAs may demonstrate the use of tools such as ChatGPT or Copilot to support web development during lectures and/or labs. You may also be given exercises to practice using AI tools and prompts to generate appropriate responses from such tools.
    b. This is done keeping in mind that these tools are emerging trends, and it would be wise to learn how to incorporate them in general problem solving, and our design and development practices. However, remember that these tools are not readily available to everyone, and lack of access to a subscription may – at times – be limiting in what features are available generally; thereby making such tools not fully equitable.

University Expectations, Policies, and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate.
https://academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=111&loadusecredits=False

Academic standards

Failure to properly attribute sources in your work will be treated as an academic standards issue and points may be deducted for not following citation requirements.

a. For example, forgetting to quote text taken from other sources, failure to include in-text citations, or a failure to include required information in the citations or references.
b. Please see the resources on proper citation provided by the Dalhousie Writing Center (https://dal.ca.libguides.com/c.php?g=257176&p=5001261):

Please note that if it appears that the error was made with intent to claim other people's work as your own such as a lack of both citations and references, an allegation of plagiarism will be submitted to the Faculty Academic Integrity Officer, which could result in consequences such as a course failure.

Academic Integrity Policy

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect. As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. (read more: http://www.dal.ca/dept/university_secretariat/academic-integrity.html).

Use of Plagiarism Detection Software

All submitted code may be passed through a plagiarism detection software, such as the plagiarism detector embedded in Codio, the Moss (https://theory.stanford.edu/~aiken/moss/) Software Similarity Detection System, or similar systems. If a student does not wish to have their assignments passed through plagiarism detection software, they should contact the instructor for an alternative. Please note, that code not passed through plagiarism detection software will necessarily receive closer scrutiny. https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/policy-repository/OriginalitySoftwarePolicy.pdf.

Culture of Respect[1]

Every person has a right to respect and safety. We believe inclusiveness is fundamental to education and learning. Misogyny and other disrespectful behaviour in our classrooms and labs, on our campus, on social media, and in our community is unacceptable. As a community, we must stand for equality and hold ourselves to a higher standard.

What we all need to be ready to do:

1. **Be Ready to Act:** This starts with promising yourself to speak up to help prevent it from happening again. Whatever it takes, summon your courage to address the issue. Try to approach the issue with open-ended questions like "Why did you say that?" or "How did you develop that belief?"
2. **Identify the Behaviour:** Use reflective listening and avoid labeling, name-calling, or assigning blame to the person. Focus the conversation on the behaviour, not on the person. For example, "The comment you just made sounded racist, is that what you intended?" is a better approach than "You're a racist if you make comments like that."
3. A**ppeal to Principles:** This can work well if the person is known to you, like a friend, sibling, or co-worker. For example, "I have always thought of you as a fair-minded person, so it shocks me when I hear you say something like that."
4. **Set Limits:** You cannot control another person's actions, but you can control what happens in your space. Do not be afraid to ask someone "Please do not tell racist jokes in my presence anymore" or state "This classroom is not a place where I allow homophobia to occur." After you have set that expectation, make sure you consistently maintain it.
5. **Find or be an Ally:** Seek out like-minded people that support your views, and help support others in their challenges. Leading by example can be a powerful way to inspire others to do the same.
6. **Be Vigilant:** Change can happen slowly, but do not let this deter you. Stay prepared, keep speaking up, and do not let yourself be silenced.

[1] Source: Speak Up! © 2005 Southern Poverty Law Center. First Printing. This publication was produced by Teaching Tolerance, a project of the Southern Poverty Law Center. Full "Speak Up" document found at: http://www.dal.ca/dept/dalrespect.html. Revised by Susan Holmes from a document provided April 2015 by Lyndsay Anderson, Manager, Student Dispute Resolution, Dalhousie University, 902.494.4140, lyndsay.anderson@dal.ca www.dal.ca/think

University Statements

Internationalization

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." https://www.dal.ca/about-dal/internationalization.html

Accessibility

The Student Accessibility Centre is Dalhousie's centre of expertise for matters related to student accessibility and accommodation. If there are aspects of the design, instruction, and/or experiences within this course (online or in-person) that result in barriers to your inclusion please contact: https://www.dal.ca/campus_life/academic-support/accessibility.html for all courses offered by Dalhousie with the exception of Truro.

Conduct in the Classroom — Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion — Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2). (read more: http://www.dal.ca/cultureofrespect.html)

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution. (read more: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-con.html)

Fair Dealing Policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. (read more: https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html)

Student Use of Course Materials

These course materials are designed for use as part of the CSCI courses at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g., uploading material to a commercial third-party website) may lead to a violation of Copyright law.

Learning and Support Resources

Please see https://www.dal.ca/campus_life/academic-support.html