Course Competency

COP2822 Web Page Design and Programming   (4 credits)

Course Description

This is an intermediate level programming course that prepares students for web development. Students will learn client-side programming skills and technologies, such as JavaScript, XML, and Ajax. Prerequisite: COP1332 or COP1334, and CTS1800. A.S. credit only. Laboratory fee.

Course Competency	Learning Outcomes
Competency 1:demonstrate an understanding of modern Web development concepts and available languages	1. Computer / Technology Usage
1. Differentiating between client-side and server-side programming 2. Identifying current markup, scripting, and programming languages and describing their purpose in web site development 3. Describing the advantages of Web 2.0 technologies and listing example web sites that use these technologies 4. Explaining the advantages and disadvantages of using different types of Integrated Development Environments to facilitate website development	
Competency 2:demonstrate an understanding of JavaScript basics	
1. Discussing the origins and uses of JavaScript 2. Discussing the basic concepts of object-based programming and how they apply to JavaScript 3. Creating and using primitive data types, operators, variables, and expressions 4. Demonstrating the use of methods for accessing object properties and functionality 5. Demonstrating basic screen output and keyboard input	

Competency 3:demonstrate an understanding of JavaScript control statements	
1. Creating selection statements using "if", "if…else", and "switch" 2. Creating repetition statements and counters using "for", "do", and "while" 3. Using "break" and "continue" to customize repetition structures 4. Demonstrating the use of assignment, increment, and decrement operators	
Competency 4:demonstrate an understanding of Functions and Arrays	
1. Describing functions and the concept of code reuse 2. Declaring and calling functions 3. Returning values from functions 4. Describing how arrays are stored in Array objects 5. Declaring, allocating, and sorting arrays 6. Passing arrays to functions	
Competency 5:demonstrate an understanding of JavaScript Objects, Events, and the Document Object model	
1. Discussing the origins and evolution of the Document Object Model(DOM) 2. Describing and using JavaScript objects such as Math, String, Date, Number, Document, and Window 3. Discussing the concepts of "events" and "event handling" 4. Creating and handling events from HTML elements 5. Creating and validating form input elements 6. Creating and handling events based on user mouse activity 7. Creating and dynamically positioning elements in a web page 8. Creating and changing the content of an element dynamically	
Competency 6:demonstrate a basic understanding	

of XML	
1. Discussing the origins and uses and XML 2. Creating a properly structured XML document 3. Demonstrating proper use of elements and attributes 4. Declaring and applying namespaces 5. Discussing Document Type Definitions (DTDs) and Schemas 6. Discussing Extensible Stylesheet Language Transformations (XSLT)	
Competency 7: demonstrate a basic understanding of Ajax	
1. Discussing the origins and uses of Ajax 2. Discussing the XMLHttpRequest Object 3. Creating a script that will make a request to the server 4. Creating a script that will process the response from a server 5. Discussing the use of Ajax toolkits in assisting with the development of client-side and server-side Ajax software	

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