School of Computer Science
www.cs.mcgill.ca

<u>**Course Outline**</u>

Course Name:	Principles of Web Development COMP 307 – Winter 2020

Instruction:

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Website: MyCourses   Office hours: Tuesday 11:30 am – 12:30 pm

Credits:

2 credits

Motivation:

Developing the front and back end of web sites, together with comprehending the various paradigms, theories and current technologies involved in web development is an important and relevant skill to have for students graduating from computer science and planning to work as programmers.

Course Objectives:

Students wanting to work as web site developers will need to understand the concepts behind server-side execution, client-side execution, security, language paradigms, distributed processing, interpreters, deployment methods, web frameworks, the architecture of the Internet, and some of the latest techniques and technologies. This would include common practises and common programming languages.

Primary learning outcome: To get a clear understanding of the major principles & algorithms that underlie web development and receive practical hands-on experience through a project.

Secondary learning outcomes: After taking this course, the student should be able to: (1) identify the core technologies in web development and how they are architect-ed, (2) explain the paradigms and principles on which the core functions are built on, (3) be able to discuss major performance issues (data storage and run-time load), and (4) discuss the web technologies and techniques required for a particular target application.

Course Description:

The course discusses the major principles, algorithms, languages and technologies that underlie web development. Students receive practical hands-on experience through a project.

Primary Text:

Internet & World Wide Web: How to Program; Pearson; ISBN 978-0-13-215100-9

Additional Text:

Software Systems; Kendall hunt; ISBN 978-0-7575-9514-1

Evaluation:

Project	30%	Teams of 2-3 (last month)
Mini Assignments	30%	6 submissions (first two months)
Final Exam	40%	During the formal exam period

<u>Late work</u>: You will be notified in advance of assignment due dates. All assignments are due on My Courses at the indicated time and date. If you submit assignments late, you risk having your assignment rejected, in which case you will receive 0. You may not submit assignments via e-mail without the permission of the instructor.

<u>Additional Work</u>: Students with grades of D, F or J will not be given the opportunity to complete additional work to upgrade their grade.

<u>Supplemental Exam</u>: There will be no supplemental exam for this course.

Re-grading: Mistakes can occur when grading. Not surprisingly, requests for re-grading always involve those mistakes in which the student received fewer points than they deserved, rather than more points than they deserved. With that in mind: if you wish me to re-grade a question on an exam or assignment, I will do so. I reserve the right to re-grade other questions as well.

Cheating/Collaboration: Collaboration is encouraged but your discussions should be public in the sense that anyone including the professor should be allowed to listen in. Assignments are original works created by the student alone. You are permitted and encouraged to have conversations with other students concerning the contents of the assignments and how to do them, but your work must be original. If two or more assignments are found to be identical (or portions of assignments) then all parties will lose points. This includes the student who permitted their assignment to be copied. This includes written solutions and software source code.

Grading: All software solutions must compile with zero errors and must run to be graded. It does not need to run correctly for grading but it must run. If your program compiles with errors or does not run at all then you will receive zero points. The grader will not fix your code or look at the source code to give you partial grades.

Communication
Email: This is the best medium for private and important communication. I reply to email within 24 hours.

Appointments: Please email me if you would like to make an appointment.

Office Hours: See above for office hours. Students can come to those times without appointment.

Course Prerequisite: COMP-206

Course Co-Requisite: COMP-303

Tentative Course Schedule

WEEK	LECTURE	DESCRIPTION	WORK
Unit 1 – HTTP and Frontend Basics			
1	1	Introduction, motivation, TCP protocol	Course outline Prerequisites Chapter 1
	2	HTTP, HTTPS, Web Server	Assign 1 – Webserver
2	3	HTML, CSS, Responsive design	Chapter 2, 4
	4	JavaScript Basics, jQuery, canvas	Chapter 6 - 14 Assign 2 – Personal Webpage
Unit 2 – Dynamic Websites			
3	5	Apache, PHP, form, session, cookie, query string	Chapter 17, 19
	6	Database, PHP, MySQL, transaction	Chapter 18 Assign 3 – Dynamic Website
4	7	JavaScript: Ajax, json, xml	Chapter 15-16
	8	Vue.js, data binding	Assign 4 – Single-page Application
Unit 3 – Django Framework			
5	9	Django #1: url, model, form, static files, template, setting	
	10	Django #2: modelform, form validation, signals, migration, deployment	Assign 5 – Django Webapp
6	11	Websocket, Django channel	
	10	Building REST API, using 3rd party APIs	Assign 6 – Websocket
7	13	Course Project Discussion, Extra topics	
	14	Extra topics	
Unit 4 – Project and Presentations			
8	15	No class (work on final project)	
	16	No class (work on final project)	
9	17	No class (work on final project)	
	18	No class (work on final project)	
10	19	Project Presentation	Webapp overview Technical description Website architecture
	20	Project Presentation	
11	21	Project Presentation	

	22	Project Presentation	Demo of your website Q & A
12	23	Project Presentation	
	24	Project Presentation	
13	25	Project Presentation	
	26	Project Presentation	

Right to submit in English or French written work that is to be graded

In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

Classroom Rules: All electronic devices (cell phones and beepers) must be turned off or left on silent mode during class time.

Assignments Pickup: All assignments are submitted to and picked-up from My Courses.

Computing Resources: Trottier 3rd floor.

Examinations and Grading:

Students are responsible for all materials for the tests and exams, whether or not it is covered in class. Exams will be a combination of all types of questions based on all sources, and students may be required to integrate theoretical concepts from the text to substantiate their arguments.

No make-up tests or make-up assignments are allowed in this course.

If you are not satisfied with the grading of an assignment or mid-term test, you may request a review within 7 days of return. Indicate in writing or during a meeting with the instructor where and why you feel the marks are unjustified and give it back to your instructor for re-grading. Note that the entire assignment or mid-term test will be re-graded and your grade can go up or down (or stay the same) accordingly.

Calculators
Only non-programmable, no-tape, noiseless calculators are permitted. Calculators capable of storing text are not permitted in tests and examinations.

Dictionaries
Dictionaries are not permitted, but translation dictionaries are.

Handheld Devices
Handheld devices capable of storing text and having calculator functionality (e.g. Palm, etc.) are not permitted.

Additional Information:

The course slides are not meant as a complete set of notes or a substitute for a textbook, but simply constitute the focus of the lecture. Important gaps are left in the slides that are filled in during class, thus lecture attendance should be considered essential.

The material covered in the classroom will be used to supplement textbook readings.

Academic Integrity: *Code of Student Conduct*

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see *www.mcgill.ca/integrity* for more information).

L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples reseignements, veuillez consulter le site *www.mcgill.ca/integrity*).

Final Exam Policy: *Regulations*

Students should not make other commitments during the final exam period. Vacation plans do not constitute valid grounds for the deferral or the rescheduling of examinations. See the Centre Calendar for the regulations governing Examinations: http://www.mcgill.ca/student-records/exams/regulations/

Students are required to present their I.D. Card (with photo) for entrance to their examination.

Conflicts

If you are unable to write your final examination due to scheduling conflicts, you must submit a Final Exam Conflict Form with supporting documentation at least **one month** before the start of the final examination period. Late submissions will not be accepted. For details, see http://www.mcgill.ca/student-records/exams/conflicts/

Exam Timetable

Examination schedules are posted at the Centre and on the following page approximately 6-8 weeks before the examination period commences http://www.mcgill.ca/student-records/exams/

The Centre cannot provide examination dates over the telephone.

Email Policy: E-mail is one of the official means of communication between McGill University and its students. As with all official University communications, it is the student's responsibility to ensure that time-critical e-mail is accessed, read, and acted upon in a timely fashion. If a student chooses to forward University e-mail to another e-mail mailbox, it is that student's responsibility to ensure that the alternate account is viable.

Please note that to protect the privacy of the students, the University will only reply to the students on their McGill e-mail account.

Students Rights and Responsibilities:

Regulations and policies governing students at McGill University can be downloaded from the website: http://www.mcgill.ca/deanofstudents/rights/

Students Services and Resources:

Various services and resources, such as email access, walksafe, library access, etc., are available to students: http://www.mcgill.ca/stundet-records

Minerva for Students: http://www.mcgill.ca/minerva-students/

Note: In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.