

CIS A171: INTRODUCTION TO JAVASCRIPT

Item	Value
Curriculum Committee Approval Date	12/04/2024
Top Code	070900 - World Wide Web Administration
Units	2 Total Units
Hours	54 Total Hours (Lecture Hours 27; Lab Hours 27)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	Yes
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

For students who already know how to create Web pages using HTML, this course introduces the fundamentals of JavaScript, a scripting language used to create interactive Web pages. Students will create dynamic Web pages using dialog boxes, forms, menus, rollover buttons, and image manipulation. ADVISORY: CIS A123. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Design Web pages containing dynamic forms with data validation.

Course Objectives

1. Explain when JavaScript should be used.
2. Explain the limitations of JavaScript for various browsers, versions, and platforms.
3. Manipulate images to create rollovers buttons and slideshows.
4. Demonstrate the proper formulation of scripts.
5. Update and control the structure of a browser window.
6. Create interactive forms and validate the data submitted.
7. Create a Web presentation that uses JavaScript and post to a Web server

Lecture Content

Topic 1 - Introduction to JavaScript Introducing the JavaScript language JavaScript enabled browsers The < Script > element Embedded and external scripts Case sensitivity in JavaScript Adding comments Writing valid JavaScript code The write() and writeln() methods Topic 2 Data Types Naming variables Declaring and initializing variables Assignment operator Modifying variables Numeric data types Boolean values Strings Finding and extracting characters in strings Replacing characters in strings Topic 3 Functions Defining functions JavaScript reserved words Calling functions Alerting the user Confirming a user's choice Prompting the user Redirecting the user with a link Topic 4 Conditional Statements Passing values to a function Conditional operators Logical operators If

statements If-else statements Switch statements Topic 5 Loops While loops Do-while loops For loops Nested loops Break statement Continue statements Topic 6 Arrays Declaring and initializing arrays Finding elements and values Modifying elements and values Manipulating arrays Copying arrays Converting between strings and arrays Image manipulation using arrays Topic 7 Working with Images Creating rollovers Building three-state rollovers Triggering rollovers from a link Working with multiple rollovers Creating cycling banners Building wraparound slideshows Displaying a random image Cycling images with a random start Topic 8 The Window Object Opening a new window Controlling the structure of a window Referring to a window Referencing objects in a window Loading different contents into a window Updating one window from another Closing a window Opening multiple windows Topic 9 The Form Object Understanding form elements Form controls Input fields Text and password boxes Submit and Reset buttons Radio buttons Check boxes Selection lists Submitting and resetting forms Topic 9 Validating Forms Making fields required Validating an email address Extracting strings Formatting strings Sorting strings Validating strings Confirming validation // Embedded and external scripts Case sensitivity in JavaScript Adding comments Writing valid JavaScript code The write() and writeln() methods Topic 2 ? Data Types Naming variables Declaring and initializing variables Assignment operator Modifying variables Numeric data types Boolean values Strings Finding and extracting characters in strings Replacing characters in strings Topic 3 ? Functions Defining functions JavaScript reserved words Calling functions Alerting the user Confirming a user's choice Prompting the user Redirecting the user with a link Topic 4 ? Conditional Statements Passing values to a function Conditional operators Logical operators If statements If-else statements Switch statements Topic 5 ? Loops While loops Do-while loops For loops Nested loops Break statement Continue statements Topic 6 ? Arrays Declaring and initializing arrays Finding elements and values Modifying elements and values Manipulating arrays Copying arrays Converting between strings and arrays Image manipulation using arrays Topic 7 ? Working with Images Creating rollovers Building three-state rollovers Triggering rollovers from a link Working with multiple rollovers Creating cycling banners Building wraparound slideshows Displaying a random image Cycling images with a random start Topic 8 ? The Window Object Opening a new window Controlling the structure of a window Referring to a window Referencing objects in a window Loading different contents into a window Updating one window from another Closing a window Opening multiple windows Topic 9 ? The Form Object Understanding form elements Form controls Input fields Text and password boxes Submit and Reset buttons Radio buttons Check boxes Selection lists Submitting and resetting forms Topic 9 ? Validating Forms Making fields required Validating an email address Extracting strings Formatting strings Sorting strings Validating strings Confirming validation // Embedded and external scripts Case sensitivity in JavaScript Adding comments Writing valid JavaScript code The write() and writeln() methods Topic 2 ? Data Types Naming variables Declaring and initializing variables Assignment operator Modifying variables Numeric data types Boolean values Strings Finding and extracting characters in strings Replacing characters in strings Topic 3 ? Functions Defining functions JavaScript reserved words Calling functions Alerting the user Confirming a user's choice Prompting the user Redirecting the user with a link Topic 4 ? Conditional Statements Passing values to a function Conditional operators Logical operators If statements If-else statements Switch statements Topic 5 ? Loops While loops Do-while loops For loops Nested loops Break statement Continue statements Topic 6 ? Arrays Declaring and initializing arrays Finding elements and values Modifying elements and values Manipulating arrays Copying arrays Converting between strings and arrays Image manipulation using arrays Topic 7 ? Working with Images Creating rollovers Building three-

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Topic 9 ? The Form Object Understanding form elements Form controls Input fields Text and password boxes Submit and Reset buttons Radio buttons Check boxes Selection lists Submitting and resetting forms Topic 9 ? Validating Forms Making fields required Validating an email address Extracting strings Formatting strings Sorting strings Validating strings Confirming validation //]>

Lab Content

Adding basic scripts to a Web page. Working with variables. Using object, properties, and methods. Creating events and event handlers. Creating and working with various types of operators. Working with dates, numbers, and math objects. Adding scripts to forms. Creating custom objects. Validating forms using scripts. Working with images. Debugging scripts.

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)
- Lab (04)
- DE Live Online Lab (04S)
- DE Online Lab (04X)

Instructional Techniques

Lecture, demonstration, computer application programs, personal use of a computer, and collaborative learning

Reading Assignments

Student will spend approximately 2 hours on assigned weekly reading from the textbook.

Writing Assignments

Student will spend approximately 2 hours per week creating Web pages using HTML and Javascript and text contents.

Out-of-class Assignments

Students will spend a minimum of 2 hours per week creating Web pages containing scripts.

Demonstration of Critical Thinking

computer projects, exams consisting of multiple choice, true or false, hands on, and essay questions.

Required Writing, Problem Solving, Skills Demonstration

computer projects, exams consisting of multiple choice, true or false, hands on, and essay questions.

Eligible Disciplines

Computer information systems (computer network installation, microcomputer ...: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience. Computer information systems (computer network installation, microcomputer ...: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Flanagan, David . JavaScript: The Definitive Guide: Master the World's Most-Used Programming Language, 7 ed. O'REILLY, 2020