

Pellissippi State Community College
Master Syllabus

**ACCESSIBLE WEB DESIGN AND COMPLIANCE
WEB 2401**

Class Hours: 3.0
Laboratory Hours: 0.0

Credit Hours: 3.0
Revised: Fall 2016

Catalog Course Description:

This advanced course teaches authoring and design of Web pages and sites that comply with various standards, guidelines, and regulations. It examines legal requirements and emphasizes best practices and techniques for industry and e-commerce solutions. Web sites are reviewed for accessibility and usability. Students learn to apply POUR principles and universal-design concepts to their own creations, with exercises and projects that accommodate individuals with assorted disabilities (e.g., visual, mobility, auditory, cognitive). Case studies will be reviewed, and online resources for creating and accessing Web content will be used. Site conformance, assessment, maintenance and testing will be addressed in the context of the W3C WAI Web Content Accessibility Guidelines (WCAG), Section 508, Telecommunications Act, and the ADA.

Prerequisite(s):

WEB 1600 or WEB 2703 or consent of program coordinator

Co-requisite(s):

None

Textbooks(s) and Other Course Materials:

1. Pro HTML5 Accessibility: Building an Inclusive Web
Author: Joshue O'Connor
Publisher: Apress ©2012
ISBN (pbk): 97814302410942
ISBN (electronic): 97814302419597
2. Accessibility Handbook: Making 508 Websites for Everyone
Author: Katie Cunningham
Publisher: O'Reilly Media ©2012
ISBN: 9781449322854

I. Week/Unit/Topic Basis:

<u>Week</u>	<u>Chapter</u>	<u>Topic</u>
1	1	Pro HTML5 Accessibility: Introduction to HTML5; Accessibility Handbook: Preface & Chapter06
2	2	Pro HTML5 - Chapter01: Introduction to HTML5 Accessibility;

		Accessibility Handbook: Chapter01
3	3	Pro HTML5 - Chapter02: Understanding Disability and Assistive Technology; Accessibility Handbook: Chapter02
4	4	Pro HTML5 - Chapter02: Understanding Disability and Assistive Technology cont.; Accessibility Handbook: Chapter04
5	5	Pro HTML5 - Chapter03: JavaScript Isn't a Dirty Word, and ARIA Isn't Just Beautiful Music; Accessibility Handbook: Chapter05
6	6	Pro HTML5- Chapter04: API and DOM; Adobe Acrobat Accessibility
7	7	Pro HTML5 - Chapter05: HTML5: The New Semantics and New Approaches to Document Markup
8	8	Midterm Exam/Project
9	9	Pro HTML5 - Chapter06: Images, Rich Media, Audio, and Video in HTML5; Accessibility Handbook: Chapter03
10	10	Pro HTML5 - Chapter06: Images, Rich Media, Audio, and Video in HTML5 cont.; Multimedia Project
11	11	Pro HTML5 - Chapter 7: HTML5 and Accessible Data Tables; lynda.com - Web Accessibility Principles - Tables
12	12	Pro HTML5 - Chapter 8: HTML5 and Accessible Forms; lynda.com - Web Accessibility Principles - Forms
13	13	Pro HTML5 - Chapter 9: HTML5, Usability, and User-Centered Design
14	14	Pro HTML5 - Chapter 10: Tools, Tips, and Tricks: Assessing Your Accessible HTML5 Project
15	--	Final Exam/Project

II. Course Goals*:

The course will:

- A. Explore accessibility issues and factors that influence accessible web design. (V)
- B. Apply the principles of Universal Design and implement strategies to promote universal access. (III, V)
- C. Teach students how Assistive Technologies assist disabled users in accessing the Web. (V)
- D. Study and apply W3C Recommendations in creating accessible Web content. (II, III, IV, V)
- E. Use Cascading Style Sheets to separate content from presentation. (I, II)
- F. Write usable, accessible and standards-compliant XHTML markup. (I, III, IV)
- G. Examine Web accessibility in the realm of business and e-commerce. (I, V)
- H. Create accessible multimedia and effective alternative content. (I, II, III, IV)
- I. Utilize assessment tools and techniques to verify Web content. (II, IV)
- J. Survey US and International Accessibility Law as it applies to Internet. (V)

*Roman numerals after course objectives reference goals of the Web Technology program.

III. Expected Student Learning Outcomes*:

Students will:

1. Create valid, well-formed, standards-compliant web pages. (D, F)
2. Understand the barriers to access of various disability groups including blind, deaf, vision and mobility-impaired, and learning disabled users. (A, B, C, D)
3. Understand assistive/accessible/adaptive technologies (AT) utilized by users with disabilities. (A, B, C, D)
4. Implement consistent, predictable, and accessible site navigation. (B, D, F)
5. Design accessible XHTML forms. (D, F, H)
6. Set accessibility features in Adobe Reader. (H)
7. Distinguish accessible and inaccessible web pages via markup. (B, G)
8. Design ADA and Section 508 compliant web sites. (A, B, D, K)
9. Understand User Agent and Authoring Tool Accessibility Guidelines. (A, B, D, K)
10. Distinguish between WCAG 1.0 and WCAG 2.0 (Working Draft) Recommendations. (D)
11. Design for various screen sizes, display devices and alternate-input devices. (A, D)
12. Understand basic captioning for several popular multimedia formats. (C, J, K)
13. Recognize SMIL and SAMI files. (I)
14. Interpret W3C Recommendations for Web technologies and apply them to Web content. (D)
15. Use and understand assistive technology terminology and acronyms. (C)
16. Be familiar with worldwide accessibility initiatives. (D, K)
17. Use appropriate alternative text to describe non-text content. (D, G)
18. Use CSS to separate content from presentation. (F)
19. Explain the technical and financial benefits of designing accessible websites. (H)
20. Learn how disabled users access web content using assistive technologies. (C, J, K)
21. Describe color considerations in Web Design. (B)
22. Ensure sufficient color contrast for users with color deficits. (B, J)
23. Use metadata and markup to facilitate searches and optimize page rank. (E, G, H)
24. Use semantic markup to achieve meaningful and identifiable web content. (K)
25. Understand usability testing methods. (B)
26. Adjust accessibility options in various User Agents and Authoring Tools. (B, G)
27. Understand accessible JavaScript techniques. (A, F)
28. Learn techniques to create and publish accessible PDF and Microsoft Office documents to the Web. (A, I)
29. Create a simple XML document, RSS feed, and podcasts using free applications. (I)
30. Extend the functionality of several browsers using extensions and add-ins to assist in analyzing web pages for accessibility. (J, K)
31. Use effective link text and headings to assist navigation. (A, B)
32. Evaluate web pages/sites for accessibility and prioritize repairs. (J)
33. Learn to retrofit inaccessible web pages. (A, B, D)
34. Implement accessible markup for XHTML content (tables, forms, objects, etc.). (D, F)
35. Use XHTML form elements and attributes to create accessible forms. (D, F)
36. Use XHTML table elements and attributes to create accessible data tables. (D, F)
37. Create web pages using relative font sizes and utilize appropriate fonts and font properties to attain maximum usability. (A, B, F, G)
38. Review case law as it applies to the Web. (G, K)
39. Learn the financial and consumer benefits to e-Commerce in constructing accessible web sites. (G, K)

40. Understand the benefits of Cascading Style Sheet (CSS) positioning over layout tables. (E)
41. Create and apply CSS rules and media-specific stylesheets. (E)
42. Understand how screen readers "read the Web." (C)
43. Understand AJAX accessibility issues. (A, D)
44. Create a style guide to effect usability. (E, F)
45. Understand the fundamentals of Web graphics. (A, B)
46. Use headings, lists, breadcrumbs, and "skip links" to improve usability and navigation. (A, B, F)
47. Ensure web pages linearize logically with coherent reading order. (A, B)
48. Learn how to use automated evaluation tools to check for validity and well-formedness. (J, K)
49. Plan the Information Architecture of a site to enhance usability. (A, B)
50. Understand the benefits and drawbacks of frames. (A, B, D)
51. Create accessible framed web pages. (A, B)
52. Understand techniques for producing accessible rich media. (J)
53. Explain the difference between captions, subtitles, and dubbing. (A, B, J)

*Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

IV. Evaluation:

A. Testing Procedures: --40% of grade

Students will be given weekly chapter quizzes and a cumulative exam at the end of the course.

B. Laboratory Expectations: --50% of grade

Students will be given weekly projects to complete in the course of reading and working through the textbook.

C. Field Work: --0% of grade

Not Applicable

D. Other Evaluation Methods: --10% of grade

Online Communication Tools: Students will use the D2L discussion board and email to communicate with the instructor and interact with one another.

E. Grading Scale:

A	90-100
B+	85-89
B	80-84
C+	75-79
C	70-74
D	60-69
F	0-59

V. Policies:

A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

C. Accommodations for Disabilities:

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. [Disability Services](#) (<http://www.pstcc.edu/sswd/>) may be contacted via [email](#) or by visiting Alexander 130.