CSCI E-12 - Fundamentals of Website Development

Syllabus

Harvard Extension School
Fall 2018

Instructors

- Course Head: David Heitmeyer
- Teaching Assistants:
  - To be determined

Course Site and Class Meetings

The course site is:
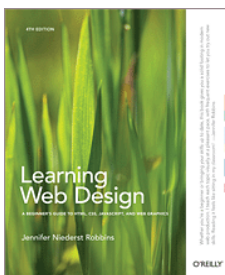
https://cscie12.dce.harvard.edu/

This is a fully-online class. Weekly modules will be released each Tuesday at noon (Eastern time) during the term. These modules will present the topics for that week in a series of videos, screencasts, and slides. There will be short exercises within the modules to reinforce learning and give you a chance to practice what you've just learned. In a typical week, you can expect to have 90 to 120 minutes of video content to view.

Sections. Optional online sections will be held throughout the week that are designed to help you with the mechanics of doing the work in the course as well as address more conceptual questions. Sections will be held "live" via the Zoom conferencing platform, and they will also be recorded and available for on-demand viewing during the course. The Section Schedule page will contain links to the section schedules and recorded sections.

Additional Expenses: Texts & Technology

Summary: $60 for a textbook (list price for paperback, can be found for less) + $60 for 1 year of web hosting at Dreamhost (is optional, but strongly encouraged).

Textbook

The required book, which is a great single resource that covers a variety of relevant topics, is:

Jennifer Robbins, 2018. *Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics, 5th ed*. O'Reilly Media. 500 p. ISBN 978-1491960202
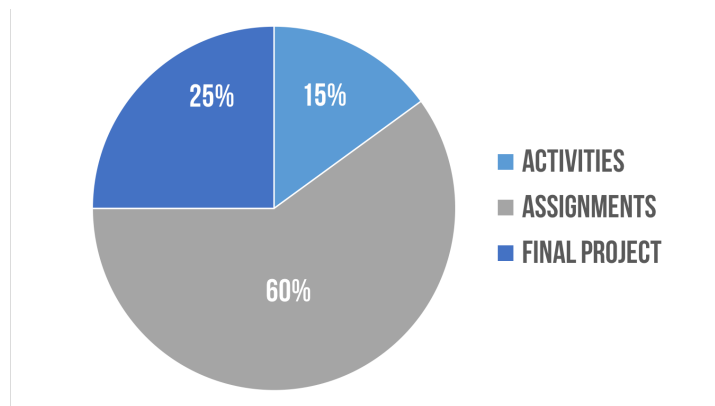
In addition, there will be a variety of online resources referenced that are either free or available without additional cost (requires Harvard Key login, which is available to registered students).

Technology – Hosting

As part of enrolling in the course, you will have access to the course web hosting server, which is a basic environment in which you can publish pages and sites. I strongly encourage students to also purchase a commercial web hosting service -- it will be useful for your project, but also for your web work beyond this course. The hosting provider Dreamhost offers an educational discount promotion (as of July 2018, it is $4.95 per month and you need to sign up for a year -- so for around $60, you will have a year's access to a hosting service, which also includes 1 free domain name). This is strongly encouraged, but not strictly required.

Activities, Assignments, Final Project

There are 3 types of exercises you will encounter in this course:

- **Activities**. These are smaller **in-module exercises** designed to give you a chance to work on what you've just learned or to answer some basic questions on what you've just learned. They are designed to be "low-stakes" (often you can repeat them until you get it right), but are important for the learning process. These in-module exercises will be 15% of your final grade.

  The activities must be completed by 11:59pm US eastern time the following Tuesday.

- **Assignments.** These are more significant exercises given **each week** that will be submitted and graded. The due date will be listed on each assignment. These weekly exercises will be 60% of your final grade.

  The assignments will be due by 11:59pm US eastern time the following Tuesday.

  Students enrolled for graduate credit: for some weeks, there will be additional aspects to the assignment for students enrolled for graduate credit.

- **Final Project.** The final project is to **plan, design, build, and publish a small-scale web site.** We will work on this throughout the term in stages. You will have 2 smaller assignments where you

ideate and plan your site, and a final assignment where you submit your final project. As part of the work towards the final project, there will be opportunities to get feedback from your teaching assistants. The project will be 25% of your grade.

Due Dates

You can expect weekly work (Assignments and Activities) to be due on: September 11, 18, 25; October 2, 9, 16, 23, 30; November 6,13, 20; December 4.

The final project is due on December 18.

Late Work

Late work will be graded as a 0 (zero) score unless "late days" or used.

Beginning with Week 2, you will have "5 late days" to use for the remainder of the semester. Each "late day" will let you submit that week's exercises and assignments by **24 hours**. You can use all 5 late days at once, or spread them out as needed. No student may use more than 5 late days, and leftover late days have no value at the end of the term. Late days cannot be used to extend the final project due date. If you submit your work late, it will be assume you want to use one of your late days -- no need to contact us. Also, if there are extraordinary circumstances, let me (david_heitmeyer@harvard.edu) know and we can handle extensions outside of the "5 late days" policy.

Getting Help

There are a variety of ways of getting help in the course, whether you are trying to troubleshoot a specific issue you are encountering to bigger picture questions about the web and web sites that you may want to discuss:

- **Question and Answer** discussion on course web site. This forum is monitored by teaching staff, and you can expect a response within a day, and often much faster.
- **Sections.** Sections are live online as well as recorded, with several sections offered each week (exact schedule and number of sections are dependent on course enrollment and will be announced the first week of class). These are a great place to get help with the logistics and mechanics of completing your assignments.
- **David's Office Hours.** David will generally have office hours once a week online, varying the days and times to try to accommodate different student time zones and schedules. Times will be set week-to-week and will be posted on the course site.
- **Canvas Inbox.** You can contact David or the teaching staff through the Canvas Inbox in the course site. You can expect a response within two days.
- **Email.** You can contact me by email at david_heitmeyer@harvard.edu. You can expect a response within two days.

Accessibility

The Extension School is committed to providing an accessible academic community. The Accessibility Office offers a variety of accommodations and services to students with documented disabilities. Please visit www.extension.harvard.edu/resources-policies/resources/disability-services-accessibility for more information.

Cheating and Plagiarism

You are responsible for understanding Harvard Extension School policies on academic integrity (www.extension.harvard.edu/resources-policies/student-conduct/academic-integrity) and how to use sources responsibly. Not knowing the rules, misunderstanding the rules, running out of time, submitting the wrong draft, or being overwhelmed with multiple demands are not acceptable excuses. There are no excuses for failure to uphold academic integrity. To support your learning about academic citation rules, please visit the Harvard Extension School Tips to Avoid Plagiarism (www.extension.harvard.edu/resources-policies/resources/tips-avoid-plagiarism), where you'll find links to the Harvard Guide to Using Sources and two free online 15-minute tutorials to test your knowledge of academic citation policy. The tutorials are anonymous open-learning tools.

Course Topics by Week

1. Getting Started — September 4
   - Course Overview
   - The Internet and World Wide Web
   - Introduction to Markup
   - Reading: *Learning Web Design*, Part I: Getting Started
2. Markup (HTML) — September 11
   - Essential HTML document structure
   - Essential HTML for content
   - Reading: *Learning Web Design*, Part II: HTML for Structure
3. Markup (HTML) and Style (CSS) — September 18
   - HTML forms
   - CSS mechanics and basic selectors
   - CSS text properties
   - Reading: *Learning Web Design*, Part II: HTML for Structure; Part III: CSS for Presentation
4. Style (CSS) — September 25
   - CSS block model
   - Colors and Images
   - CSS and lists
   - Multiple CSS stylesheets
   - The cascade and specificity of CSS
   - Reading: *Learning Web Design*, Part III: CSS for Presentation
5. Style (CSS) — October 2
   - Fonts

- o CSS and Layouts
- o CSS Flex and Grid
- o CSS frameworks
- o CSS preprocessors (Sass)
- o Reading:
    - *Learning Web Design*, Part III: CSS for Presentation
    - *The Little Book of HTML/CSS Frameworks* by Jens Oliver Meiert
    - Sass Basics
6. Images — October 9
   - o Image types (PNG, JPEG, GIF), features, properties and typical use
   - o Tools for image creation and manipulation
   - o Video and Audio
   - o Reading: *Learning Web Design*, Part V: Web Images
7. User Experience and Design — October 16
   - o Workflow for designing a site
   - o User Experience principles
   - o Design principles
   - o Reading:
      - Krug, Steve. Don't Make Me Think, Revisited : A Common Sense Approach to Web Usability. Third ed. 2014.
      - Williams, Robin. The Non-designer's Design Book : Design and Typographic Principles for the Visual Novice. Fourth ed. 2015.
8. JavaScript - Introduction — October 23
   - o JavaScript Events
   - o DOM
   - o jQuery
   - o Reading:
      - *Learning Web Design*, Part IV: JavaScript for Behavior
      - First three chapters of Learn jQuery: About jQuery, Using jQuery Core, and Events.
9. JavaScript - Integrating — October 30
   - o Focus on using and integrating JavaScript functionality
   - o Slideshows, form validation, navigation, social media widgets
10. JavaScript - Ajax and dynamic pages — November 6
   - o JSON
   - o Ajax
   - o JavaScript templates
   - o Introduction to JS frameworks
   - o Reading:
      - Learn jQuery, Ajax chapter
      - Handlebars documentation as needed
11. Server Side, Part 1 - HTTP and Apache Web Server — November 13
   - o HTTP Overview
   - o Caching
   - o Compressing

- o Custom Error Pages
- o Redirects
- o HTTPS / TLS
- o Cookies

12. Server-Side: Dynamic Content — November 20 and November 27
- o PHP Overview
- o PHP Web Applications
- o Example: Web Application Using Database and Templates

13. Server-Side: Web Content Management systems — December 4
- o PHP Overview
- o PHP Web Applications
- o Example: Web Application Using Database and Templates
- o Web Content Management Systems (Web CMS)

14. Special Topic (with input from the class) — December 11