

# School District of Springfield Township

## Springfield Township High School Course Overview

**Course Name: Web Application Development 1      Grade level(s): 9-12**

### Course Description

In Web Applications Development I students create functional and effective web pages and websites using current web standards. Students use the latest version of HTML and Cascading Style Sheets to produce informational websites. Emphasis is on planning, developing, and testing. Topics relate to human-computer interface as it applies to websites. Ethics, relating to web development, is a thread throughout this course sequence. Projects include informational and educational websites.

### Course Prerequisites

A minimum final grade of “C” in Computer Science 9

### Unit Titles

Unit 1: Using Web Standards (XHTML) to Create Web Sites

Unit 2: Using Web Standards (CSS) to Style Web Sites

Unit 3: Interface Development

Unit 4: Adding Interactivity

### Essential Questions

1. Why are standards important?
2. Who should be able to access applications?
3. How do we provide access?

### Big Ideas/Enduring Understandings

Unit 1: Using Web Standards (XHTML) to Create Web Sites

- Standards are in place to provide accessibility to technology resources to users
- Adherence to standards provides a framework for application development.
- The application development process starts and ends with the client.
- Web sites should be validated

Unit 2: Using Web Standards (CSS) to Style Web Sites

- The separation of content and style is advantageous for both the developer and the client.
- The separation of content and style is required for accessibility.
- Validation of CSS ensures sites will function regardless of browser upgrades.

### Unit 3: Interface Development

- User interface design requires prototyping and testing at the design stage.
- Principles of User Interface Design are culturally specific.

### Unit 4: Adding Interactivity

- Presentation of data in quantity is both a technical and interface problem.
- Allowing a user to provide input or change content on a site requires careful planning and testing.

## **Key Competencies/Skills/Procedures**

### Unit 1: Using Web Standards (XHTML) to Create Web Sites

- XHTML coding

### Unit 2: Using Web Standards (CSS) to Style Web Sites

- CSS coding

### Unit 3: Interface Development

- Designing the layout of sites
- CSS Positioning

### Unit 4: Adding Interactivity

- XHTML and CSS coding of tables and forms
- Using CGI to act on user provided information

## **Core Vocabulary**

### Unit 1: Using Web Standards (XHTML) to Create Web Sites

*absolute file address, attribute, client computers, deprecated, domain name system, element, extensions, eye line, file servers, file transfer protocol, graphics interchange file, hypertext, joint photographic experts group, markup, metadata, navigation, packets, portable document format, portable network graphics, protocol, quirks mode, relative file address, renders, resample, screen tip, standards mode, syntax, TCP/IP, tracer, URL, validate*

### Unit 2: Using Web Standards (CSS) to Style Web Sites

*class selector, cascade, cross-browser support, declaration, dependent, descendent, em, embedded, hex, inheritance, kerning, keyword, platform, pseudo-element, rule, sans-serif, selector, serif, tiling*

### Unit 3: Interface Development

*absolute positioning, elastic layout, faux columns, flanking, gutter, hybrid layout, liquid layout, media attribute, overflow, pull quote, relative positioning, sidebar, source order, specificity, universal selector, viewport, zero out*

### Unit 4: Adding Interactivity

*action attribute, alphanumeric, caption, cell, CGI, colspan, database, gridlines, key cell, legacy, method, row striping, rowspan, scope, script, span.*

### **Core Resources**

Teacher created materials available on our Moodle

*Blended HTML, XHTML, and CSS, 2nd Edition* by Henry Bojak

### **Pennsylvania State Standards and/or Anchor Standards Guiding Course**

#### **Pennsylvania State Science and Technology Standards:**

3.1.12.A. Apply concepts of systems, subsystems, feedback and control to solve complex technological problems.

3.1.12.C. Assess and apply patterns in science and technology

3.2.12.A. Evaluate the nature of scientific and technological knowledge.

3.2.12.D. Analyze and use the technological design process to solve problems

3.6.12.B. Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding.

3.7.12.A. Apply advanced tools, materials and techniques to answer complex questions

3.7.12.B. Evaluate appropriate instruments and apparatus to accurately measure materials and processes.

3.7.12.C. Evaluate computer operations and concepts as to their effectiveness to solve specific problems.

3.7.12.D. Evaluate the effectiveness of computer software to solve specific problems.

3.7.12.E. Assess the effectiveness of computer communications systems.

3.8.12.A. Synthesize and evaluate the interactions and constraints of science and technology on society

3.8.12.B. Apply the use of ingenuity and technological resources to solve specific societal needs and improve the quality of life

3.8.12.C. Evaluate the consequences and impacts of scientific and technological solutions

#### **CSTA Proposed National Curriculum for Computer Science (Level III):**

1. Fundamental ideas about the process of program design and problem solving, including style, abstraction, and initial discussions of correctness and efficiency as part of the software design process
2. Simple data structures and their uses
3. Design for usability
4. Levels of language, software, and translation
5. The limits of computing
6. Principles of software engineering
7. Social issues: software as intellectual property, professional practice
8. Careers in computing

Prepared June 2011-TP

Approved-chr