WEB ACCESSIBILITY AND DESIGN

GEORGE MASON UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT
INFORMATIONAL TECHNOLOGY AND SPECIAL EDUCATION

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Web Accessibility and Design
Summer B 2011
On-line

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COURSE DESCRIPTION:
   A. **Prerequisites: None**
   B. **Provides instruction for accessible web design using HTML and existing authoring tools. Section 508 web accessibility standards and assistive technologies to access the computer will be explored. Develops understanding of principles of universal web design. Students apply this understanding by designing and developing accessible web site using web authoring tools.**

NATURE OF COURSE DELIVERY:
The course is structured using readings and videos; reflections on those readings and videos; class discussions, demonstrations and the practical application of web accessibility design; and testing and reporting. The course is designed to create an understanding of web accessibility during the design of a website.

LEARNER OUTCOMES:
This course is designed to enable students to:
   1. **Know and test for accessibility issues on websites**
   2. **Design a simple webpage to meet web accessibility standards**
   3. **Understand the concept of Universal Design**
   4. **Know the basics of document accessibility**
   5. **Create and accessible MS Word, MS PPT or PDF Document**

REQUIRED TEXTS:

InterACT with Web Standards: A holistic approach to web design. New Riders, Voices that Matter. 2010
Erin Anderson, Virginia DeBolt, Derek Featherstone, Lars Gunther, Denise R. Jacobs, Leslie Jensen-
Inman, Chris Mills, Christopher Schmitt, Glenda Sims, Aarron Walter:
http://interactwithwebstandards.com/ Ave Cost $35.00

REQUIRED SOFTWARE:

**NOTE: You do not necessarily need to buy any of the software listed below, but you will need access
to it.** All of the required software will be available in the classroom computer labs and virtual. Current
Fairfax Campus Computer Labs with Dreamweaver are: Robinson A350, **STAR Lab**, and the **CLUB**. You
can also access the software virtually, for more information please visit **Mason's Virtual Computer Lab
website**.

- REQUIRED: A plain text editor. Recommended for Windows **NotePad ++** (free),
  TextPad (free), **PSPad** (free). Recommended for Mac **Smultron** (free), **Text Wrangler**
  (free).
- Dreamweaver (version CS4 or CS5) since the instructor will use Dreamweaver to
  demonstrate the techniques. Dreamweaver is available in the computer labs in Robinson
  A350, **STAR Lab**, **CLUB** and the **Virtual Computer Lab**. Students may also purchase
  their own copy at the discounted educational rate through the campus bookstore or any
  other retailer such as: **AcademicSuperstore**, **JourneyEd**, **CampusTech** or **Gradware** to
  name a few. A free 30-day trial version is available for download from the **Adobe
  website**.

**COURSE REQUIREMENTS, PERFORMANCE-BASED ASSESSMENT, AND
EVALUATION CRITERIA:**
  A. **Requirements**
  B. **Performance-based assessments**
  C. **Criteria for evaluation**
  D. **Grading scale A =   A - =   B+ =   B =   B- =   C =   F =**

COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT

Student Expectations

- Students must adhere to the guidelines of the George Mason University Honor Code [See
  http://academicintegrity.gmu.edu/honorcode/].

- Students with disabilities who seek accommodations in a course must be registered with
  the George Mason University Office of Disability Services (ODS) and inform their
  instructor, in writing, at the beginning of the semester [See **http://ods.gmu.edu/**].

- Students must follow the university policy for Responsible Use of Computing [See
  http://universitypolicy.gmu.edu/1301gen.html].

- Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.

- Students must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.

- Students are expected to exhibit professional behaviors and dispositions at all times.

Campus Resources

- The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See **http://caps.gmu.edu/**].

- The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See **http://writingcenter.gmu.edu/**].

PROPOSED CLASS SCHEDULE

Date	Topic/Learning Experiences	Readings and Assignments
Week of June 6	1. **Get acquainted with new 9.1 Blackboard course structure.** 2. **Review Syllabus** 3. **Introduction: Overview of Web Accessibility and What the Law Says about Web Accessibility, Section 508.** 4. **The User's Perspective: How do people with disabilities access the web? Overview of technologies used by individuals with disabilities and how they can help with testing. Identifying barriers associated with these**	**Blackboard: If you need help with Blackboard please visit the HELP tab on MyMason Portal or visit this link:** www.gvsu.edu/cms3/assets/428A2C9A-0FB7-5B0C-BBFCF723C12E59E3/blackboard91/stu_guidetoblackboard.pdf **Weekly Discussion Questions (10 points)** **Required: Read Chapter 22: Accessibility Intro pages 405-412** **Required: It is important to understand the differences between WCAG and Section 508. We'll be focusing on Section 508, which was originally taken from parts of the WCAG. This site breaks this down:** http://www.jimthatcher.com/sidebyside.htm **Recommended: Introduction to Web Accessibility:** http://www.w3.org/WAI/intro/accessibility.php **Required: The Law and Web Accessibility: Section 508: Read the following two documents:**

	disabilities.	**Web Accessibility and the Law:** http://www.practicalecommerce.com/articles/1167-Web-Accessibility-and-the-Law AND **Policies Related to Web Accessibility in the United States:** http://www.w3.org/WAI/Policy/#US **Required: User Perspective:** **Choose one of these three videos to watch.** **World Wide Access: Accessible Web Design:** http://www.washington.edu/doit/Video/index.php?vid=35 OR **Keeping Web Accessibility in Mind:** http://webaim.org/intro/video OR **Accessibility: Screen Readers and the Web:** http://www.doit.wisc.edu/accessibility/video/screen_readers.asp
Week of June 13	1. **Building Accessible Websites (Section 508: 1194.22 Web-based Intranet and Internet Information and Applications)** 2. **Learning basic HTML by using a text editor to incorporate the accessible features into a website.**	**Often websites are tested with both 1194.21 (Software Applications and Operating Systems) and .22 due to the advancement of technology and design of websites.** **Required: Read Chapter 23 pages 413-425. There are various "Try it Yourself" options that will help you have a better understanding of how someone with a disability may have difficulty accessing the computer and inaccessible websites.** **Required: Review one of the following documents to better understand these standards and how they will help you build a more accessible website:** http://webaccessibility.gmu.edu/docs/access-board-gov_sec508_guide_1194-22-.pdf OR http://webaccessibility.gmu.edu/docs/Appendix%20C%20-%20Section%20508%20tips%20for%20Web.pdf AND **A Voluntary Product Accessibility Template is something that is requested when electronic and information technology is**

			being purchased or created. Not all sections would need to be completed; it is dependent upon what is being procured. For this purpose though please review the first two standards .21 and .22 and see why they are both being used to test today's websites and applications.
			http://webaccessibility.gmu.edu/docs/Appendix%20E%20-%20static%20vpat%20version.pdf
			Required Readings: Chapter 10 HTML Intro: Read pages 154-170 and watch: http://www.youtube.com/watch?v=r52v5oaptPo&cc=1
			Assignment 1 (20 points): Try it Yourself, page 158. Use the "Try it Yourself" to 1) create a visual layout for each of the 2 pages of your sites (1 hompage and 1 content pages) all done in HTML
			Identify the following components on each page
			-page title -navigation -content (where will content be located, where will images be) -contact info
			submit you page by Friday June 17.
			Recommended Videos for help using a Text Editor:
			Introduction to HTML Computer Code : Using an HTML Editor http://www.youtube.com/watch?v=EWt1PGz5sXA&cc=1
			How to Use NotePad++ - http://www.youtube.com/watch?v=f-lEgoOtlmk
			HTML Tutorial 1- Designing a Website in Notepad – Basics and Beginnings - http://www.youtube.com/watch?v=GOfhmzNLWzY
			Review these resources if you need help building accessibility into your HTML: http://webaccessibility.gmu.edu/resources.html#section7
			Recommended Readings: Writing for the Web: Read chapter 5 pages 61-76 and 82 (Top 10 web writing tips) -90. **Information Architecture Intro**: Read chapter 6 pages 95-106
Week of	1. **Learning basic CSS to**		**Read Chapter 11: CSS Intro. Remember sometimes adding**

| June 20 | **incorporate the accessible features into a website.**
2. **Learning/Using Dreamweaver to create an accessible website using a template.** | **more code causes more work in terms of accessibility. You need to have an overview idea of the goal in which you are trying to meet when developing websites to know what tools will work best for you to design effectively and efficiently.**

Practice with the Try it Yourself items on page 178 and 180.

Required: Complete Try it Yourself on page 188 and submit by June 24

Required Reading: Building Accessibility into CSS: http://dev.opera.com/articles/view/building-accessible-static-navigation-wi/

Recommended for more help watch:

-CSS Website Design Tutorial #1 Introduction to CSS: http://www.youtube.com/watch?v=9SzJt-kg_ak
-CSS Website Design Tutorial #2 Formatting and Layout Introduction: http://www.youtube.com/watch?v=y59xha5Z8mU
-CSS Website Design Tutorial #3 Professional Website Layout: http://www.youtube.com/watch?v=X8F54z_AHTA

Required: Watch Create a Website in Dreamweaver CS4 (Template Tutorial): http://www.youtube.com/watch?v=suMK2pcyqoc

OR

Template based pages Creating a First Web Site with Dreamweaver: http://www.youtube.com/watch?v=Z2fvx0j1n_k

Recommended: For help on how to incorporate accessibility into CSS please review: http://webaccessibility.gmu.edu/resources.html#section6 |
| Week of June 27 | 1. **Learning/Using Dreamweaver to create an accessible website using HTML.**
2. **How to evaluate or test websites for Section 508 Compliance.** | **Now that you've worked with HTML and CSS within coding and used Dreamweaver Templates- you're ready to create your own website using dreamweaver.**

Required: Visit the link for setup and review the zip file if needed: http://www.adobe.com/devnet/dreamweaver/articles/first_website_pt1.html

Required Video: |

Adobe Dreamweaver Introduction Tutorial-How to Make a Website in HTML:
http://www.youtube.com/watch?v=fwAIoDgH4mw

Recommended tutorial videos for additional help:

Introduction to Dreamweaver CS5 Part 1:
http://www.youtube.com/watch?v=XMZARc_GdLE
Introduction to Dreamweaver CS5 Part 2:
http://www.youtube.com/watch?v=GqyXDOQiFLA
Introduction to Dreamweaver CS5 Part 3:
http://www.youtube.com/watch?v=_hYTcFA-I50
Introduction to Dreamweaver CS5 Part 4:
http://www.youtube.com/watch?v=bKVd9bHusRA
Introduction to Dreamweaver CS5 Part 5:
http://www.youtube.com/watch?v=5yU9-87eRww
Introduction to Dreamweaver CS5 Part 6:
http://www.youtube.com/watch?v=PHVcTCwVxck
Introduction to Dreamweaver CS5 Part 7:
http://www.youtube.com/watch?v=T6sTGQGdI7I
Dreamweaver CS5 Tutorial Designing Your Web Page:
http://www.youtube.com/watch?v=HlDi9ThuSsQ

How to Test Websites for Compliance:

There are two ways to test websites 1)Manual using assistive technology and 2)Automated using a testing tool software. We'll review both ways to ensure you can test your website to ensure compliance.

First testing websites Manually. Most testers use a screen reading software, in this case we'll discuss using JAWS from Freedom Scientific. This allows you to hear how the website will be ready, shown in week one examples. There are some quick and easy keystrokes while running JAWS that will allow you to test various areas of your site. If you want to learn more about how to use JAWS for manual testing, please ask me questions and/or visit this site for keystroke quick references:
http://www.wats.ca/show.php?contentid=48

Second is Automated Testing. Review Free to Low Cost Validators for some of the most commonly used applications used for automated testing:
http://webaccessibility.gmu.edu/validators.html

Most developers prefer the look and feel of the Deque

		Worldspace because it gives the exact code and line that the problem can be found in.

For those just starting out, learning accessibility its found that most people like either the WAVE or FAE application. WAVE has a red, yellow green feature similar to a stop light. FAE gives best example documents to follow. However, Deque is one of the few that allows you to test only Section 508 Compliance, WAVE and FAE both follow WCAG. It is important to know what you're testing for in order to know what changes will need to be made.

Assignment 2 (20 points) Web Site Validation due Friday, July 1. Using one of the website validation tools mentioned above, evaluate the accessibility of a Mason website that is inaccessible. Prepare a 1-2 page summary of the issues found on the site with suggestions on how to correct them. Include the validation report provided by the tool you choose to use. |
| Week of July 4 | 1. Learning how to create an accessible document to add to your website. (Choose one: PDF, PPT or Word)
2. Understanding Accessible Multimedia. | There are often 3rd party software available to help make your documents accessible. For example there is Illinois Accessible Wizard for Microsoft Office (Word, PPT and Excel) and PAW for Microsoft Word or Commonlook for PDF.

Required Readings:

Below are documents to help create accessible documents from scratch rather than using software:

Word: http://www.hhs.gov/web/policies/pdfaccessibility/step2.html

PPT: http://webaim.org/techniques/powerpoint/

PDF: http://webaim.org/techniques/acrobat/ If you want to create accessible forms, LiveCycle Designer (part of Adobe Professional install) is the best and easiest application to use. If anyone is interested in learning more about this please let me know.

Accessible Multimedia: Required Read: http://webaccess.msu.edu/tutorials/accessible-videos.html

For anyone interested in learning more after our class: http://www.adainfo.org/content/Webinar-How-to-Create-Accessible-Video |
| Week of July 11 | Work on Final Project | Take Exam (10 points) |

		Final Project: Accessible Website Development (40 points) **Develop an accessible website. This site can be on a topic of your choice and should include at least 4 pages centered on an identified theme. It must include the following elements:** • **Skip Navagation** • **At least one image** • **Ast least one complex image (one that would require a D-link, such as a table, graph, etc.)** • **A captioned video or audio file (it can be pulled from YouTube, etc.)** • **Accessible Word, PowerPoint or PDF File (extra credit)** **Explain the goal of your site and justify the design features:** • **What fonts and colors did you use and why? (Did you check your page for color blindness?)** • **How would you design your form? (form is optional)**
Week of July 18	**Final Project Due**	**Final Project Due**

ASSESSMENT RUBRIC(S)

COURSE

Assignment rubric

Name: _____

Date: _____

	No Evidence 1	**Beginning** (Limited evidence) 2	**Developing** (Clear evidence) 3	**Accomplished** (Clear, convincing, substantial evidence) 4	**SCORE**
CRITERIA (30 points)					
Layout and Navigation • **Site including a skip navigation link where appropriate** • **Is site clear and simple to navigate?**					
Design • **Each page indicates Page Title, and Contact Information (Date last Updated is helpful)** • **Site includes at least one accessible complex**					

table to display data? • **Site includes meaningful links and alt tags?** • **Site includes one image that requires a long description?** • **Site includes one captioned audio or video file?** • **Site provides good color contrast?** • **Site includes proper coding for an accessible form (optional)**					
Error Free • **No broken images** • **No broken links**					
Presentation • **Did the student present the rationale, accessibility features and design features of the project in a clear and organized way?** • **Did the student present the final website?**					

Comments: