

Course Outline

Course Name: Security & Usability (HTTP 5221)

Academic Period: 2024 - 2025

Faculty Availability:

Associate Dean: Ahmed

Sagarwala

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Schedule Type Code:

Land Acknowledgement

Humber College is located within the traditional and treaty lands of the Mississaugas of the Credit. Known as Adoobiigok [Adee-bee-goke], the "Place of the Alders" in Michi Saagiig [Mi-Chee Saw-Geeg] language, the region is uniquely situated along the Humber River Watershed, which historically provided an integral connection for Anishinaabe [Ah-nish-nah-bay], Haudenosaunee [Hoeden-no-shownee], and Wendat [Wine-Dot] peoples between the Ontario Lakeshore and the Lake Simcoe/Georgian Bay regions. Now home to people of numerous nations, Adoobiigok continues to provide a vital source of interconnection for all.

Equity, Diversity and Inclusion Statement

Humber College and the University of Guelph-Humber (Humber) are leaders in providing a learning, working and living environment that recognizes and values equity, diversity and inclusion in all its programs and services. Humber commits to reflect the diversity of the communities the College serves. Students, faculty, support and administrative staff feel a sense of belonging and have opportunities to be their authentic selves.

Faculty or Department	Faculty of Media & Creative Arts
Program(s)	Web Development (11491)
Course Name:	Security & Usability (HTTP 5221)
Pre-Requisites	HTTP 5110 + HTTP5122 OR HTTP5111
Co-Requisites	none
Equates	none
Restrictions	none
Credit Value	3
Total Course Hours	42

Developed By: Sean Doyle & Jemi Choi Prepared By: Sean Doyle

Approved by:

Ahmed Sagarwala



Humber Learning Outcomes (HLOs) in this course.

The HLOs are a cross-institutional learning outcomes strategy aimed at equipping Humber graduates with the employability skills, mindsets, and values they need to succeed in the future of work. To explore all the HLOs, please consult the [Humber Learning Outcomes framework](#).



Systems Thinking



Critical Thinking



Communication



Digital Fluency



Strategic Problem-Solving

Course Description

Students will learn techniques and industry-standard tools for creating secure, bug-resilient code. Accessibility standards and user experience evaluations round out this comprehensive course covering the testing of code and applications from unit testing through to usability testing.

Course Rationale

In today's world, security and accessibility for web applications can no longer be an afterthought, these techniques and strategies must be considered and applied in each line of code.

Program Outcomes Emphasized in this Course

Web Development (11491)

1. Determine and document requirements for web computing projects based on the effective application of stakeholder needs.
2. Prepare and present proposals and business plans for web applications that satisfy stakeholder requirements.
3. Design, model, implement and optimize accessible web solutions to meet client requirements and constraints, and align with standards and best practices.
4. Implement a development process to support consistency between development platforms and production platforms.
5. Test, troubleshoot and debug web applications to support requirements and meet Quality Assurance objectives.
6. Evaluate proposed solutions to optimize and improve web application based on usability testing and analysis.
7. Adhere to ethical, legal, and regulatory requirements and/or principles to develop and manage web applications

Course Learning Method(s)

- Problem Based Learning (PBL)
- Project Based Learning
- Lecture

Learning Outcomes

- Create code that follows set coding standards and conventions
- Create and execute tests to ensure code meets requirements
- Utilize testing frameworks to execute unit tests and end-to-end testing
- Evaluate a web application for security vulnerabilities
- Execute testing strategies on web applications
- Design, execute and create reports for usability tests
- Assess web applications for accessibility
- Implement accessibility strategies in web applications

Assessment Weighting

Assessment	Weight
Security	
Security Lab Exercises (x6)	25%
Security Assignments (x2)	25%
Usability	
Usability Lab Exercises (x3)	12%
Usability Assignments (x3)	38%
Total	100%

Modules of Study

Module	Course Learning Outcomes	Resources	Assessments
Moving From Basic to Intermediate JS	<ul style="list-style-type: none">• Create code that follows set coding standards and conventions	As provided by faculty.	<ul style="list-style-type: none">• In-Class Lab Exercise
Naming Conventions & Standards	<ul style="list-style-type: none">• Create code that follows set coding standards and conventions	As provided by faculty.	<ul style="list-style-type: none">• In-Class Lab Exercise
Test Design	<ul style="list-style-type: none">• Create and execute tests to ensure code meets requirements	As provided by faculty.	<ul style="list-style-type: none">• In-Class Lab Exercise
Testing Frameworks	<ul style="list-style-type: none">• Utilize testing frameworks to execute unit tests and end-to-end testing	As provided by faculty.	<ul style="list-style-type: none">• In-Class Lab Exercises and Assignment
Hacker Prevention	<ul style="list-style-type: none">• Evaluate a web application for security vulnerabilities	As provided by faculty.	<ul style="list-style-type: none">• In-Class Group Assignment
Ad Hoc Testing	<ul style="list-style-type: none">• Execute testing strategies on web applications	As provided by faculty.	<ul style="list-style-type: none">• In-Class Lab Exercise
Introduction to Usability	<ul style="list-style-type: none">• Design, execute and create reports for usability tests	As provided by faculty.	<ul style="list-style-type: none">• Group Assignment

Usability Testing	<ul style="list-style-type: none">Assess web applications for accessibility	As provided by faculty.	<ul style="list-style-type: none">Lab Exercises and Assignment
Accessibility	<ul style="list-style-type: none">Assess web applications for accessibilityImplement accessibility strategies in web applications	As provided by faculty.	<ul style="list-style-type: none">Lab Exercises and Assignment

Supplemental Resources

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Additional Tools and Equipment

- VS Code software (or another text editor for code, such as Notepad++ or Sublime)

Essential Skills

Section	Skills	Measurement	Details
Communication	<ul style="list-style-type: none">Reading	Reinforce and measure	<ul style="list-style-type: none">Lectures, exercises, group activities, and assignments.Exercises, assignments, and projects.
Numeracy	<ul style="list-style-type: none">Understanding and applying mathematical concepts and reasoning	Teach and measure	<ul style="list-style-type: none">Lectures, exercises, group activities, and assignments.Exercises, assignments, and projects.
Critical Thinking and Problem-Solving	<ul style="list-style-type: none">AnalysingSynthesisingDecision-MakingCreative and Innovative Thinking	Teach and measure	<ul style="list-style-type: none">Lectures, exercises, group activities, and assignments.Exercises, assignments, and projects.
Information Management	<ul style="list-style-type: none">Gathering and managing informationSelecting and using appropriate tools and technology for a task or projectComputer literacyInternet skills	Teach and measure	<ul style="list-style-type: none">Lectures, exercises, group activities, and assignments.Exercises, assignments, and projects.

Prior Learning Assessment & Recognition (PLAR)

Prior Learning Assessment and Recognition (PLAR) is the formal evaluation and credit-granting process whereby candidates may obtain credits for prior learning. Prior learning includes the knowledge competencies and skills acquired, in both formal and informal ways, outside of post-secondary education. Candidates may have their prior learning evaluated against the course learning outcomes as defined in the course outline.

To find out if this course is eligible for PLAR, and how this learning would be assessed, please contact the Program Coordinator for more details.

Academic Regulations

It is the student's responsibility to be aware of the College Academic Regulations. The Academic Regulations apply to all applicants to Humber and all current students enrolled in any program or course offered by Humber, in any location. Information about academic appeals is found in the [Academic Regulations](#).

Anti-Discrimination Statement

At Humber College, all forms of discrimination and harassment are prohibited. Students and employees have the right to study, live and work in an environment that is free from discrimination and harassment. If you need assistance on concerns related to discrimination and harassment, please contact the [Centre for Human Rights, Equity and Inclusion](#) or the [Office of Student Conduct](#).

Accessible Learning Services

Humber strives to create a welcoming environment for all students where equity, diversity and inclusion are paramount. Accessible Learning Services facilitates equal access for students with disabilities by coordinating academic accommodations and services. Staff in Accessible Learning Services are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. If you require academic accommodations, contact:

[Accessible Learning Services](#)

North Campus: (416) 675-6622 X5090

Lakeshore Campus: (416) 675-6622 X3331

Academic Integrity

Academic integrity is essentially honesty in all academic endeavors. Academic integrity requires that students avoid all forms of academic misconduct or dishonesty, including plagiarism, cheating on tests or exams or any misrepresentation of academic accomplishment.

Disclaimer

While every effort is made by the professor/faculty to cover all material listed in the outline, the order, content, and/or evaluation may change in the event of special circumstances (e.g. time constraints due to inclement weather, sickness, college closure, technology/equipment problems or changes, etc.). In any such case, students will be given appropriate notification in writing, with approval from the Dean (or designate) of the School.

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