



CSIS-525: WEB DEVELOPMENT - LEVEL 2 (FORMERLY CSIS-125A)

Effective Term

Fall 2023

BOT Approval Date

06/23/2022

Discipline

CSIS - Computer Sci/Info Systems

Course Number

525

Course Title

Web Development - Level 2 (formerly CSIS-125A)

Short Title

Web Development 2

Credit Status (CB 04)

D - Credit - Degree applicable

Units**Lecture Units**

3.00

Total Units

3.00

Hours**Lecture Contact Hours**

48-54

Out of Class Hours Lecture

96-108

Total Contact Hours

48 - 54

Total Out of Class Hours

96 - 108

Total Student Learning Hours

144 - 162

Distance Education

Yes

Distance Education**Distance Education Type**

Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:

a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course



b. Any planned face-to-face meetings, such as an orientation or study session, must be optional

c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods:

- Orientation - Students must be oriented to the online and face-to-face portions at the start of the course.
- Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc.
- Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction.
- MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students.
- Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS.
- Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times. ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Catalog Description

This course covers client-side technologies used in Web application development. Its main focus is on how to write JavaScript software programs to create interactive front-end applications. Students will learn about the many facets of client-side programming including user agent objects, properties, events and behaviors, common programming tasks like defining variables, decision making, flow control, object-based programming and the Web-based resources which simplify common coding tasks like form validation, adding widgets and more. (formerly CSIS 125A)

Requisites

Prerequisite(s)

Prerequisite(s) (must be taken before)

CSIS-115A (with a grade of C or better).

Codes

TOP Code (CB 03)

0707.10* - *Computer Programming

CIP Code

11.0801 - Web Page, Digital/Multimedia and Information Resources Design.

Repeatability Code

No

Grading Option

Letter grade OR P/NP

Learning Objectives

Learning Objectives

Learning Objective

1. Design and create algorithms for solving simple problems.

2. Compare and contrast the primitive datatypes of the JavaScript programming language; describe how each is stored in memory; and identify the criteria for selection.

3. Apply the program development process to problems that are solved using fundamental JavaScript programming constructs and predefined data structures.
4. Derive program correctness through the development of sound test plans and the implementation of comprehensive test cases.
5. Analyze and trace the execution of JavaScript computer programs.
6. Decompose a program into subtasks and use parameter passing to exchange information between the subparts.
7. Differentiate between object-oriented, structured, and functional programming methodologies.
8. Analyze technical information, as well as listen effectively to, communicate orally with, and prepare memos, reports and documentation for a wide range of audiences.
9. Investigate and assess new sources of information and learning opportunities to stay abreast of emerging information and computing technologies.
10. Evaluate career paths related to the program of study, as well as any qualifications and/or professional certifications that may be associated with those careers.
11. Apply cultural and gender sensitivity in the workplace.
12. Analyze JavaScript coding options for impact on culture and gender inclusiveness and diversity

Learning Outcome Information

Course Learning Outcomes

Learning Outcome

Code and implement a Javascript if statement to handle a branching problem (as described in a problem/case scenario)

Code and implement a Javascript switch statement to handle a branching problem (as described in a problem/case scenario).

Code and implement a While loop construct in Javascript for a given problem

Code and implement a For loop construct in Javascript for a given problem

Prepare a technical report or presentation on some advanced aspect of web development.

Research and identify career paths related to the web development program.

Engage in multiple and simultaneous outcomes and activities.

Identify options and generate alternative approaches.

Recognize the benefits of working in diverse and inclusive job environments.

Program Learning Outcomes

Learning Outcome

Recognize that a system consists of people, procedures, hardware, software, and data within a global environment.

Apply systems concepts in the investigation, evaluation, and resolution of information technology problems.

Recognize how the very large amounts of data collected by modern organizations can be used to review, redesign, and improve processes.

Employ applications software and software tools in the application of information technologies to help individuals, groups, and organizations achieve their goals.

Analyze technical information, as well as listen effectively to, communicate orally with, and prepare memos, reports and documentation for a wide range of audiences.

Investigate and assess new sources of information and learning opportunities to stay abreast of emerging information and computing technologies.

List career paths related to the program of study, as well as any qualifications and/or professional certifications that may be associated with those careers.

Institutional Learning Outcomes

Aesthetic Awareness: The student will identify and evaluate how aesthetic expression leads to an appreciation of social and cultural context as well as the values of art and nature.

Communication: The student will effectively express and exchange ideas through listening, speaking, reading, writing, visual works, and other modes of interpersonal expression.

Critical Thinking: The student will analyze problems, gather and synthesize relevant information, evaluate ideas, information, and evaluate alternative points of view to create, innovate and implement effective solutions.

Cultural Awareness and Humility: The student will demonstrate knowledge of and sensitivity toward individuals of diverse ethnicity, age, gender, sexual orientation, and religious affiliations, as well as toward those individuals with diverse abilities and socio-economic classes to respectfully interact with individuals of diverse perspectives, beliefs and values while being mindful of the limitation of their own cultural frameworks.

Information and Technology Literacy: The student will access, interpret, evaluate, and apply relevant information sources and digital media effectively, and in an ethical and legal manner.

Social Awareness: The student will recognize and analyze the interconnectedness of global, national, and local concerns, analyzing cultural, political, social, and environmental issues from multiple perspectives and appreciate similarities and differences among cultures.

**Personal
and Professional Responsibility
Civic**

Content

Course Lecture Content

1. HTML as an SGML Application for Supporting Diversity and Inclusion
 - a. Using DOCTYPE Declarations (DTDs)
 - b. Introduction to scripting languages
2. Client-side vs. server-side scripting
 - a. Working with the Script element
 - b. Understanding scripting syntax
 - c. Writing output to a Web document
 - d. Working with variables and functions
 - i. Implementing the toLocaleString() function to convert Date/Time objects to strings in a native local format.
 - e. Understanding the diverse and inclusive cultural aspects of client-side scripting
 - i. Communication Strategies for Equity, Diversity, and Inclusion
3. Accessing external JavaScript files
4. Debugging scripts
 - a. Introducing event processing
5. Working with operators and operands
 - a. Logical operators
6. Introduction to objects
 - a. The W3C Document Object Model (DOM)
 - b. Object methods and properties
7. Working with arrays
8. Working with loops
 - a. Working with conditional statements
9. Working with objects and styles
10. Working with forms and regular expressions
 - a. Introducing regular expressions
 - b. Matching substrings
 - c. Validating financial data
 - d. Implementing culturally sensitive forms which support diversity and inclusion
11. Passing data between forms
 - a. Working with the event model
 - i. W3C and Web browser event models
 - ii. Event bubbling and event capturing
 - iii. Attaching and listening for events
 - b. Introducing the event object
 - i. Formatting drag-and-drop action
 - ii. Setting the cursor style in a culturally aware fashion
 - iii. Working with keyboard events
 1. Keyboard event properties
 - a. Understanding the keypress event and character codes
 - i. Implementing culturally sensitive character coding
 2. Controlling and cancelling events
12. Introducing dynamic content and styles

- a. Inserting HTML into an element
- b. Exploring innerText and textContent
- 13. Working with nodes
 - a. Using a node tree
 - b. Determining node types, names and values
 - c. Looping through a child node collection
 - d. Expanding and collapsing a document
- 14. Switching between stylesheets
- 15. Exploring filters and transitions
 - a. Form validation Working with text strings
 - b. Implementing culturally sensitive form validation methods
- 16. Explore careers in the field of Web Development
 - a. Discovering where to find Web development jobs and how to apply for them
 - b. Learning soft skills for the job interview
 - c. Examine the interview testing process
 - d. Learn about diverse and inclusive workplaces
 - i. Identify and assess the benefits of equity and inclusion in the tech workplace and society at large (e.g. teamwork, creativity, innovation, competitive advantage, etc.).

Methods of Instruction

Method

Directed Study

Integration

Directed study will illustrate concepts and principles covered in lectures, supplemental instruction, and reading assignments, with a focus on the JavaScript programming language and its built-in objects as well as their properties, methods, and events. Each practice session will demonstrate how to write the coding structures necessary for completing the upcoming homework assignment. Guided practice will be demonstrated using a GUI-based integrated development environments (IDE) and include examples on how to create Web applications that follow the latest recommendations from the governing standards bodies which oversee and maintain the JavaScript programming language specification.

DE Adaptations for MOI

Step-by-step instructional videos will be provided to demonstrate procedural information to students in lieu of face-to-face directed study. Students will be able to access these resources via an accessible CMS. Assistance for students having problems completing a tutorial or an assignment will be provided via the accessible CMS messaging system.

Method

Lecture

Integration

Lecture supplemented with appropriate accessible audio-visual materials, including Internet resources, which illustrate conceptual and practical aspects of using JavaScript for diverse, inclusive and culturally relevant Web application development. For instance one or more accessible instructional videos from the Microsoft Virtual Academy could be used to demonstrate to students the proper way to implement culturally sensitive JavaScript into a Web application assignment.

DE Adaptations for MOI

All Distance Education instructional content will be delivered using an accessible CMS. Accessible Instructional videos and Web-based tutorials will be used in place of face-to-face lectures. Discussions will be facilitated using the accessible CMS in both group and whole class settings. Using the accessible CMS, students will also be able to message their colleagues within the class and their instructor for one-on-one assistance.

Method

Reading

Integration

Students will read step-by-step tutorials that introduce them to culturally diverse and inclusive clients like Curbside Thai restaurant in Charlotte North Carolina, the Cinema Penguin movie blog, the Lyman Hall Theater in Brookhaven Georgia which features performances from Broadway touring companies, the Japanese Puzzle factory, a birthing person who is a professor of history at Bridger College, and Aisha Jahlan who manages the website for Coctura Home Kitchen. These culturally diverse and inclusive tutorials will be used to help the student learn concepts and skills needed to complete the related assignment that goes with each tutorial in a culturally relevant manner.

DE Adaptations for MOI

Reading an accessible eBook, accessed from the accessible CMS, containing culturally diverse and inclusive step-by-step tutorials will be used to help the student learn concepts and skills needed to complete the related assignment that goes with each tutorial.

Method

Online Activity/Discussion

Integration

Guided discussion will be used as a metacognitive task to help students reinforce the JavaScript concepts being learned each week. In addition discussions will cover student observations of diversity and inclusiveness of the concepts when appropriate. For example students will be asked if they think individual JavaScript constructs in any way restrict diversity or prevent inclusion. Student will be evaluated on how well they demonstrated their understanding of the week's topics based on a provided rubric.

DE Adaptations for MOI

Instead of face-to-face discussions an accessible CMS discussion forum will be used instead. Student will be evaluated on how well they demonstrated their understanding of the week's topics based on a provided rubric.

Methods of Evaluation**Method**

Exams/Tests

Integration

A midterm and a final exam composed of multiple choice, true/false, and multiple answer questions that evaluate the student's understanding of the programming concepts presented in lectures, assigned reading and supplemental materials. Exams may also include hands-on Web application creation tests to evaluate the student's ability to construct and implement fully functional JavaScript solutions and will be evaluated using a provided rubric which identifies the minimum required constructs and syntax.

DE Adaptations for MOE

A midterm and a final exam composed of true/false, multiple choice, multiple answer and small programming examples will be used to evaluate each student's understanding of application development concepts and principles presented in-class and in their reading materials. In this case each student will be evaluated for their understanding of Web application development principles and practices based on how well the student's Web application meets the requirements of the application specifications. Students will also be evaluated on their ability to utilize common problem solving principles and to create proper solution algorithms. Exams will be administered and collected via the MSJC provided accessible CMS. Students will be informed of how to access exams via Announcements posted on the accessible CMS.

Method

Homework

Integration

Weekly Web application creation assignments will be used to evaluate a student's ability to construct and implement JavaScript solutions. Solutions will be graded according to a provided rubric which identifies the proper construct and syntax required for the assignment and how many points each task is assigned.

DE Adaptations for MOE

Weekly application development assignments used to evaluate the student's understanding of application development principles and procedures will be completed by the student. Completed student assignments will be published by the student to the CIS student

application server. The student will then email the correct URL for the assignment to the instructor for scoring in accordance with the CIS department email policy. Students will be evaluated based on how well the student's completed application meets the requirements of the homework as specified in the assignment rubric. Student will also be evaluated on their ability to utilize common problem solving principles and to create proper solution algorithms via instructor posted comments in the accessible CMS grading system.

Method

Projects

Integration

Student will be assigned a Web development project to complete which will be used as a formative evaluation in order for the student to learn how to complete the upcoming assignment. Student will be evaluated on how accurately the project conforms to the specifications provided in the accompanying rubric, given feedback by the instructor utilizing methods of diversity and equity, and given the opportunity to make any corrections as needed.

DE Adaptations for MOE

Students will post completed project to the CIS student Web server. Instructor will evaluate students work using a provided rubric and add comments about students work using a designated accessible CMS grading system.

Method

Quizzes

Integration

Low risk formative quizzes containing randomly selected true/false, matching, multiple choice, and multiple answer questions drawn from a pool of questions written for diversity and equity as related to the diverse and equitable instructional content the student is currently learning will be provided using an ADA compliant online LMS which will programmatically determine the students score on each attempt based on the number of correct answers provided. The LMS will always maintain the student's highest score so that they will be encouraged to retake the quiz many times without the risk of receiving a lower score and the correctly answered questions will be provided to the student to help the student evaluate how well they are retaining the instructional content and to determine whether or not they should continue taking the quiz in order to improve retention as preparation for an upcoming higher scoring summative assessment.

DE Adaptations for MOE

Students will access quizzes via the ADA compliant LMS which will automatically evaluate and score student answers, maintain their highest score and allow for repeated attempts.

Assignments**Assignment Type**

Writing

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

After reading the HTML file and assignment specifications posted in the Assignments folder of the MSJC designated accessible CMS course shell, write a JavaScript function which parses the semantic structure of the HTML document and dynamically generates a diverse, inclusive and culturally sensitive table of contents after the page is loaded into a Web browser. Publish your application to the student Web server and submit your application's URL to your instructor using the Assignment Submission link in the MSJC designated accessible CMS for scoring based on the posted assignment rubric.

How assignment will be adapted in online format

After reading the assigned accessible eBook consisting of step-by-step instructions for completing the assignment. Write the code using a source code editor previously installed on your own personal computer. Publish the assignment to the accessible CIS student Web server. Post the URL for the assignment using the link provided in the MSJC designated accessible CMS. Your assignment will be scored using the assignment rubric posted on the MSJC designated accessible CMS.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Summative

Assignment

After reading the assignment specifications posted in the Assignments folder of the MSJC designated accessible CMS course shell, use the provided XML file and the source code editor of your choice to write a JavaScript function which parses the XML file and displays it in an HTML-based report. Each item in the XML file need be displayed in a diverse, inclusive and culturally sensitive manner as a list item in an unordered list in accordance with the provided rubric. Publish the application to the student Web server and post the application's URL using the Assignment Submission link provided in the MSJC designated accessible CMS for scoring based on the posted assignment rubric. After the assignment has been scored, if need be, you will have the opportunity to make corrections to the assignment until it conforms to the requirements of the rubric.

How assignment will be adapted in online format

After reading the assignment specifications posted in the Assignments folder of the MSJC designated accessible CMS course shell, use the provided XML file and the source code editor of your choice to write a JavaScript function which parses the XML file and displays it in an HTML-based report. Each item in the XML file need be displayed in a diverse, inclusive and culturally sensitive manner as a list item in an unordered list in accordance with the provided rubric. Publish the application to the student Web server and post the application's URL using the Assignment Submission link provided in the MSJC designated accessible CMS for scoring based on the posted assignment rubric. After the assignment has been scored, if need be, you will have the opportunity to make corrections to the assignment until it conforms to the requirements of the rubric.

Assignment Type

Reading

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

Read the introductory narrative and each of the step-by-step instructions for tutorial 8 in your textbook to learn how to write the source code needed to build the cp_royal.html, the cp_styles.css, and the cp_captions.vtt files. Publish your tutorial8 folder to the student Web server and post the URL for the cp_royal.html file using the Submit Assignments link on the MSJC designated accessible CMS course shell home page to receive instructor feedback on the assignment.

How assignment will be adapted in online format

Textbook is provided in an accessible eBook format within the MSJC designated accessible CMS course shell. Students will complete the assignment outside of class using the a source code editor they have previously installed on the own personal computer. Then publish your tutorial8 folder to the student Web server and post the URL for the cp_royal.html file using the Submit Assignments link on the MSJC designated accessible CMS course shell home page to receive instructor feedback on the assignment.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Using research methods, identify, interpret, and evaluate front-end Web development companies that embed racial/cultural diversity and inclusion into their employee performance evaluations. Also, identify potential inequities and biases that if management addressed would give diverse voices equal attention and infuse a “speak up” culture potentially leading to increased profitability and/or increased industry recognition. You may research and select a variety of real-life companies, including minority- or women-owned companies, for this assignment. Prepare a two-page analysis of your findings and then complete an oral presentation using this information to the class. You will be required to locate at least two web sites as reliable sources of information.

How assignment will be adapted in online format

Same instructions as above except instead of the oral presentation, the student will post their report to the MSJC provided accessible CMS discussion forum.

Course Materials**Textbooks**

Carey, P. (2017). HTML, CSS and Dynamic HTML 6th Ed. Course Technology. ISBN: 9781305503922

Class Size Information**Class Size**

35

Class Size Category

B - Facilitated learning 35

Diversity and Inclusion**Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.**

Diversity and inclusion are infused throughout the course to create opportunities for students to develop new skills while acknowledging and honoring their existing knowledge base. All of the instructional materials are based on diverse and inclusive culturally relevant real world situations. In addition, the learning objectives have been updated to emphasize student awareness to diversity and inclusiveness opportunities when writing JavaScript code and the output it generates. For example creating cultural aware forms and functions which incorporate the toLocaleString() function to dynamically display dates and time in culturally relevant formats. Additionally, how to use regular expression in a culturally relevant manner when evaluating user input in Web forms.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

The course instruction, evaluations, content and interactions are designed to empower people of all cultures, genders, and sexes. Every student is encouraged to improve their assignment and quiz scores if they were not perfect in their first effort by by allowing them to continue taking a quiz or submitting an assignment and by individually identifying for them what the errors are and how to fix them.

Interactions**Explain how the course will incorporate student-to-student interaction.**

Use of accessible CMS discussion forums for online courses and in-class discussions for face-to-face classes covering the topics the scholars are learning at the time. For example asking the students to discuss with each other how JavaScript can be used to enhance the user experience of a Web site in a diverse and inclusive manner and having them share ways they can think of to provide more culturally relevant user experiences in their development projects, or asking students to discuss with each other what difficulties they are having with various JavaScript constructs, or asking them to discuss the quiz questions that they don't understand.

Explain how the course will incorporate instructor-to-student interaction.

Office hours online and face-to-face. In-class discussions for face-to-face classes, CMS discussion forums for online classes including a Help discussion forum. Email will be used to make the instructor as accessible as possible to their students in both face-to-face and online classes. This also has the effect of making students feel more confident about getting support from their instructor. Recorded accessible videos and live demonstrations will be used to show students to correctly write and use the coding concepts they are learning in the class.

Explain how the course will incorporate student-to-content interaction.

Students will complete step-by-step tutorials which explain and demonstrate concepts and techniques for writing client-side coding used in creating an interactive user experience. In addition, students will be building their own Web development projects using these concepts and techniques as they are learning to help reinforce the neural pathways developed during the learning process.

Explain how the course will incorporate student-to-self interaction (metacognitive).

Scholars will be provided with self-evaluation exercises where they are asked to think about their applications of various learning methods like repetition, elaboration, memorization, coding practice for building muscle memory, building self-designed projects, etc., their personal study habits, their use of self-discipline to accomplish task in the class are just some examples of the prompts that will be used. Students will post responses to these exercises in a personal journal that they will add to throughout the class.

Key: 1088