LONDON CAPITAL COMPUTER COLLEGE

Diploma in eCommerce & Web Design (901) - JavaScript

Prerequisites: Basic knowledge of computers and file management.	**Corequisites:** A pass or higher in Diploma in Information Technology or equivalence
Aim: JavaScript is the backbone of many interactive web pages. It is an integrated part of all modern web browsers, including Internet Explorer and FireFox. The course covers a quick overview of HTML, client-side programming, variables, functions, event handlers, objects, form validation, image and form objects, frames, windows and cookies. Candidates explore useful methods and properties of the browser Document Object Model (DOM) and programming concepts, including conditional statements, looping constructs, user functions, user objects, arrays, data structures, string manipulation, regular expressions.	
Required Materials: Recommended Learning Resources.	**Supplementary Materials:** Lecture notes and tutor extra reading recommendations.
Special Requirements: This is a hands-on course, hence use of computers is mandatory.	
Intended Learning Outcomes:	**Assessment Criteria:**
1. Define the purpose of JavaScript in Web Design. Describe JavaScript tags and program layout.	1.1 Design simple JavaScript programs 1.2 Use input and output statements 1.3 Describe basic memory concepts 1.4 Use arithmetic operators 1.5 Describe the precedence of arithmetic operators 1.6 Write decision-making statements 1.7 Be able to use relational and equality operators.
2. Describe JavaScript program control. Define algorithm, sequential execution and repetition structure. Describe how decisions are expressed. Identify variables, arithmetic operators and data types in JavaScript.	2.1 Define basic problem-solving techniques 2.2 Develop algorithms through the process of top-down, stepwise refinement 2.3 Use the **if** and **if…else** selection statements to choose among alternative actions 2.4 Use the while repetition statement to execute statements in a script repeatedly 2.5 Demonstrate counter-controlled repetition and sentinel-controlled repetition 2.6 Use the increment, decrement and assignment operators.
3. Describe loop counter, increment and iteration of loops in JavaScript. Describe multiple-selection in JavaScript. Define logical operators and logical negation.	3.1 Use the **for** and **do…while** repetition statements to execute statements in a program repeatedly 3.2 Describe multiple selection using the switch selection statement 3.3 Use the break and continue program-control statements 3.4 Use the logical operators.
4. Discover the technique of divide and conquer in programming. Define modules in JavaScript	4.1 Demonstrate how to construct programs modularly from small pieces called functions 4.2 Demonstrate how to create new functions

	4.3 Define the mechanisms used to pass information between functions 4.4 Introduce simulation techniques that use random-number generation 4.5 Describe how the visibility of identifiers is limited to specific regions of programs.
5. Define arrays. Describe the process of creating and initialising arrays.	5.1 Define the array data structure 5.2 Describe the use of arrays to store, sort and search lists and tables of values 5.3 Demonstrate how to declare an array, initialise an array and refer to individual elements of an array 5.4 Define how to pass arrays to functions 5.5 Demonstrate how to search and sort an array 5.6 Demonstrate how to declare and manipulate multi-dimensional arrays.
6. Define JavaScript objects. Describe how JavaScript uses objects to perform tasks. Define cookies.	6.1 Describe object-based programming terminology and concepts 6.2 Describe encapsulation and data hiding 6.3 Appreciate the value of object orientation 6.4 Define how to use the JavaScript objects Math, String, Date, Boolean and Number 6.5 Describe how to use the browser's document and window objects 6.6 Demonstrate how to use cookies.

Recommended Learning Resources: JavaScript

Text Books	• The Book of JavaScript: A Practical Guide to Interactive Web Pages by Dave Thau. ISBN-10: 1886411360 • JavaScript: The Definitive Guide by David Flanagan. ISBN-10: 0596101996 • Beginning JavaScript, 3rd Edition (Programmer to Programmer) by Paul Wilton and Jeremy McPeak. ISBN-10: 0470051515
Study Manuals	BCE produced study packs
CD ROM	Power-point slides
Software	Internet Explorer