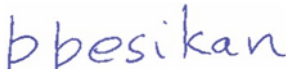# Course Outline

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
Current Semester:	Winter 2017
Approved by:	*ppesikan c/o*

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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.

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 Advanced Education and Skills Development 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 above 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 above 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)

Code-based HTML Editor

Web Server

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 College photo identification or they may be refused the right to take the test or test results will be void.

Student Accommodation

Students with permanent or temporary accommodations who require academic accommodations are encouraged to register with the Centre for Students with Disabilities (CSD) located at Ashtonbee (L1-04), Progress (C1-03), Morningside (Rm 190), and Story Arts Campus (Rm 284). Documentation outlining the functional limitations of a disability is required; however, interim accommodations pending receipt of documentation may be possible. This service is free and confidential. For more information, please email csd@centennialcollege.ca.

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

A student must obtain a passing grade on the term test portion of the course in order to pass this course (i.e. a minimum of 25% out of 50%)

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.

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Topical Outline (subject to change):

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
1	Introduction to JavaScript	Ch 1	•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	•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	
3	Building Arrays and Controlling Flow	Ch 3	•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	
4	Debugging and Error Handling	Ch 4	•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	•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 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	Lecture, demonstrations and hands-on exercises, class discussions	Assignment 3	

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
6	Enhancing and Validating Forms	Ch 6	•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	
7	Using Object-Oriented JavaScript	Ch 7	•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	•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	
9	Managing State Information and Security	Ch 9	•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	•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	
11	Updating Web Pages with Ajax	Ch 11	•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 •Process data received from a web service and add it to the DOM •Update app data using JSON-P	Lecture, demonstrations and hands-on exercises, class discussions		
12	Introduction to jQuery	Ch 12	•Select elements using jQuery syntax •Use built-in jQuery functions	Lecture, demonstrations and hands-on exercises, class discussions	Assignment 6	

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
13	Using jQuery statements	Online materials	•Understanding jQuery statement chaining •Building event handlers	Lecture, demonstrations and hands-on exercises, class discussions		
14	Enhancing Web Pages with jQuery	Online materials	•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	