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# CSIS-115A: WEB DEVELOPMENT - LEVEL 1

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**Effective Term**

Fall 2025

**BOT Approval Date**

01/16/2025

**Discipline**

CSIS - Computer Sci/Info Systems

**Course Number**

115A

**Course Title**

Web Development - Level 1

**Short Title**

Web Development - Level 1

**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?

Yes

### 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 teaches students the basic skills needed to create web pages with an emphasis on the Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS). Students are also introduced to, the Hypertext Transfer Protocol (HTTP), Uniform Resource Locators (URLs), how to write code using an integrated development environment (IDE), and publishing to a web server using the secure file transfer protocol (FTPS). It also emphasizes Inclusive web Design and Accessibility.

### Requisites

#### Recommended Preparation

**Recommended Preparation (note that students can enroll in the class even if they haven't take the recommended course)**

CSIS-111B and/or CSIS-103.

### 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. Compare and Contrast text-based HTML editors to GUI-based HTML editors.
2. Examine basic HTML markup and contrast markup languages to programming languages.
3. Compose Cascading Style Sheets (CSS) and apply styles to HTML elements.
4. Compare the methods of applying CSS layers for page structure versus using HTML tables.
5. Evaluate methods used to enhance an HTML-based web page.

6. Compose an HTML document consisting of business form elements.
7. Employ FTP to publish Web pages to a Web server.
8. Construct a Uniform Resource Locator (URL).
9. Compose a web page that incorporate inclusive web design and accessibility.

## Learning Outcome Information

### Course Learning Outcomes

#### Learning Outcome

1. Students will create a web page that uses CSS and includes: a page title, narrative, graphics, and working hyperlinks.
2. Students will compose Cascading Style Sheets (CSS) and apply styles to HTML elements.
3. Students will compare the methods of applying CSS layers for page structure versus using HTML tables.
4. Students will evaluate methods used to enhance an HTML-based web page.
5. Students will compose an HTML document consisting of business form elements.
6. Students will employ FTP to publish Web pages to a Web server.
7. Students will construct a Uniform Resource Locator (URL).
8. Students will create a web page that incorporates inclusive web design.
9. Students will create a web page that includes accessibility.

### 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 existing processes based on interviewing, observation, documentation, analysis and other similar methods.

Research and apply industry reference models and best practices in order to improve process designs.

Assess, manage, and control IT risks.

Demonstrate working effectively as a member of a team to accomplish common 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.

Civic

Personal

and Professional Responsibility

## Content

### Course Lecture Content

1. History of the World Wide Web
  - a. Tim Berners Lee and the CERN Dilemma
  - b. Identifying the Components of Web Development
    - i. The Internet
      1. How Data Communication Networks Work
        - a. Understanding the purpose of the HTTPS protocol
        - b. Understanding the purpose of the FTPS protocol
    - ii. Web browsers
      1. Identifying the components of a URL
      2. Using search engines
    - iii. Web Servers
      1. Exploring Web Servers
        - a. Website organization
        - b. Using Virtual Directories and their benefits
        - c. Hosting settings
        - d. Examining the necessity of SSL/TLS Certificates
    - iv. Database servers
      1. Types of data
      2. Organization of data
      3. retrieving data
2. Creating an HTML document
  - a. Create the structure of an HTML document
    - i. Define a page title
    - ii. Insert metadata into a document
    - iii. Insert HTML elements and attributes
    - iv. Working with block-level elements
    - v. Working with inline elements
    - vi. Using element attributes
  - b. Creating a hypertext link
  - c. Working with images.
    - i. Creating linked images and image maps
  - d. Linking to resources on the Internet
  - e. Uniform resource locators (URLs)
  - f. Using the Link element
3. Using cascading style sheets (CSS)
  - a. Explore the history of CSS
  - b. Study Different types of style sheets
  - c. Understanding how to apply color with CSS
  - d. Use contextual selectors
  - e. Work with attribute selectors
  - f. Apply text and font styles
  - g. Use a web font
  - h. Applying style sheets
    - i. Define list styles
    - j. Work with margins and padding space
  - k. Use pseudo-classes and pseudo-elements
  - l. Insert page content with CSS

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- m. Working with styles developed for different media types
    - n.
      - i. Different ways to add video
      - ii. Way of inserting audio
      - iii. using iFrames
    - o. Working with the box model
    - p. Working with overflow and clipping
    - q. Controlling page layout with div containers
    - r. Applying styles to lists
    - s. Positioning and layering with CSS
    - t. Using CSS for animation
  - 4. HTML tables
    - a. Creating table headers
    - b. Creating table rows
    - c. Creating table cells
  - 5. HTML forms
    - a. HTML form elements
    - b. Applying CSS to form elements
  - 6. Responsive web design
  - 7. The history of digital accessibility and why it matters
  - 8. Web Content Accessibility Guidelines (WCAG)
    - a. Who WACG is for
    - b. What is in WCAG 2
    - c. Who Develops WCAG
  - 9. Inclusive design using:
    - a. HTML semantics
    - b. ARIA Roles
    - c. Proper alt Text for Images
    - d. Keyboard Navigation
    - e. ensuring color contrast for readability
  - 10. WAVE Web Accessibility Evaluation Tools
    - a. WAVE Browser Extensions
      - i. Identifying Contrast Errors
      - ii. Identifying Text That Is Too Small
      - iii. Evaluating Proper Use of Structural Elements
    - b. WAVE API and Testing Engine
    - c. Accessibility IMPact (AIM) Report

## Methods of Instruction

### Method

Activity

### Integration

Guided practice will illustrate lecture principles and reading assignments, with a focus on markup languages, and the key HTML elements and attributes required for completing homework assignments. Guided practice will include using text-based HTML editors for creation of HTML documents that follow the latest recommendations from the World Wide Web Consortium (W3C) and emphasizing accessibility requirements.

All materials provided in this course will be accessible.

### DE Adaptations for MOI

Instructor will post coding examples on the CMS and help debug student coding problems via asynchronous email or CMS messaging exchanges. The instructor will also provide feedback on student assignments with comments in the CMS gradebook, giving them the opportunity to improve their assignment and thereby score for the assignment.

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**Method**

Lecture

**Integration**

Lectures, complemented with the appropriate audio-visual materials, including WWW Internet resources, will illustrate conceptual and practical aspects that use HTML in Web development to incorporate accessibility for inclusiveness of marginalized communities. Lectures will emphasize the role of HTML in Web page design and the emerging technologies that enhance and extend a basic HTML document to more devices for reaching marginalized communities. All materials provided in this course will be accessible.

**DE Adaptations for MOI**

Lecture will be accomplished using instructor prepared web based lectures, demonstration videos, and links to appropriate reference sites. Discussions will take place using the course management system discussion board in both group and whole class setting.

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**Method**

Reading

**Integration**

Readings from the textbook or e-book, other web-based sources are used to elaborate lectures, and inform guided practice on topics that include the appropriate use of various HTML elements and attributes, meta tags, and CSS properties; which include the latest accessibility recommendations from the W3C. All materials provided in this course will be accessible.

**DE Adaptations for MOI**

All resources listed above are available using links provided in the course shell on the CMS.

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**Method**

Individual Projects

**Integration**

Using a textbook or e-book and instructor provided instructional videos, students will be assigned real-world projects building web pages for fictitious customers (which includes marginalized communities) and publish them to a remote Web server. All materials provided in this course will be accessible.

**DE Adaptations for MOI**

All instructional resources listed above are available on the Internet which are accessed using links provided in the course shell on the CMS.

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**Methods of Evaluation****Method**

Exams/Tests

**Integration**

A midterm and a final exam composed of multiple choice and short answer questions that show the students understanding of the HTML and CSS concepts presented in class. Exams may also include hands-on web page creation tests.

**DE Adaptations for MOE**

Exams will be conducted through use of a CMS. Students will email or post to the CMS their coding projects for instructor critique and scoring.

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**Method**

Homework

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**Integration**

Weekly Web page creation assignments to reinforce lectures and guided practice to include but not limited to Composing Cascading Style Sheets (CSS) and applying styles to HTML elements. Students are graded based on a posted rubric for each assignment which will include requirements like "if student correctly implements the HTML element they will receive the total amount of points assigned to the task otherwise they will receive zero points for the task."

Instructor will provide feedback on homework submissions and allow the students to improve their work (if necessary).

**DE Adaptations for MOE**

In lieu of homework, students will be assigned individual HTML projects which they will submit via email or CMS to the instructor for critique and scoring.

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**Method**

Quizzes

**Integration**

Students will complete formative quizzes weekly based on the topics presented in the weekly instructional material. Students will be given the option of repeating the quizzes as many times as they want to become more familiar with the material and to provide meta-cognitive evaluation to determine how well they are retaining the instructional information and to prepare for the mid-term and final exams (summative exams).

**DE Adaptations for MOE**

Students will complete all of the above using the course shell on the cms.

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**Assignments****Assignment Type**

Writing

**In-class and/or outside of class**

In-class

**Formative or Summative**

Formative

**Assignment**

Construct a Web page that incorporates the following elements: a level 1 heading, a paragraph, an unordered list, an ordered list with diamond-shaped bullets, a horizontal rule, a superscript, a subscript, a registered trademark symbol, and a copyright symbol. You will be evaluated based on your ability to incorporate at least one of each of the described elements into an html document. Construct an external style sheet that includes the following CSS rules: a body selector with a sans-serif font-family of at least three fonts and a font size of 12 pixels; an h1 selector with a font size of 24 pixels, and text alignment of horizontal center; an h2 selector with a font size of 14 pixels and horizontal alignment set to left; an anchor selector with the text decoration set to none; an anchor pseudo-selector of hover with the text decoration set to underline. You will be evaluated on your ability to assign the correct CSS properties to the specified selector and to properly format each CSS rule. Link your external style sheet to your html document and using FTP, publish both files to the specified Web server. You will be evaluated on your ability to link an external style sheet to an html document and publish your files to a Web server using FTP. You will be evaluated on your ability to link your style sheet to the HTML document and your ability to use FTP to successfully publish your documents to a given Web server; as well as your ability to follow the instructions for how the web page should be built.

Once your submission is scored by the instructor, if you earned less than full credit on the assignment, you will be given the option to make corrections and republish the corrected files to the student web server. Then repost your assignment URL using the CMS course shell in order to improve your score. Once the URL is re-posted the instructor will again score the assignment. This can be an ongoing iterative process that continues until the last day of the class.

**How assignment will be adapted in online format**

Students use their personal computer to view the assignment instructions in their textbook or e-book to create and save HTML and CSS files and to publish those files to the student web server. The Student then posts the URL for the assignment to the assignment page on the cms course shell.

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**Assignment Type**

Other

**In-class and/or outside of class**

Outside of class

**Formative or Summative**

Formative

**Assignment**

Complete the quiz covering the Web Content Accessibility Guidelines (WCAG) presented in this week's lecture . You are encouraged to take the quiz numerous times in order to see all of the questions within the question pool. The CMS system will always keep your highest score; so there is no risk to keep taking the quiz as many time as you want. The same pool of questions will be used to randomly generate the final exam question pool. The CMS will present you with your auto graded score based on correctness at the completion of each quiz. You will be able to review your score and get feedback on which questions you answered correctly or not using the CMS.

**How assignment will be adapted in online format**

Since the quizzing process is generated online using the cms course shell, no adaption for online classes is necessary.

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**Assignment Type**

Other

**In-class and/or outside of class**

Outside of class

**Formative or Summative**

Summative

**Assignment**

Complete the final exam using the CMS quiz app in the course shell. The exam will randomly select questions from each of the questions pools used to create the quizzes you have already completed. When done, the CMS will present you with your auto graded score based on correctness at the completion of the exam. You will be able to review your score and get feedback on which question you got correctly or not using the CMS. The final exam can only be taken one time, so be sure you are prepared to take the exam before you start it.

**How assignment will be adapted in online format**

Since the cms is used to generate the exam experience for the student, no adaptation is necessary for presenting the final exam to the student online.

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**Assignment Type**

Reading

**In-class and/or outside of class**

In-class

Outside of class

**Formative or Summative**

Formative

**Assignment**

Read Tutorial 10: Making Web Pages Accessible for Vision Impaired Populations in your textbook or e-book. Follow the step-by-step instructions to create an accessible web page using your source code editor of choice. Then, using your FTPS tool of choice publish the web page and all supporting files to the student web server. Finally, post the correct URL for the published web page on

the tutorial 10 Assignment page in the cms course shell. You will be graded for accuracy and completeness for each of the steps identified in the instructions.

#### **How assignment will be adapted in online format**

All instructional materials in this course are accessible. For the hybrid and fully online portion of this course students will use their personal computer instead of a classroom computer to complete all the the instructions listed above.

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## **Course Materials**

### **Textbooks**

Carey, P (2017). New Perspectives on HTML5, CSS3, and JavaScript 6th Edition Course Technology. ISBN: 978-1305503922

## **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.**

Inclusion will be incorporated in the course using several lectures which explain the importance of inclusive Web design and accessibility, including the following:

1. Relevance: Inclusive design is a foundational concept that emphasizes the importance of building websites and applications that are accessible to all users, regardless of their abilities or backgrounds.
2. Technical Integration: It ties directly into the practical aspects of web development, such as using semantic HTML, ARIA roles, proper alt text for images, keyboard navigation, and ensuring color contrast for readability.
3. Awareness: It introduces students to the social responsibility of web developers to create equitable digital experiences. They will learn that good web design considers diverse user needs, including those with disabilities.
4. Skill Development: Understanding and implementing accessibility features is a valuable skill in the tech industry. This knowledge can set students apart as developers who prioritize user experience for everyone.

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

Multiple teaching modalities, such as visual aids, audio resources, and hands-on activities that cater to different learning styles, will be incorporated into the lectures and written material for the class. Assignments will be framed around real-world web development projects with each offering hands-on experiences with how to build accessible web pages from clearly instructive coding models. Students will be encouraged to share their experiences related to inclusive web design and accessibility concepts in an inclusive discussion environment so that students will feel comfortable expressing themselves and engaging in conversation.

The course lecture material will be infused with diversity. It will reflect diverse voices and perspectives on the field of web development. The works of researchers, practitioners, and innovators from various backgrounds and cultures will be highlighted. Rubrics describing exactly how the students will be scored will be provided for each assignment.

## **Interactions**

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

The course will include facilitated weekly discussions about HTML, CSS, and accessibility so students can discuss web development and accessibility concepts, share insights, and ask questions. Questions will be posed, and case studies will be offered to stimulate discussion. Within the observation and demonstration aspect of the class, students will be encouraged to share their ideas and thoughts to solve accessibility problems and content biases.

In the hybrid and online versions of the course the CMS course shell discussion forums will be used to facilitate these weekly discussions. Questions and case studies will be posted in a discussion forum and where students will be required to make an initial post with their thoughts and they will also be required to respond to other student posts as well to ensure robust discussions.

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

Instructor-to-student interaction will be incorporated through recorded lectures on HTML, CSS and accessibility, which include question-and-answer sessions where student questions can be answered and clarified. Tutors who have previously completed the course will be made available for peer tutoring.

Office hours will be provided where students can meet with the instructor in one-on-one or small groups to discuss course content, seek clarification, or receive additional help and feedback on assignments. Emails to the instructor will be promptly replied to.

Personalized feedback on assignments will be provided.

In the hybrid and online versions of the course, the course shell on the CMS will be used to provide instructor to student interactions including email and CMS messaging during office hours and instructor comments added when scoring student assignments. Peer tutors are also accessible in a fully-online basis.

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

The lectures emphasize interaction, incorporating small coding problems, quizzes, and open-ended discussions. At the end of major milestones in the course, formative quizzes will be given, allowing the students to gauge their progress. Formative quizzes will also be placed within the reading material so students can test their understanding of the material presented.

In the hybrid and online versions of the course students will have access to all of the content items listed above using instructor provided links in the CMS course shell.

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

The lectures will include HTML, CSS, and accessibility exercises that prompt students to think about how they learn best. Students will be encouraged to reflect on their study habits, identify effective learning strategies, and suggest potential adjustments.

Assignments that involve best practice for implementing HTML, CSS, accessibility and preventing bias analysis will include metacognitive reflection prompts at the end of the assignment. An example is "How confident are you in your solution and why?"

For hybrid and online classes practice quizzes and ungraded surveys will be used to provide meta-cognitive feedback as to how well the student is progressing in the class. That and the fact that students can repeat the formative graded quizzes as many times as they want in order to gauge how well they are learning the material.

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