1. **COURSE ID:** CIS 127   **TITLE:** HTML5 and CSS
   Units: 3.0 units **Hours/Semester:** 48.0-54.0 Lecture hours; and 96.0-108.0 Homework hours
   Method of Grading: Grade Option (Letter Grade or Pass/No Pass)
   Recommended Preparation:
       Completion of CIS 111 or CIS 254.

2. **COURSE DESIGNATION:**
   Degree Credit
   Transfer credit: CSU; UC

3. **COURSE DESCRIPTIONS:**
   Catalog Description:
       Introduction to HTML5 and CSS (Cascading Style Sheets). Covers CSS3, HTML5 elements, HTML5
       APls, forms, audio and video, offline applications, Canvas drawing and animation, communication APls,
       Web Sockets, and Web Workers. Introduces HTML5 Geolocation, local and session storage, the Web SQL
       Database, and advanced topics such as mobile web applications, performance analysis, browser issues, and
       developer tools. Intended for students with previous programming experience.

4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**
   Upon successful completion of this course, a student will meet the following outcomes:
       1. Develop HTML5 Web and offline applications using CSS for layout.
       2. Use the HTML5 Canvas element for drawing and animation.
       3. Create HTML5 applications that employ audio and video.
       4. Develop Web applications for various mobile devices.
       5. Use HTML5 APls for geolocation, communications, sockets, and threads.
       6. Employ HTML5 storage capabilities for local and session storage, and the Web SQL Database.
       7. Create an advanced project using the various HTML5 technologies, with attention to security and
          performance.

5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**
   Upon successful completion of this course, a student will be able to:
       1. Develop HTML5 Web and offline applications using CSS for layout.
       2. Use the HTML5 Canvas element for drawing and animation.
       3. Create HTML5 applications that employ audio and video.
       4. Develop Web applications for various mobile devices.
       5. Use HTML5 APls for geolocation, communications, sockets, and threads.
       6. Employ HTML5 storage capabilities for local and session storage, and the Web SQL Database.
       7. Create an advanced project using the various HTML5 technologies, with attention to security and
          performance.

6. **COURSE CONTENT:**
   Lecture Content:

       1. HTML5 and CSS Overview
             A. History of HTML5 and CSS (Cascading Style Sheets)
             B. WHATWG and W3C specifications
             C. Levels of CSS: CSS1, CSS2, CSS3
       2. Introduction to HTML5 Markup
             A. HTML5 page structure
             B. HTML5 DOCTYPE
             C. HTML5 elements
                         i. Structural elements
                        ii. Semantic elements
                       iii. Deprecated elements
             D. HTML5 and CSS
             E. Using HTML5 in browsers that do not support it

i. Detecting native availability of HTML5 features
ii. Emulation
3. Introduction to CSS
    A. Selectors
    B. Layout
    C. Visual effects
    D. Transformations and animation
    E. Browser issues
4. Overview of HTML5 APIs
    A. Common building blocks
    B. Programming HTLM5
            i. JavaScript
            ii. DOM scripting
5. HTML5 Forms
    A. HTML5 form elements
    B. Building and using HTML5 forms
6. HTML5 Offline Applications
    A. Offline manifest files
    B. ApplicationCache events
7. HTML5 Audio and Video
    A. Audio and video elements
    B. Containers and codecs
    C. Audio and video APIs
8. HTML5 Canvas
    A. Canvas coordinates
    B. Canvas APIs
    C. Drawing operations
    D. Canvas transforms
    E. Animation
9. HTML5 Communication APIs
    A. Cross-document messaging
    B. XMLHttpRequest Level 2
            i. Progress events
            ii. Cross-origin resource sharing
    C. Server-sent Events
10. HTML5 Web Sockets
    A. Introduction to sockets
    B. Web Sockets API
    C. Web Sockets Protocol
11. HTML5 Web Workers
    A. Introduction to threads
    B. Web Worker communication
    C. Web Workers APIs
12. HTML5 Geolocation
    A. Geolocation overview
            i. User Privacy
            ii. Location information sources
    B. Geolocation APIs
13. HTML5 Storage
    A. Local Storage
    B. Session Storage
    C. Web SQL Database
14. Advanced Topics
    A. HTML5 on mobile devices
    B. Performance Analysis
    C. Developer Tools

7. **REPRESENTATIVE METHODS OF INSTRUCTION:**

Typical methods of instruction may include:
- A. Lecture
- B. Directed Study
- C. Activity
- D. Discussion
- E. Observation and Demonstration
- F. Other (Specify): Lecture will be used to introduce new topics; Instructor will model problem-solving techniques; Class will solve a problem together, each person contributing a potential "next step"; Instructor will invite questions AND ANSWERS from students, generating discussion about areas of misunderstanding; Instructor will create and manage an Internet forum for discussion of course topics; and students will work in small groups to solve programming assignments.

8. **REPRESENTATIVE ASSIGNMENTS**
Representative assignments in this course may include, but are not limited to the following:
Writing Assignments:
> Weekly programming assignments that will cover the following topics:
- A. HTML5 and CSS (Cascading Style Sheets)
- B. HTML5 elements
- C. HTML5 APls
- D. Forms, audio and video
- E. Offline applications
- F. Canvas drawing and animation
- G. Communication APls
- H. Web Sockets and Web Workers
- I. HTML5 Geolocation
- J. Local and session storage
- K. Web SQL Database
- L. Mobile Web applications
- M. Performance analysis, browser issues, and developer tools

Reading Assignments:
> Reading assignments accompanied by self-test questions and testing code examples.

9. **REPRESENTATIVE METHODS OF EVALUATION**
Representative methods of evaluation may include:
- A. Exams/Tests
- B. Group Projects
- C. Homework
- D. Lab Activities
- E. Projects
- F. Quizzes
- G. Written examination
- H. Bi-weekly quizzes (short answer--from textbook material) to provide feedback to students and teacher; Assessment of student contributions during class discussion and project time; Individual Midterm and Final exams (short answer -- textbook material), general problem solving (similar to in-class work), short program segments (similar to programming assignments); Assessment of group participation on course projects, including peer-assessment of participation and contribution to the group effort.

10. **REPRESENTATIVE TEXT(S):**
Possible textbooks include:
- A. Boehm & Ruvalcaba. *Murach's HTML5 and CSS3*, 4th ed. Murach, 2018
- B. Sapp. *Front-end Web Developer (Careers in Technology Series): JavaScript, HTML5, and CSS3*, 1st ed. Addison-Wesley Professional, 2018
- C. Carey. *New Perspectives HTML5 and CSS3: Comprehensive*, 8th ed. Course Technology, 2020

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Course Originator: Melissa Green