

Course Syllabus

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Overview

An introduction to software development on the web. The course covers the development of programs that operate on the web and survey of technological alternatives, with emphasis on modern web development technologies. Concepts, including the Internet and the web, static client content, dynamic client content, dynamically served content, n-tiered architectures, web development processes, and security on the web, are discussed. Assignments involve increasingly more complex web-based programs, and the term ends with an open-ended project for students to showcase their mastery over the course content.

Learning outcomes

At the end of the course, you will:

- Understand the concept of web, servers, and clients
- Gain deep knowledge of various components in a modern website (back-end and front-end)
- Learn how to create a static website with HTML, CSS, and JavaScript
- Learn how develop the back-end of a website with Django
- Learn how to develop the front-end of a website with React

Requirements

- Programming experience & Python (CSC108)
- Advanced programming & OOP (CSC207 & CSC148)
- Basic shell & system programming (CSC209)
- **Corequisite** : Database systems (CSC343). Note that this is not strictly enforced, but highly recommended.

This course is suitable for anyone interested in learning web programming and may be seeking a relevant job in the future. It assumes no prior knowledge or experience in web development. So everything will be discussed from the very basics.

Course Information

Instructor:

Name: Kuei (Jack) Sun

Office: BA4204A

Office Hours: Available upon request (over Zoom or in-person)

Communications:

Course Email: csc309-2023-09@cs.toronto.edu (<mailto:csc309-2023-09@cs.toronto.edu>)

Please use the course email for personal issues, including grading related, such as assignment remark request, extension and special consideration requests. I try to respond to email by the end of the next day. However, due to volume, it may take longer, especially on weekends.

Course Forum: [Piazza \(https://piazza.com/utoronto.ca/fall2023/csc309\)](https://piazza.com/utoronto.ca/fall2023/csc309)

All course announcements will be made on Piazza. Please create an account and sign up to the course using the link above.

Lectures

All lectures will be held in-person at the locations indicated.

LEC0101 Not Recorded	Monday 10am - 11am [†] FE 230 (https://map.utoronto.ca/?id=1809#!m/494550)	Wednesday 10am - 11am FE 230 (https://map.utoronto.ca/?id=1809#!m/494550)	Friday 10am - 11am* FE 230 (https://map.utoronto.ca/?id=1809#!m/494550)
LEC0201 LEC2001	Monday 12pm - 1pm [†] MP 102 (https://map.utoronto.ca/?id=1809#!m/494490)	Wednesday 12pm - 1pm MP 102 (https://map.utoronto.ca/?id=1809#!m/494490) (https://map.utoronto.ca/?id=1809#!m/494470)	Friday 12pm - 1pm* MP 102 (https://map.utoronto.ca/?id=1809#!m/494490)

* There will be **no class on September 8th**. First day of CSC309 will start on Monday September 11th.

† There is no class on Thanksgiving (Monday October 8th).

Lecture Format

In the lectures, we will cover core material of the course that may show up on the midterm and the final. The last hour of every week's lecture will be focused on helping you with understanding the assignments or the projects. There are no tutorials in this course.

This course, including your participation, will be recorded on video and will be available to students in the course for viewing remotely and after each session.

Course videos and materials belong to your instructors, the University, and/or other sources depending on the specific facts of each situation, and are protected by copyright. In this course, you are permitted to download session videos and materials for your own academic use, but you should not copy, share, or use them for any other purpose without the explicit permission of the instructors.

For questions about recording and use of videos in which you appear please contact your instructors.

Textbook(s):

There are no textbooks for this course. You can Google related keywords to find reference manuals on each major topic. Midterm and final exam material will solely be sourced from the lecture notes.

Website and Discussion Board:

You will be able to find all course materials from this Quercus site. The Piazza discussion board (linked from Quercus) is required reading. Please use Piazza to ask general questions, and remember to search to check if someone else has already answered the question. The instructor and/or TAs will be monitoring it daily. Please do not ask general questions privately. Private posts are intended for showing personal work, e.g., source code, to the instructor/TA, or discussing personal matters. You may post anonymously if you are concerned about revealing your identity to the class. Please do not be afraid to ask questions. There is no such thing as a dumb question.

Marking Scheme

ITEM	WEIGHT
Lecture Exercises (x12)	0 %
Assignments (x3) <ul style="list-style-type: none"> • A1: 9% • A2: 9% • A3: 9% 	27 %
Term Project (x3 phases) <ul style="list-style-type: none"> • Phase 1: 9% • Phase 2: 9% • Phase 3: 18% <ul style="list-style-type: none"> ◦ Basic requirements: 9% ◦ Extra features: 9% 	36 %
Midterm Test	12 %
Final Exam	25 %

Detailed Description

Lecture Exercises (Optional):

There will be in-class exercises associated with the lectures during most classes. These will typically take the form of quizzes on Quercus. These exercises are optional and are available to help you practice the related course material. We strongly encourage you to do these exercises in class. We welcome questions about these activities during the synchronous lectures.

Programming Assignments (27%):

Over the term, you will complete 3 assignments that consist of problems that challenge your understanding of the concepts and will be auto-graded. **All assignments must be completed individually.** All assignments must be submitted by checking your work into your MarkUs repository. Each assignment is worth 9%.

Term Project (36%):

The project simulates a real-world website that you are likely to develop in the future as a freelance web developer. Even though the scope is considerably small, it is designed to give a sense about how creating a real website and being a full-stack developer would look like. For the project, you can make groups of up to **4 members**. You could also do it alone, but it is not recommended as the workload might be excessive for one person. The project is divided into 3 phases, with domains similar to the corresponding assignment.

Each phase is graded through an interview with a TA during which they work with your website to check if the requirements are implemented correctly. In normal circumstances, every member will receive identical grade. However, if you run into situations where some members are not contributing fairly to the project, you should contact the instructor via course email about the issue.

There are three phases to the project. Each phase has a weight of 9%.

At the end of the last phase, we will evaluate your **extra feature**, worth 9%. This is something you need to come up with on your own and it should be included in your earlier phases, although we will not mark it until the last phase. An extra feature is simply some feature that goes beyond the basic requirements of the project, for example, it could do some statistical analysis of your backend data and display it in a graphical format.

Midterm Test (12%):

There will be one 50-minute test, which should be completed during your regular lecture time slot. Midterm coverage will be the course content taught prior to reading week. It will be done completely online and **open book**. The exact detail of the midterm format will be released one week before the start of the reading week. You can do the midterm at home if you wish. However, I will be available the lecture

room during the regular time slot if you prefer to write in person. In this case, you will need to bring a laptop or tablet with Internet connectivity.

The midterm date will be **Friday November 3rd**, during your regular class time.

Final Exam (25%):

The Final Exam will be scheduled by Arts & Sciences in the final assessment period. It will cover all course material, including topics that were tested on the midterm test and questions about the assignments. The final exam format will be **online** and **open book**, and there *is no autofail* policy.

Remark Policy

If you feel there was an error in the marking of an assignment, you may request a remark through email to the course instructor. You must give a specific reason for the request, referring to a possible error or omission by the marker. Stating specific potential grading errors for your remark request is mandatory for us to even consider your request. However, we will review your entire work, not just the items you pointed out. Please keep in mind that your grade may stay the same, may increase, or may even decrease, after your remark request is assessed. Remark requests must be received **within one week** of when you received the grade for that item.

Special Consideration

Students experiencing illness or other emergencies that prevent them from being able to complete homework on time, or write a test, can request special consideration. You will be required to affirm that you are abiding by the [Code of Behaviour on Academic Matters](#)

(<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011>!

, in particular, to be aware that it is an academic offence

to engage in any form of cheating, academic dishonesty or misconduct, fraud or misrepresentation not herein otherwise described, in order to obtain academic credit or other academic advantage of any kind

That is, you must be truly experiencing an emergency, and acknowledge that to falsely claim so is an academic offence. Making a request does not guarantee that you will always be granted special consideration.

Late Work

All assignments and project milestones are submitted electronically and are due at **5:00 p.m. sharp** on the date of the deadline. Late submissions *will not be accepted*.

However, if you need an extension, please fill out this [Special Consideration Form](#) (<https://forms.office.com/r/CBazwiwhkY>). Requests for up to *two* (2) extra days to complete your assignments will *always* be granted. In the case of the project, your entire team will receive the

extension, but only once, i.e., not stacked. Please be reminded that it may take 1-2 business days to receive a notification that your request has been granted.

If you find yourself in a **serious medical or emergency situation** where a 2-day extension will not be sufficient, you should also fill out the [Special Consideration Form \(https://forms.office.com/r/CBazwiwhkY\)](https://forms.office.com/r/CBazwiwhkY). However, the form will ask you to provide an explanation of your circumstances, and this will be reviewed by course staff. We may follow up to request further documentation. You should also complete an Absence Declaration on ACORN when appropriate (see the [Arts & Science guidelines \(https://www.artsci.utoronto.ca/current/academics/student-absences\)](https://www.artsci.utoronto.ca/current/academics/student-absences)) and send the notification to the course email address. Note that special consideration is NOT always granted; such situations will be considered on a case-by-case basis.

Please be reminded that no exceptions will be granted for any sort of submission error. You are expected to submit at least one full day before the actual due date. Make sure you start early and have a good understanding of the assignment requirements to avoid any foreseeable or unforeseeable issues.

Students registered with Accessibility Services: if you would like to request an extension *longer than 2 days* based on your registered accommodations, please email the course email address before the original assignment due date to make that request and provide your letter from Accessibility Services.

Missed Midterm

In the event of an illness or other catastrophe that causes you to miss the midterm, please contact the course email address and provide an explanation. We may follow up to request supporting documentation. Please contact us before the midterm if at all possible, and at the very latest within one week of the midterm date. You should also declare your absence on Acorn, when appropriate (see the [Arts & Science guidelines \(https://www.artsci.utoronto.ca/current/academics/student-absences\)](https://www.artsci.utoronto.ca/current/academics/student-absences)) and send the notification to the course email address.

Religious Holidays:

If a religious holiday will keep you from completing any assigned work, please let us know as soon as possible (but no later than two weeks before the due date), and we will work out a mutually agreeable accommodation.

Academic Integrity

Honesty and fairness are fundamental to the University of Toronto's mission. Plagiarism is a form of academic fraud and is treated very seriously. Please refer to the University of Toronto [Academic Integrity website \(https://www.academicintegrity.utoronto.ca/\)](https://www.academicintegrity.utoronto.ca/) and read the [Code of Behaviour on Academic Matters \(https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019\)](https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019). Here are a few guidelines to help you avoid plagiarism.

Assignments

Assignments are **individual works** which means that you will not be allowed to seek advice from other students or copy/paste someone else's code, even open source codes from the internet. However, you are allowed to look at online resources, tutorials, and Q&A; websites over the course of solving the problems. The entire code must be written by yourself. Submitting AI generated code is strictly forbidden and any violation will be persecuted with the fullest extent of the regulation.

Project

Unlike the assignments, you are allowed to download packages or use open source codes from the internet for the project. However, sharing even a small piece of code to other teams is strictly prohibited (either giving to or taking from them). Online codes must include a reference to the webpage they are taken from.

Tests

Although all tests in this course are open book, you should only consult online manuals and lecture notes during the tests. Do not copy any code or answer from online forums such as Stack Overflow, Reddit, or generative AIs such as ChatGPT. You will be charged with academic offense if we discover students who submit identical pieces of code or phrases.


A Note on Generative AI




In this course, we actual encourage you to use tools like ChatGPT and GitHub co-pilot to help you with your assignments and projects. However, understand that its intended use is to help you learn the course material, and not do the work for you. E.g., you may look at the generated code, understand how it works, and then write your own version of the solution. Directly copying the code from ChatGPT will not help you with mastery of the course content, and in some cases the generated answers will be incorrect.








Accessibility Needs:

The University of Toronto is committed to accessibility. If you require accommodations for a disability or have any accessibility concerns about the course, the classroom, or course materials, please contact [Accessibility Services \(https://studentlife.utoronto.ca/department/accessibility-services/\)](https://studentlife.utoronto.ca/department/accessibility-services/) as soon as possible via email (accessibility.services@utoronto.ca

Course Summary:

Date	Details	Due
Sun Jan 22, 2023	 E2: Cascading Style Sheet (https://q.utoronto.ca/courses/314989/assignments/1102581)	due by 11:59pm

Date	Details	Due
Sun Jan 29, 2023	 E3: Introduction to Web Backend (https://q.utoronto.ca/courses/314989/assignments/1102582)	due by 11:59pm
Sun Feb 5, 2023	 E4: Django Templates and Models (https://q.utoronto.ca/courses/314989/assignments/1102585)	due by 11:59pm
Sun Feb 12, 2023	 E5: Custom Models and CRUD (https://q.utoronto.ca/courses/314989/assignments/1102580)	due by 11:59pm
Sun Feb 26, 2023	 E6: Django Form and REST framework (https://q.utoronto.ca/courses/314989/assignments/1102592)	due by 11:59pm
Sun Mar 5, 2023	 E7: JavaScript Basics (https://q.utoronto.ca/courses/314989/assignments/1102588)	due by 11:59pm
Sun Mar 19, 2023	 E8: jQuery and Advanced JavaScript (https://q.utoronto.ca/courses/314989/assignments/1102583)	due by 11:59pm
Sun Apr 2, 2023	 E10: Modern React Applications (https://q.utoronto.ca/courses/314989/assignments/1102584)	due by 11:59pm
Mon Apr 10, 2023	 E9: Introduction to React (https://q.utoronto.ca/courses/314989/assignments/1102591)	due by 11:59pm
Mon Apr 10, 2023	 E11: Web Deployment (https://q.utoronto.ca/courses/314989/assignments/1102587)	due by 11:59pm
Tue Apr 25, 2023	 Final Exam (https://q.utoronto.ca/courses/314989/assignments/1102586)	due by 5:01pm
Tue Oct 3, 2023	 A1: Static Web Page (https://q.utoronto.ca/courses/314989/assignments/1102593)	due by 5pm
Tue Oct 10, 2023	 P1: UI Design (https://q.utoronto.ca/courses/314989/assignments/1102598)	due by 11:59pm

Date	Details	Due
Tue Oct 31, 2023	 A2: Server-Side Scripting https://q.utoronto.ca/courses/314989/assignments/1102594	due by 11:59pm
	 Midterm https://q.utoronto.ca/courses/314989/assignments/1141462 (CSC309H1-F-LEC0101-20239)	due by 11am
Fri Nov 3, 2023	 Midterm https://q.utoronto.ca/courses/314989/assignments/1141462 (CSC309H1-F-LEC2001-20239)	due by 1pm
	 Midterm https://q.utoronto.ca/courses/314989/assignments/1141462 (CSC309H1-F-LEC0201-20239)	due by 1pm
Mon Nov 13, 2023	 P2: Django REST API https://q.utoronto.ca/courses/314989/assignments/1102599	due by 5pm
Tue Nov 28, 2023	 A3: Client-Side Scripting https://q.utoronto.ca/courses/314989/assignments/1102595	due by 5pm
Wed Dec 6, 2023	 P3: React Frontend https://q.utoronto.ca/courses/314989/assignments/1102600	due by 5pm