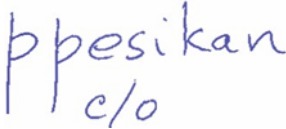


Course Outline

| | |
|--|--|
| School: | Eng. Tech. & Applied Science |
| Department: | Information and Communication Engineering Technology (ICET) |
| Course Title: | Client-Side Web Development |
| Course Code: | COMP 125 |
| Course Hours/Credits: | 56 |
| Prerequisites: | COMP 100, COMP 213 |
| Co-requisites: | N/A |
| Eligible for Prior Learning, Assessment and Recognition: | Yes |
| Originated by: | Joanne Filotti |
| Creation Date: | Summer 2015 |
| Revision Date: | Fall 2020 |
| Current Semester: | Summer 2021 |
| Approved by: |  |
| | <hr/> Chairperson/Dean |

Students are expected to review and understand all areas of the course outline.

Retain this course outline for future transfer credit applications. A fee may be charged for additional copies.

This course outline is available in alternative formats upon request.

Acknowledgement of Traditional Lands

Centennial is proud to be a part of a rich history of education in this province and in this city. We acknowledge that we are on the treaty lands and territory of the Mississaugas of the Credit First Nation and pay tribute to their legacy and the legacy of all First Peoples of Canada, as we strengthen ties with the communities we serve and build the future through learning and through our graduates. Today the traditional meeting place of Toronto is still home to many Indigenous People from across Turtle Island and we are grateful to have the opportunity to work in the communities that have grown in the treaty lands of the Mississaugas. We acknowledge that we are all treaty people and accept our responsibility to honor all our relations.

Course Description

Client-Side Web Development is the second course in a sequence of courses (COMP213, COMP125, COMP229, and a range of elective advanced web courses) designed to teach students all the important current concepts and technologies related to developing powerful Internet applications.

In this course the student will learn how to use both basic JavaScript syntax and its more advanced features like OOP, DOM, touch and mobile interfaces, Ajax, jQuery to build professional quality web applications.

Program Outcomes

Successful completion of this and other courses in the program culminates in the achievement of the Vocational Learning Outcomes (program outcomes) set by the Ministry of Colleges and Universities in the Program Standard. The VLOs express the learning a student must reliably demonstrate before graduation. To ensure a meaningful learning experience and to better understand how this course and program prepare graduates for success, students are encouraged to review the Program Standard by visiting <http://www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/>. For apprenticeship-based programs, visit <http://www.collegeoftrades.ca/training-standards>.

Course Learning Outcomes

The student will reliably demonstrate the ability to:

1. Use JavaScript with HTML elements
2. Work with JavaScript variables, data types and operators
3. Create and use JavaScript functions
4. Trace and debug errors in JavaScript programs
5. Control the browser and current document through the BOM and DOM
6. Perform validation and other preprocessing before form data is sent to the server
7. Use OOP techniques in JavaScript
8. Manipulate data with strings and arrays
9. Implement state information with hidden form fields, query strings, cookies, and Web Storage
10. Incorporate touchscreen support and mobile capabilities in web applications
11. Update dynamically web applications using Ajax
12. Use the jQuery library to build web applications

Essential Employability Skills (EES)

The student will reliably demonstrate the ability to*:

1. Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.
2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.
4. Apply a systematic approach to solve problems.
5. Use a variety of thinking skills to anticipate and solve problems.
7. Analyze, evaluate, and apply relevant information from a variety of sources.
10. Manage the use of time and other resources to complete projects.

**There are 11 Essential Employability Skills outcomes as per the Ministry Program Standard. Of these 11 outcomes, the following will be assessed in this course.*

Global Citizenship and Equity (GC&E) Outcomes

The student will reliably demonstrate the ability to*:

2. Identify beliefs, values and behaviours that form individual and community identities and the basis for respectful relationships.

**There are 6 institutional Global Citizenship & Equity outcomes. Of these 6 outcomes, the following will be assessed in this course.*

Methods of Instruction

Lecture,
demonstrations and
hands-on exercises,
class discussions

Text and other Instructional/Learning Materials

Text Book(s):

Vodkin, S. 2015. JavaScript: The Web Warrior Series, Sixth Edition
Cengage Learning
ISBN-10: 1-305-07844-6
ISBN-13: 978-1-305-07844-4

Online Resource(s):

Course website

Classroom and Equipment Requirements

Major Browsers (current version)
Visual studio (current version)

Evaluation Scheme

- ⇒ Assignment 1: Build a web page that uses JavaScript functions
- ⇒ Assignment 2: Build a web page that uses JavaScript arrays to store and process information
- ⇒ Assignment 3: Build a web page that uses the DOM/BOM to modify programmatically the loaded document

- ⇒ Assignment 4: Build a webpage that uses JavaScript and OOP to validate a form
- ⇒ Assignment 5: Create a web page that incorporates APIs and Ajax features.
- ⇒ Assignment 6: Create a web page that implements a 2D game and uses the canvas element, web storage, touch screen support.
- ⇒ Test 1: Comprehensive evaluation of knowledge about JavaScript core features, variables, functions, arrays, OOP features and DOM
- ⇒ Test 2: Comprehensive evaluation of knowledge about JavaScript form validation, OOP, security, mobile device support, Ajax and jQuery features

| Evaluation Name | CLO(s) | EES Outcome(s) | GCE Outcome(s) | Weight/100 |
|-----------------|----------------------------|----------------|----------------|-------------|
| Assignment 1 | 1, 2, 3 | 1, 4, 5, 10 | | 10 |
| Assignment 2 | 1, 2, 3, 4, 8 | 1, 4, 5, 10 | | 10 |
| Assignment 3 | 1, 2, 3, 4, 5 | 1, 4, 5, 10 | | 10 |
| Assignment 4 | 1, 2, 3, 4, 6, 7, 8 | 1, 2, 4, 5, 10 | 2 | 10 |
| Assignment 5 | 1, 2, 3, 4, 5, 6, 7, 8, 11 | 1, 4, 5, 7 | | 10 |
| Assignment 6 | 1, 2, 3, 4, 5, 7, 8, 9, 10 | 1, 2, 4, 5, 10 | | 10 |
| Test 1 | 1, 2, 3, 4, 5, 7 | 1, 2, 4, 5 | | 20 |
| Test 2 | 6, 7, 8, 9, 10, 11, 12 | 1, 2, 4, 5 | | 20 |
| Total | | | | 100% |

If students are unable to write a test they should immediately contact their professor or program Chair for advice. In exceptional and well documented circumstances (e.g. unforeseen family problems, serious illness, or death of a close family member), students may be able to write a make-up test.

All submitted work may be reviewed for authenticity and originality utilizing Turnitin®. Students who do not wish to have their work submitted to Turnitin® must, by the end of the second week of class, communicate this in writing to the instructor and make mutually agreeable alternate arrangements.

When writing tests, students must be able to produce official Centennial College photo identification or they may be refused the right to take the test or test results will be void.

Tests or assignments conducted remotely may require the use of online proctoring technology where the student's identification is verified and their activity is monitored and/or recorded, both audibly and visually through remote access to the student's computer and web camera. Students must communicate in writing to the instructor as soon as possible and prior to the test or assignment due date if they require an alternate assessment format to explore mutually agreeable alternatives.

Student Accommodation

The Centre for Accessible Learning and Counselling Services (CALCS) (<http://centennialcollege.ca/calcs>) provides programs and services which empower students in meeting their wellness goals, accommodation and disability-related needs. Our team of professional psychotherapists, social workers, educators, and staff offer brief, solution-focused psychotherapy, accommodation planning, health and wellness education, group counselling, psycho-educational workshops, adaptive technology, and peer support. Walk in for your first intake session at one of our service locations (Ashtonbee Room L1-04,

Morningside Room 190, Progress Room C1-03, The Story Arts Centre Room 285, Downsview Room 105) or contact us at calcs@centennialcollege.ca, 416-289-5000 ext. 3850 to learn more about accessing CALCS services.

Use of Dictionaries

- Any dictionary (hard copy or electronic) may be used in regular class work.
- Dictionaries may be used in tests and examinations, or in portions of tests and examinations, as long as they are non-electronic (not capable of storing information) and hard copy (reviewed by the invigilator to ensure notes are not incorporated that would affect test or examination integrity).

Program or School Policies

N/A

Course Policies

N/A

College Policies

Students should familiarize themselves with all College Policies that cover academic matters and student conduct.

All students and employees have the right to study and work in an environment that is free from discrimination and harassment and promotes respect and equity. Centennial policies ensure all incidents of harassment, discrimination, bullying and violence will be addressed and responded to accordingly.

Academic honesty is integral to the learning process and a necessary ingredient of academic integrity. Academic dishonesty includes cheating, plagiarism, and impersonation. All of these occur when the work of others is presented by a student as their own and/or without citing sources of information. Breaches of academic honesty may result in a failing grade on the assignment/course, suspension or expulsion from the college.

For more information on these and other policies, please visit www.centennialcollege.ca/about-centennial/college-overview/college-policies.

Students enrolled in a joint or collaborative program are subject to the partner institution's academic policies.

PLAR Process

This course is eligible for Prior Learning Assessment and Recognition (PLAR). PLAR is a process by which course credit may be granted for past learning acquired through work or other life experiences. The PLAR process involves completing an assessment (portfolio, test, assignment, etc.) that reliably demonstrates achievement of the course learning outcomes. Contact the academic school to obtain information on the PLAR process and the required assessment.

This course outline and its associated weekly topical(s) may not be reproduced, in whole or in part, without the prior permission of Centennial College.

Semester: Summer 2021
 Section Code: all
 Meeting Time & Location: On-line

Professor Name: all
 Contact Information: as per instructor contact info on eCentennial

Topical Outline (subject to change):

| Week | Topics | Readings/Materials | Weekly Learning Outcome(s) | Instructional Strategies | Evaluation Name and Weight | Evaluation Date |
|------|--|--------------------|--|---|----------------------------|-----------------|
| 1 | Introduction to JavaScript | Ch 1 | <ul style="list-style-type: none"> •Explain the history of the World Wide Web •Describe the differences between client-side and server-side scripting •Understand the components of a JavaScript statement •Add basic JavaScript code to web pages •Structure JavaScript programs | Lecture, demonstrations and hands-on exercises, class discussions | | |
| 2 | Working with Functions, Data Types, and Operators | Ch 2 | <ul style="list-style-type: none"> •Use functions to organize JavaScript code •Use expressions and operators •Identify the order of operator precedence in an expression | Lecture, demonstrations and hands-on exercises, class discussions | Assignment 1 | Week 2 |
| 3 | Building Arrays and Controlling Flow | Ch 3 | <ul style="list-style-type: none"> •Store data in arrays •Use while statements, do/while statements, and for statements to repeatedly execute code •Use continue statements to restart looping statements •Use if statements, if/else statements, and switch statements to make decisions •Nest one if statement in another | Lecture, demonstrations and hands-on exercises, class discussions | Assignment 2 | Week 3 |
| 4 | Debugging and Error Handling | Ch 4 | <ul style="list-style-type: none"> •Recognize error types •Trace errors with dialog boxes and the console •Use comments to locate bugs •Trace errors with debugging tools •Write code to respond to exceptions and errors | Lecture, demonstrations and hands-on exercises, class discussions | | |
| 5 | Working with the Document Object Model (DOM) and DHTML | Ch 5 | <ul style="list-style-type: none"> •Access elements by id, tag name, class, name, or selector •Access element content, CSS properties, and attributes •Add and remove document nodes •Create and close new browser tabs and | Lecture, demonstrations and hands-on exercises, class discussions | Assignment 3 | Week 5 |

| Week | Topics | Readings/Materials | Weekly Learning Outcome(s) | Instructional Strategies | Evaluation Name and Weight | Evaluation Date |
|------|---|--------------------|--|---|----------------------------|-----------------|
| | | | <ul style="list-style-type: none"> • windows with an app • Use the setTimeout() and setInterval() methods to specify a delay or a duration • Use the History, Location, Navigation and Screen objects to manipulate the browser window | | | |
| 6 | Enhancing and Validating Forms | Ch 6 | <ul style="list-style-type: none"> • Enhance form usability with JavaScript • Customize browser-based HTML validation • Implement custom validation to check for errors and display error messages | Lecture, demonstrations and hands-on exercises, class discussions | Test 1 | Week 6 |
| 7 | Using Object-Oriented JavaScript | Ch 7 | <ul style="list-style-type: none"> • Explain basic concepts related to object-oriented programming • Use the Date, Number, and Math objects • Define your own custom JavaScript objects | Lecture, demonstrations and hands-on exercises, class discussions | | |
| 8 | Manipulating Data in Strings and Arrays | Ch 8 | <ul style="list-style-type: none"> • Manipulate strings with properties and methods of the String object • Create regular expressions and use them to validate user input • Manipulate arrays with properties and methods of the Array object • Convert between strings and arrays, and between strings and JSON | Lecture, demonstrations and hands-on exercises, class discussions | Assignment 4 | Week 8 |
| 9 | Managing State Information and Security | Ch 9 | <ul style="list-style-type: none"> • Save state information with query strings, hidden form fields, and cookies • Describe JavaScript security issues and employ coding practices designed to address them | Lecture, demonstrations and hands-on exercises, class discussions | | |
| 10 | Programming for Touchscreens and Mobile Devices | Ch 10 | <ul style="list-style-type: none"> • Integrate mouse, touch, and pointer events into a web app • Obtain and work with a user's geolocation information • Optimize a mobile web app to accommodate the common constraints experienced by mobile users | Lecture, demonstrations and hands-on exercises, class discussions | Assignment 5 | Week 10 |
| 11 | Updating Web Pages with Ajax | Ch 11 | <ul style="list-style-type: none"> • Describe the steps involved in using Ajax to update data • Create an HTTP request and interpret an HTTP response • Request and receive server data using the XMLHttpRequest object | Lecture, demonstrations and hands-on exercises, class discussions | | |

| Week | Topics | Readings/Materials | Weekly Learning Outcome(s) | Instructional Strategies | Evaluation Name and Weight | Evaluation Date |
|------|---------------------------------|--------------------|---|---|----------------------------|-----------------|
| | | | <ul style="list-style-type: none"> •Process data received from a web service and add it to the DOM •Update app data using JSON-P | | | |
| 12 | Introduction to jQuery | Ch 12 | <ul style="list-style-type: none"> •Select elements using jQuery syntax •Use built-in jQuery functions | Lecture, demonstrations and hands-on exercises, class discussions | Assignment 6 | Week 12 |
| 13 | Using jQuery statements | Online materials | <ul style="list-style-type: none"> •Understanding jQuery statement chaining •Building event handlers | Lecture, demonstrations and hands-on exercises, class discussions | | |
| 14 | Enhancing Web Pages with jQuery | Online materials | <ul style="list-style-type: none"> •Working with jQuery effects (hiding,fading) •Creating custom animations •Using the jQuery UI plug-in | Lecture, demonstrations and hands-on exercises, class discussions | Test 2 | Week 14 |