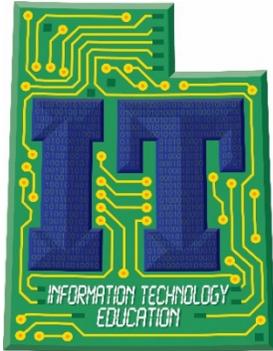# STRANDS AND STANDARDS
HTML5 APPLICATION DEVELOPMENT FUNDAMENTALS

Course Description

This course is designed to provide students with an assessment of their knowledge of fundamental HTML5 application development concepts. It can also serve as a stepping stone to additional exposure to Web Development careers.

Students will explore core HTML5 client application development skills that will run on today's touch-enabled devices (PCs, tablets, and phones). Although HTML is often thought of as a web technology that is rendered in a browser to produce a UI, this course focuses on using HTML5, CSS, and JavaScript to develop client applications. After successful completion of this course, students should have solid foundational knowledge of HTML5, CSS and JavaScript. It is recommended that students be familiar with the concepts of and have some hands-on experience with the related technologies.

CTE® Learning that works for Utah

Intended Grade Level	9-12
Units of Credit	0.5
Core Code	35.02.00.00.055
Concurrent Enrollment Core Code	35.02.00.13.055
Prerequisite	Web Development 1, Computer Science Principles, Digital Business Applications, or Teacher Approval
Skill Certification Test Number	992, 9921, 9454, 993, 994
Test Weight	1.0
License Type	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Web Development, or
Endorsement 2	Computer Programming (Historic), or
Endorsement 3	Computer Science Level 1, or
Endorsement 4	Computer Science Level 2

STRAND 1

Manage the Application Life Cycle

Standard 1

Understand the platform fundamentals.

- Packaging and the runtime environment:
- App package, app container, credentials/permission sets, host process, leveraging existing HTML5 skills and content for slate/tablet applications

Standard 2

Manage the state of an application.

- Manage session state, app state, and persist state information;
- Understand states of an application

Standard 3

Debug and test an HTML5-based touch-enabled application.

Standard 4

Publish an application to a store.

- Windows Store;
- Third-party stores

STRAND 2

Build the User Interface by Using HTML5

Standard 1

Choose and configure HTML5 tags to display text content.

Standard 2

Choose and configure HTML5 tags to display graphics.
- When, why, and how to use Canvas;
- When, why, and how to use SVG

Standard 3

Choose and configure HTML5 tags to play media.
- Video and audio tags

Standard 4

Choose and configure HTML5 tags to organize content and forms.
- Tables, lists, sections;
- Semantic HTML

Standard 5

Choose and configure HTML5 tags for input and validation.

STRAND 3

Format the User Interface by Using CSS

Standard 1

Understand the core CSS concepts.
- Separating presentation from content – create content with HTML and style content with CSS;
- Managing content flow - inline vs. block flow
- Managing positioning of individual elements – float vs. absolute positioning
- Managing content overflow – scrolling, visible, and hidden
- Basic CSS styling

Standard 2

Arrange user interface (UI) content by using CSS.
- Using flexible box and grid layouts to establish content alignment, direction, and orientation;
- Proportional scaling and use of "free scape" for elements within a flexible box or grid;
- Ordering and arranging content;
- Concepts for using flex box for simple layouts and grid for complex layouts;
- Grid content properties for rows and columns;
- Using application templates

Standard 3

Manage the flow of text content by using CSS.

- Regions and using regions to flow text content between multiple <div> sections – content source, content container, dynamic flow, flow-into, flow-from, msRegionUpdate, msRegionOverflow, msGetRegionContent();
- Columns and hyphenation and using these CSS settings to optimize the readability of text;
- Using "positioned floats" to create text flow around a floating object

Standard 3

Manage the graphical interface by using CSS.

- Graphics effects - rounded corners, shadows, transparency, background gradients, typography, and Web Open Font Format;
- 2D and 3D transformations – translate, scale, rotate, skew, and 3D perspective transitions and animations;
- SVG filter effects;
- Canvas

STRAND 4

Code by Using JavaScript

Standard 1

Manage and maintain JavaScript.

- Creating and using functions;
- Using Windows Library for JavaScript, jQuery, and other third-party libraries

Standard 2

Update the UI by using JavaScript.

- Locating/accessing elements;
- Listening and responding to events;
- Showing and hiding elements;
- Updating the content of elements;
- Adding elements

Standard 3

Code animations by using JavaScript.

- Using the animation library

Standard 4

Access data access by using JavaScript.

- Sending and receiving data;
- Transmitting complex objects and parsing; accessing databases and indexed DB;
- Loading and saving files;
- App Cache

Standard 5

Respond to the touch interface.

- Gestures, how to capture and respond to gestures

Standard 6

Code additional HTML5 APIs.

- GeoLocation, Web Workers, Web Sockets

Standard 7

Access device and operating system resources.

- Windows Runtime (WinRT);
- In memory resources such as contact lists and calendar;
- Hardware capabilities such as GPS, accelerometer and camera