
<h1>	COMP 161	Web Design	</h1>
	<i>M-W-F</i>	<i>Lecture/Lab (DC 1349) – 11:30-12:20</i>	

Who: Michael Gousie
Where: Discovery Center 1325
When: Mon 1:30-3:00; Wed/Thu 2:30-4:00
and by appointment
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Web: <http://cs.wheatoncollege.edu/mgousie/comp161.html>

Content:

You will learn how to create professional and content-rich web sites. To do this, you will learn how to use a basic integrated development environment (IDE), several software packages, and various software tools. We will work on your web skills in stages, starting from scratch using the markup language HTML5 and progressing to sophisticated CSS. At the end of the semester, we will look at some very basic programming using the JavaScript language. Much of the classroom time will be devoted to hands-on work. No previous programming or web design work is required or assumed.

The general topics covered will be:

- Background information on files, folders, and servers.
- Basic web page design principles.
- Number systems and color.
- Creating web pages and sites using an integrated development environment (IDE) and a browser.
- Uploading files to a live server.
- Learning how to write a web page using the HTML5 markup language.
- Learning how to style a web page using CSS.
- Building sophisticated web sites that include animations and other advanced CSS functionality.
- Creating pages that work with different device sizes (responsive design).
- Learning some basic JavaScript programming to allow for more user interaction.
- Putting it all together in a full-featured web sites.

WARNING! This is not a course that simply teaches how to “point and click” your way through application software! We will **not** be using web page builder software; rather, you will create pages from scratch. You will be writing your own code, using markup languages and a powerful programming language. A significant time commitment is required, much more so than many 100-level courses. Having said that, you will get much satisfaction from what you can accomplish!

Required Texts:

- Lynch, P. and Horton, S. *Web Style Guide*, 4th edition. Yale Press, 2016. Available online on the course web page. There is an older 3rd edition, which you may prefer. Although some of the examples are a bit dated, the design principles are still valid. The newer 4th edition concentrates more on enterprise process (that is, how to design a site in a large corporate structure) rather than focusing on page design, although those principles are still explained. Because the web page examples are more modern, the 4th edition is the one linked on the course page.
- Duckett, J. *HTML & CSS: Design and Build Websites*. Wiley, 2011. There is also an accompanying web site.

Recommended Texts:

- Beaird, J., George, J., and Walker, A. *The Principles of Beautiful Web Design*, 4th Edition. SitePoint, 2020. Lots of pretty pictures.
- Dean, J. *Web Programming with HTML5, CSS, and JavaScript*. Jones & Bartlett Learning, 2019. If you *really* want to get into it.
- There are many other books and, of course, even more resources on the web. I recommend the use of `w3schools.com` as an online resource.

Required Hardware:

- You must work on your projects on a good-quality laptop, running any operating system (Windows, Mac, or even Linux). Note that a tablet or Chromebook is not sufficient.
- You must have a good Internet connection, as you will be downloading course content and uploading web pages to a Wheaton server. If you are working off campus, you will also need to use the VPN.

Software:

The required software is freely available online. The software we will use is as follows, although other options are available:

- Phoenix Code - a free Integrated Development Environment (IDE) for creating web pages. This can be installed on your computer or you can just use the web version (slower).
- FileZilla - free File Transfer Protocol (FTP) client software.
- Firefox browser (preferred).
- Forticlient Virtual Private Network (VPN) software - available from Wheaton.
- GIMP (GNU Image Manipulation Program) - a robust paint program that works on any platform. Optional.

Requirements:

There will be three exams during the course of the semester and a final exam, together worth 40% of the grade; see chart below for more information. There will be two homework assignments worth 8% of the grade. Four web page/site projects, each highlighting a specific problem, such as basic HTML, good design using CSS, animation, etc., account for 52% of the grade. One or more of the later projects *may* be built by teams of two. These projects **must** run correctly on the department server, not just on your own laptop. Having your pages correctly viewable on a server is a major goal of the course.

Exam Schedule:

Exam	Weight	Topic	Date (Subject to change)
Exam 1	9%	Number systems, basic design	September 28
Exam 2	9%	HTML5, more design	October 30
Exam 3	12%	HTML5 & CSS	November 30
Final Exam	10%	Responsive design, JavaScript	December 18 @ 2:00 PM

Projects/Homework:

Item	Weight	Topic	Approx. Due Date
HW 1	4%	Files, number systems	Week 3
HW 2	4%	HTML warm-up	Week 4
Proj 1	8%	Basic web pages	Week 7
Proj 2	16%	Complete web site	Week 10
Proj 3	16%	Site with responsive design and animation	Week 13
Proj 4	12%	E-commerce web site	Week 15

Grading:

Grades will be assigned according to the following scale:

A = 93-100, A- = 90-92, B+ = 87-89, B = 83-86, B- = 80-82, C+ = 77-79, etc.

Course Policies:

- You are responsible for all material covered in class, including the reading (shown on course schedule).
- If you must miss a exam for any reason, you must inform me **BEFORE** the test. Except in the case of emergency, illness, or you fell into Wheaton's original indoor pool¹, makeup exams will not be given.
- Written homework due dates are **firm**. Homework must be handed in at the start of class on the due date. There are **no** late days for homework.
- All project/web page due dates are **firm**. The final code for the projects must be posted and/or turned in electronically by 11:59:59 PM on the due date. Any project turned in on the following day will receive a 15% penalty. Anything turned in later than one day will receive a 0. Any required hard copy and/or written portions must be submitted at the beginning of class on the next day or as instructed on the specification sheet.

¹It's still there; do you know where it is?

- A computer crash is not an excuse for late work. It is important that you **back up all of your work!** Use a flash drive to create backups.
- Web pages will be evaluated using the Firefox web browser. Be sure to test your pages with Firefox before completing your project.
- You are expected to adhere to the Wheaton Honor Code.
(See <https://wheatoncollege.edu/about-wheaton-college/honor-code/>)
 - Although *discussion* of projects or homework is encouraged, the final, turned-in version should be the result of your own work.
 - AI can help you clear up confusion regarding a problem. It can also be used to help you generate some specific HTML/CSS to fix a small layout problem. It should **not** be used to generate an entire web page/site, unless you do not want to learn anything. Hence, some of this is up to you. In any case, you will not have access to a computer/phone for at least some portions of exams, so AI will not be able to help you.
 - Collaboration on exams is prohibited.
 - You will be required to write and **sign** the pledge on all work turned in: *I have abided by the Wheaton Honor Code in this work.* Instructions for electronic submissions will be given on the project specification sheets.
 - Any violation of the above guidelines will result in a 0 for that assignment and/or a failing grade for the course.
- During class time, computers in the classroom are to be used **only for the current exercise/problem**, not for surfing the interwebs or checking by how many runs the Red Sox lost their last game.
- The use of cell phones, iPods, iPads, iPlops, iFlops, and other personal electronic devices is prohibited during class, labs, and exams. I encourage you to turn off/mute your device and put it away during class and whenever you are programming. The distraction of these devices is just harming your own learning experience.²
- Please do not disrupt class by leaving/returning, unless there is an emergency. **A text message does not constitute an emergency.**
- Accommodations for disabilities:

Wheaton College is committed to providing equitable access and supportive services for all students to fully access and thrive in the academic, residential and social aspects of student life. Affirmatively, Wheaton provides appropriate accommodations for eligible students with documented disabilities to afford equal access to educational programs and services. Individuals with disabilities and other access concerns requiring accommodations or information on accessibility should reach out to Accessibility Services at the Filene Center:

~ accessibility@wheatoncollege.edu or (508) 286-8215 ~

²It is actually possible for you to take a break from your phone for the duration of the class.

Course Schedule (subject to change):

Week #	Date	Topic(s)	Reading (see notes below)
Week 1		Introduction	L&H Chs. 1 & 3; notes
	Sep 2 Sep 4	Introduction Basic file systems	
Week 2		Number systems	Duckett Ch. 11
	Sep 7 Sep 9 Sep 11	<i>No class - Labor Day</i> Terminology, binary numbers Hex numbers and color	
Week 3		Intro to web pages	L&H Chs. 5 & 6; Duckett Chs. 1, 2 & 18
	Sep 14 Sep 16 Sep 18	Basic design IDE and basic HTML5 Text and links	
Week 4		Basic web pages	L&H Chs. 7 & 8; Duckett Chs. 3-5
	Sep 21 Sep 23 Sep 25	Uploading data to server, validation Hyperlinks Adding images	
Week 5		More HTML5	Duckett Chs. 6 & 8
	Sep 28 Sep 30 Oct 2	Exam 1 Tables Additional markup	
Week 6		Advanced images and design	L&H Chs. 9 & 11; Duckett Ch. 9
	Oct 5 Oct 7 Oct 9	Image formats, video Design principles and practice I Design principles and practice II	
Week 7		CSS	L&H Ch. 10; Duckett Chs. 10-12
	Oct 12 Oct 14 Oct 15 Oct 16	<i>No class - October Break</i> Intro to CSS <i>MAP day</i> Text and fonts	
Week 8		Alignment	Duckett Ch. 13
	Oct 19 Oct 21 Oct 23	Text and alignment Containers (boxes) I Containers (boxes) II	
Week 9		Using CSS	Duckett Ch. 13
	Oct 26 Oct 28 Oct 30	More alignment Still more alignment Exam 2	

Week 10		Advanced CSS	Duckett Chs. 7, 14-16
	Nov 2 Nov 4 Nov 6	Lists and tables Layout Aligning images	
Week 11		Animation	Course web page/notes
	Nov 9 Nov 11 Nov 13	CSS animation I CSS animation II Additional techniques	
Week 12		Responsive design	Course web page/notes
	Nov 16 Nov 18 Nov 20	Viewports Designing for mobile devices Media queries and srcset	
Week 13		More responsive design	
	Nov 23 Nov 25 Nov 27	Exam 3 <i>No class - Thanksgiving Break</i> <i>No class - Thanksgiving Break</i>	
Week 14		Web programming	Course web page/notes
	Nov 30 Dec 2 Dec 4	Basic JavaScript Forms and JavaScript Making it all work	
Week 15		JavaScript	Course web page/notes
	Dec 7 Dec 9 Dec 11	Doing math in JavaScript JavaScript and the DOM Clean up/review	
Week 16		Finals Week	
		Final exam Friday, 12/18 2:00 PM	Whew!

Notes:

- L&H refers to the **4th edition** of the Lynch and Horton textbook.
- The reading includes items on the web, as mentioned in class.
- There will be exam questions based on the reading that we will **not** formally cover in class.