Certificate Program in Internet Programming & Development (A.E.C. LEA.BN)
COURSE OUTLINE

A. General Information

Program Name:	Internet Programming & Development	
Course Title:	JavaScript	
Course Number/Section:	420-PX4-AB	
Start Date:	December 8, 2016	End date: December 23, 2016
Schedule:	8:30 am to 2:30 pm	
Classroom:	BH-213	
Ponderation:	2 hours lecture + 2 hours laboratory + 3 hours homework	
Hours:	60 hours	
Credits:	2.33	
Competencies:	DC54 – Apply JavaScript in a web browser	
Pre-requisite(s):	(420-PC3-AB) Hyper-Text Markup Language (HTML & XML), (420-PD3-AB) Cascading Style Sheets (CSS)	
Semester:	Fall 2016	
Teacher:	Khattar Daou, M.S., Ph.D. Technical Sciences Microsoft Certified Trainer (MCT), Microsoft Office Specialist (MOS)	
Telephone:	N/A	
Email:	The instructor can be reached from the email tool within JAC Portal: Khattar.Daou@JohnAbbott.qc.ca	

B. Introduction (Program related Information)

This course introduces JavaScript scripting language that enables Web Designers to develop highly interactive, dynamic Web sites. Students will learn how to use JavaScript to create interactive pages through event handling, control animation and forms verification. Topics will include event handling, scrolling textboxes, dynamic images, and mouse over events, calculating forms, programming functions, working with objects, and adding features such as clocks, timers and counters. The course will then introduce the jQuery library which will be used to add GUI widgets, apply effects, and update CSS elements. Students will also learn how to make server connections with the XMLHttpRequest object, handle XML and JSON data, modify the Document Object Model, update page formatting and content, validate form data, and create simple animation.

C. Objectives and Course Content

OBJECTIVE	STANDARD

Statement of the Competency
Apply client-side scripting in a web browser.
	Achievement Context
	• In a classroom and computer laboratory environments – using:
	  ○ Using a workstation and the appropriate software
	  ○ Based on situations representative of the workplace and requiring the development of applications involving a limited number of classes
	  ○ Using all the documentation available on the applications to be developed
	• In written assignment(s) and/or in-class exam(s)
	• In simulation exercises
	• Working alone and in groups
	• Based on industry standards

Elements of the Competency	**Performance Criteria**

1. **Explain the client-side scripting languages**	1.1 Explain the basic concepts and syntax of scripting languages 1.2 Demonstrate real-world Web programming with client-side scripting 1.3 Describe basic procedures for adding scripting block to Web page 1.4 Define the rules that must be followed when structuring JavaScript code
2. Learn about scripting languages variables and data types	2.1 Explain how to declare, initialize, and use variables 2.2 Describe different scripting data types 2.3 Define expressions, operands, and the different types of operators available in JavaScript script. 2.4 Study operator precedence
3. Describe functions, events, and control structures	3.1 Learn how to use functions to organize scripting code. 3.2 Learn how to work with events 3.3 Explain the use of *if* statements, *if…else* statements, and switch statements to make decisions 3.4 Explain the use of *while* statements, *do…while* statements, and *for* statements to execute code repeatedly
4. Explain how to manipulate the browser object Model	4.1 Review the browser object model and work with the *Window* object 4.2 Learn about the *History*, *location*, and *navigator* object.
5. Understand JavaScript and DOM scripting	4.3 Using the DOM to access and change elements, attributes, and contents
6. Explain how to validate form data with scripting code	6.1 Learn about form elements and objects 6.2 Use scripting language to manipulate and validate form elements 6.3 Explain how to validate submitted data
7. Describe object-oriented programming with scripting languages	7.1 Learn about the built-in JavaScript objects 7.2 Work with Data, Number, and Math objects 7.3 Define custom scripting objects
8. Describe debugging and error handling	8.1 Review debugging concepts 8.2 Learn how to trace error messages and use comments to locate bugs 8.3 Explain exception and error handling
9. Using JavaScript libraries	9.1 Using JavaScript library – a collection of prewritten functions and methods that you can use in your scripts to accomplish common tasks or simplify complex ones
10. Apply JavaScript and AJAX	10.1 Using XMLHttpRequest object to develop AJAX applications 10.2 Understanding JavaScript Notation Object (JSON) Document Structure

D. Assignments and Evaluations

Grading and Evaluation Criteria

This course will be marked of 100 points based on Assignments, Unscheduled Quizzes, and Team Project. To obtain the passing grade in this subject, a student must achieve a grade of 60% or better on the overall course.

Multiple choice quizzes to evaluate ability to define terms, identify components, and demonstrate understanding of

Assessment Item Name	Due Date	%
Assignment 1	15-Dec-16	20
Unscheduled Test	Date	10
Team Project	23-Dec-16	30

concepts presented in the lectures, demonstrations, lab assignments, projects and reading assignments. 1. 10% of the grade is based on Unscheduled Test. 2. 10% of the grade is based on In-Class Activities and participation. 3. 20% of the grade is based on Assignment 4. 30% of the grade is based on Team project 5. 30% of the grade is based on Final Exam. This examination is cumulative and is given in a variety of formats. An in-class review will be held prior to the final examination.	In-Class Activities	23-Dec-16	10
	Final Exam	23-Dec-16	30
	Assessment Name	Date	%
	Assessment Name	Date	%
	Assessment Name	Date	%

E. Course Content Schedule

The following schedule is an estimate of the course timing (60 hours). Each class represents 5 classroom hours (8:30 a.m. to 2:30 p.m. – Break from 10:15 a.m. to 10:30 a.m., and Lunch Time from 12:00 to 1:00 p.m.).

Class/ Topic	Date	Content Description
1	8-Dec-16	**Discuss Course Outline** A brief history of JavaScript | JavaScript ECMA-262 Standard | JavaScript placement on your Web page | Working With the Script Element | Writing Output to a Web Document | Understanding JavaScript Rules and the Use of White Space | What JavaScript can do | What JavaScript can't do | JavaScript Language Basics | JavaScript statement | JavaScript Keywords and Reserved Words **Lab and Class review key concepts from the unit.**
2	9-Dec-16	**Working with Operators and Expressions** Working with variables | JavaScript Primitive and Reference Types | Data Types | Primitive Types: Undefined, Null, Boolean, Number, String Types | Number Conversions | Reference Object Types | JavaScript Operators and Expressions | Escape Sequence characters **Lab and Class review key concepts from the unit.**
3	12-Dec-16	**Decisions and Loops** Flow-Control Statements | if Statement | Multiple Conditions Inside an if Statement | else and else if | The switch Statement | The for and while Statements | The do...while loop | The break and continue Statements **Lab and Class review key concepts from the unit.**
4	13-Dec-16	**JavaScript Functions** Creating and calling a function | Declarations vs. Expressions | Function Parameters | The Return Statement | Function Overloading | Object Methods | The this Object | Asynchronous Functions | JavaScript build-in Functions **Lab and Class review key concepts from the unit.**
5	14-Dec-16	**JavaScript Built-in Objects** String Object | Date Object | Math Object | Image Objects | Array Object | Array Properties | Array Methods | Finding Array Elements using The indexOf() and lastIndexOf() Methods Creating an Image Rollover | Creating a Text Rollover | Working with Menus | Creating Pop-Up Menu Functions **Lab and Class review key concepts from the unit.**
6	15-Dec-16	**Browser Object Model (BOM)** The browser hierarchy | Properties and Methods of BOM Objects | Working with Window Object | Working with Status Bars | Working with the History and Location Objects | Creating New Browser Windows | Working with Window Methods **Lab and Class review key concepts from the unit.**
7	16-Dec-16	**Working with Forms and Regular Expressions** Working with Forms and Fields | Working with Input Fields | Working with Selection Lists | Working with Option Buttons and Checkboxes | Creating Calculated Fields | Working with Form Validation | Working with Text Strings | Introducing with Regular Expressions | Working with the Regular Expression Object **Lab and Class review key concepts from the unit.**

8	19-Dec-16	**The Document Object Model (DOM)** DOM Levels | Working with Nodes | Use the Document Object Model (DOM) to retrieve elements from a document | Retrieving elements by ID | Retrieving by tag name | HTML collections: ocument.anchors, document.forms, document.images , document.links **Lab and Class review key concepts from the unit.**
9	20-Dec-16	**Working with the Event Model** The Event models | DOM Event Model | Creating a Cross-Browser Event Model | Working with Event Objects | Working with the Mouse Button | Working with Keyboard Events **Lab and Class review key concepts from the unit.**
10	21-Dec-16	**AJAX Foundations** Understanding the Role of HTTP | ASP.NET and Other Server-Side Technologies | JavaScript and Other Client-Side Technologies | Properties and methods of XMLHttpRequest Object | Creating XMLHttpRequest objects | Configuring XMLHttpRequest objects | Handling data downloads from the server using anonymous functions | Fetching text data from the server | Passing data to the server using Ajax and the GET or POST HTTP methods **Lab and Class review key concepts from the unit.**
11	22-Dec-16	**Introduction to jQuery** Obtaining jQuery | Installing jQuery | Programming Conventions | Selecting and Filtering | JQuery Events | Animating with jQuery **Lab and Class review key concepts from the unit.**
12	23-Dec-16	**Final Exam**

F. Required Text & Course Materials:

Title	Author	Publisher	Cost
1. *JavaScript: The New Toys | T. J. Crowder ISBN: 978-1-119-36795-6 © 2017 | John Wiley & Sons, Inc.*			
Optional: 1. *HTML5, JavaScript, and jQuery 24-Hour Trainer | Dane Cameron | ISBN: 978-1-119-00116-4 © 2015 | John Wiley & Sons, Inc.* 2. *HTML, CSS & JavaScript Web Publishing in One Hour a Day, Sams Teach Yourself: Covering HTML5, CSS3, and jQuery, 7th Edition | Laura Lemay, Rafe Colburn, Jennifer Kyrnin| ISBN: 978-0672336232 ©2016 | Sams Publishing* 3. *JavaScript: The Web Warrior Series, 6th Edition | Sasha Vodnik, Don Gosselin | ISBN: 978-1305078444 © 2015 | Cengage Learning*			

G. Teaching Methods:

This course will be approached from both a theoretical and practical perspective through:

- Lectures and hands on practical work
- In-class exercises, Installation of Operating systems on PCs and within virtual machines
- Research current pricing, quizzes and examinations

H. Departmental Policies:

Attendance

The Centre for Continuing Education expects all students to attend class regularly. It is an essential requisite for the academic success and the mastery of the competencies required. The level of mastery of theses competencies can be greatly increased with regular attendance as it allows the student time to demonstrate the complete understanding and perform certain elements of the competencies. Attendance and participation in class, lab, and fieldwork is **mandatory**. Attendance will be taken at the beginning of every class.

Without a valid reason or prior approval, students cannot miss more than 20% of the total hours of a course, i.e. 9 hours for a 45 hour course, 12 hours for a 60 hour course etc. or risks failing the course.

Since marks recognize the extent to which the competencies are met, no marks can be given for attendance alone or deducted for absence. Although attendance cannot be used as a component of the final grade, excessive absences may have consequences affecting the final grades.

Absences are subject to the following procedures:
Students who miss class without a valid reason or prior approval will receive a mark of zero on any in-class assignment or quiz given in the period without the opportunity for make-up work.

Exceptions apply in cases of authorized absences.

Authorized Absences
Students must be excused if they provide written proof of a valid medical or other special reason for missing a class or an evaluation within a 24 hour period. Teachers must require proof. (IPESA Art.7.1) Teachers are not required to re-teach course material missed by these students. Students with authorized absences cannot loose marks for missing an evaluation. The marks for the evaluation may be assigned to another evaluation even if the guidelines in IPESA Article 5 are exceeded. Teacher must provide alternative major evaluations if students miss a major evaluation due to an excused absence.

According to article 7.1 IPESA, special arrangements may be made in cases where chronic illness prevents the student from attending on a regular basis. Proof may be required. Special arrangements should also be made for religious holidays; however, students must inform the teacher *at the beginning* of the course, in writing.

Absences fewer than 5 days
Students who miss less than 20% of the course for justified reasons must provide a written note to the teacher or the program coordinator.

Five days or more
Students who will be absent for 5 days or more for justified reasons should provide a medical note to the Registrar's Office. The Registrar's Office will then advise the teacher of the date of return or if it is undetermined. Arrangements for submission of missed work, test, exams etc. are made between the teacher and the student.
Extended Absences after the Course withdrawal deadline (according to the Registrar policy)
http://www.johnabbott.qc.ca/academics/registrar/authorized-absences/

Classroom Policies
Students who miss a class will receive a mark of zero on any in-class assignments or quizzes given in the period without the opportunity for any make-up work. Exceptions to this policy apply only in the event of absence due to medical or special reasons or religious holidays.

All electronic communication and music devices (e.g., iPads, tablets, cell phones, pagers, CD-players, mp3-players, etc.) must be turned off while in class, unless authorized otherwise by the teacher.

Class time is limited, and each student at John Abbott is entitled to the very best educational experience in every class. It is important that the atmosphere of each classroom or lab be as conducive to the learning process as possible. The following guidelines have been established so as to create and maintain such an atmosphere.

Inappropriate behaviour in the classroom includes the following:

- Speaking while another person (teacher or student) has the floor (that is, he/she is addressing the class as a whole).
- Using MP3, cellular phones or other electronic devices not related to the course.
- Threatening, harassing, or offensive behaviour towards any person in the class, other students, teachers or College staff.
- Use of derogatory language or referring directly or indirectly to someone else in the class in a rude manner or using offensive language.
- Misuse or abuse of the College's computers, telephone systems or other equipment.
- Speaking, reading or writing about subjects which are not part of the current class discussion.

- Arriving late, leaving early, and leaving the room for any non-emergency without having teacher approval and the courtesy to make this known.
- Eating or drinking in the computer laboratories is forbidden.

I. College Policies

Cheating & Plagiarism: Cheating & Plagiarism is unacceptable to John Abbott College (IPESA policy 7)

Cheating includes, but is not restricted to, making use of or being in possession of unauthorized material or devices and/or obtaining or providing unauthorized assistance in writing examinations, papers, or any other evaluation task and submitting the same work in more than one course without the teacher's permission. It is incumbent upon the Department through the teacher to ensure students are forewarned about unauthorized material, devices, or practices that are not permitted.

Plagiarism is a form of cheating. It includes the intentional copying or paraphrasing (expressing the ideas of someone else in one's own words) of another person's work or the use of another person's work or ideas without acknowledgement of its source. Plagiarism can be from any source including books, magazines, electronic or photographic media or another student's paper or work.

To ensure that a consistent and acceptable manner of conduct and level of safety conducive to a learning environment is maintained within the college, the following disruptive behaviours will not be tolerated in any degree on campus: unauthorised use of alcohol or illegal drugs, violence against persons or property, possession of weapons, verbal abuse or intimidation, theft, and gambling.

Copyright law must be respected at all times. Please be aware that any illegal copy of textbook material will be confiscated.

Religious Holidays

Students who wish to observe religious holidays must inform their teacher in writing within the first two weeks of the semester of their intent.

Student Rights and Responsibilities

It is the responsibility of students to keep all assessed material returned to them for at least one semester in the event of a grade review.

Students with Disabilities: Students with disabilities, who have registered with The Access Centre, may be entitled to special accommodations for evaluations. Please notify the instructor as soon as possible.

Changes to the Evaluation Plan in Course Outline (Article 4.3)

Changes to the evaluation plan, during the course, requires unanimous consent.