LONDON CAPITAL COMPUTER COLLEGE

Advanced Diploma in Web Development (902) – Advanced JavaScript

Prerequisites: Familiarity with the Web and its terminology.	**Corequisites:** A pass or higher in Diploma in e-Commerce & Web Design or equivalence.
Aim: Enhance your skills for your JavaScript tool kit. Add special effects to your Web site, including rollover buttons, slideshows, random quotes and cycling banners. Delve deeper into JavaScript and add more interactivity to Web sites, including pop-up windows, cookies, form validations, go menus, math object, event handling, and invoking File System Object.	
Required Materials: Recommended Learning Resources.	**Supplementary Materials:** Recommended textbooks and lecture notes.
Special Requirements: This is a hands-on course, hence practical use of computers is essential. Requires intensive lab work outside of class time.	
Intended Learning Outcomes:	**Assessment Criteria:**
1 Learn about functions. Learn how to create functions in an HTML document and in an external file.	1.1 Describe the concept of a function. 1.2 Discuss using arguments to pass information into a function; including passing in both literal values and variables. 1.3 Illustrate using the return statement to return information. 1.4 Explain creating functions in external files. 1.5 Discuss the concept of variable scope. 1.6 Expand on constructors and object-based programming which covers creating custom objects, with their own methods and properties.
2 Describe events.	2.1 Analyse an overview of events 2.2 Describe events that occur when the user uses a mouse. 2.3 Explain events that occur in the active portion of the browser window; including the load and unload events. 2.4 Discuss events that occur as the user navigates between open windows or elements on a single page. 2.5 Establish critical events that occur when the user presses or releases a key on the keyboard. 2.6 Discuss events unique to HTML forms; submit and reset events. 2.7 Describes events that detect when an element has been selected or changed. 2.8 Describe Advanced Use of Event Handlers, which incorporates techniques such as creating custom event handlers and returning information from an event handler.
3 Describe JavaScript document object model (DOM). Analyse techniques that allow developers to control aspects of the HTML page	3.1 Define the Document Object Model. 3.2 Discuss how to use JavaScript to change the colors of hyperlinks, text, and the

at runtime.		page background.
	3.3	Describe the process using an array to represent all the anchors created within an HTML document; including defining anchors and navigating to them.
	3.4	Analyse techniques that can be used to dynamically change the text that appears in the browser title bar.
	3.5	Define properties that can be used to redirect a user to a new page; including the concept of a deprecated command.
	3.6	Discuss the location object (as opposed to the location property), which provides greater control than the location property over how a document loads into the browser window.
	3.7	Describe ways to use JavaScript to manipulate the window's history object.
4 Learn about the window object in greater depth. Be able to illustrate additional methods and properties of this object; including resizing windows, moving windows, controlling the browsers status bar, and manually control scrolling.	4.1	Be able to implement status bar properties
	4.2	Describe screen properties
	4.3	Be able to move and resize windows
	4.4	Be able to control scrolling
	4.5	Be able to work with frames
	4.6	Describe how to redirect users to a frameset
5 Describe the tools used to read, manipulate, and write numeric data. An overview of the Math and Date objects.	5.1	Understand Operators and Precedence, which introduces the basic math operators and covers the order of precedence in which operators that have different types of operations are performed.
	5.2	Discuss several methods of the **Math object**, including **abs()**, which returns the absolute value of a number and **pow()**, which raises a base number to the power of an exponent.
	5.3	Demonstrate how to create a random number between 0 and 1.
	5.4	Discuss several properties of Math objects.
	5.5	Show the different ways in which a Date object can be created and discuss several properties which can be used to separate a date into its component parts.
	5.6	Discuss creating timers that fire one time and timers that fire at repeated intervals.
6 Describe how forms can be used to allow visitors to sign up for an e-mail newsletter, verify and process credit card data on an e-commerce site, or perform any other transaction. Analyse techniques that can be used to add animation to a Web page.	6.1	Discuss the Document Object Model.
	6.2	Describe many properties of the form object and how they relate to attributes of the **<form>** tag.
	6.3	Illustrates using JavaScript to retrieve the value of the elements on the form.
	6.4	Discuss the techniques that can be used to validate data on a form before it is submitted to a server for processing.
	6.5	Focus on validating email addresses, verifying that required fields are filled out, and checking for nonnumeric data in fields that should only contain numbers.

	6.6	Describe several properties of image objects and how they relate to attributes of the <img> tag.
	6.7	Demonstrate using JavaScript to retrieve properties of an image.
	6.8	Discusses the advantages of loading images into memory when the page is loaded.
	6.9	Demonstrate the technique for changing an image that is displayed in response to a user event.
	6.10	Be able to create Rollovers.
	6.11	Understand using Advanced Image Scripts, which builds upon the concepts of preloading images and creating rollovers.
	6.12	Demonstrate creating disjointed rollovers and adding links to a page to create a slideshow.
7 Explore Dynamic HTML (DHTML), which allows developers to use JavaScript to control many CSS attributes. Working knowledge of CSS is required.	7.1	Be able to use the id attribute of an HTML element and the JavaScript style object to represent the style attribute of an HTML tag.
	7.2	Illustrate the **getElementById()** method to set or retrieve properties of the style sheet.
	7.3	Demonstrate some of the techniques you can use to move an image file across the screen.
	7.4	Discuss using DHTML to create, hide, and display drop-down menus; using the concepts of timers and the **onmouseover** and **onmouseout** event handlers.
	7.5	Demonstrate using JavaScript to control font characteristics and compares CSS attributes with JavaScript properties.
	7.6	Illustrates using JavaScript to control image and background properties and compares CSS attributes with JavaScript properties.
	7.7	Discuss using the z-index attribute to change the stacking order of multiple images on the page.

Recommended Learning Resources: Advanced JavaScript

Text Books	• Advanced JavaScript by Chuck Easttom. ISBN-10: 1598220330 • Advanced Javascript by Dan Livingston. ISBN-10: 0130478911
Study Manuals 	BCE produced study packs
CD ROM 	Power-point slides
Software 	HTML