

CMSC 210
Web Page Design and Scripting (3 credits)
Spring 2021

<http://marmorstein.org/~robert/Spring2021/cs210.html>

Lecture/Lab: 2:15pm – 3:05pm MWF (Stevens 118)

Instructor: Robert Marmorstein (marmorsteinrm@longwood.edu)

Office Hours: 3:15pm – 4:30pm MTWF (**held online**)

Phone: (434)395-2185

Office: Rotunda 329

My schedule is posted near my office door. To make an appointment, please check the schedule to see which times I am free, then contact me by e-mail and list some possible times we could meet. In general, I need at least 24 hours of notice to schedule an appointment.

Communications Policy

The best ways to get in touch with me are by Slack or by e-mail to marmorsteinrm@longwood.edu. Typically, I will reply within 24 hours (often sooner) on weekdays. I often reply much quicker – even on weekends.

If you are asking for help with a project or homework problem by e-mail, you should attach your code or your work to the e-mail or copy/paste the part you are working on into the body of the e-mail. **Do NOT attach screenshots or pictures taken on your phone.** They are hard to read and take up too much space in my inbox. In general, e-mails containing images will be deleted unread.

An even better way to get in touch with me is to use **Slack**. Slack is a chat utility with clients for mobile devices and desktop computers. It will allow you to easily send me code snippets. Also, since I get notifications when a slack message comes in, I am more likely to reply to your message quickly if you use Slack than if you send me e-mail.

Slack is also a good way to communicate with other members of the class. Feel free to ask for help on the course Slack channel – as long as you stick to general questions about topics and do not share large blocks of code.

Course description: The class will study interactive web pages that provide customized data in response to visitor requests and/or collect data from site visitors. This interaction will be done via program scripts written in an appropriate language.

Prerequisite: CMSC 140 or CMSC 160.

Required Textbook: No textbook is required for this course. However, I will be assigning reading from various web resources and tutorials. It is important that you read these articles for comprehension (*Note: This DOES mean taking notes as you read them!*)

Course student learning outcomes:

By the end of the course, the successful student will be able to:

- Write a program that runs
- Make calls to built-in libraries
- Create functions, classes, or other appropriate kind of module
- Access and process stored data (from a file or and/or from a database)
- Use a library, technology, or other program code that was not directly taught in this course

Section student learning outcomes:

By the end of the semester, the successful student will be able to:

- Create web pages using HTML markup and CSS styling
- Use Javascript and JQuery to animate page elements and perform AJAX requests
- Access REST services using API calls at the command line and using scripts
- Store information in a database or file using Python microservices

Course Structure and Student Expectations

This course is heavily project-driven. In general, I will use the first day or two of each week to lecture on a new topic. You will then have Friday to work on laboratory projects. Laboratory and lecture sessions will take about three hours each week. However, you should expect to spend at least nine to twelve additional hours each week reading the materials, working on homework and the laboratory projects, and preparing for exams.

Course Work: Your grade will be determined by your performance on the final exam (10%), participation (5%), homework and quizzes(10%) and programming projects (75%).

Grading Policy:

Late work will not be accepted unless you have a serious medical or family emergency which prevents you from completing the assignment on time. In such cases, you do not need a doctor's note, but you must send me e-mail within twelve hours of the assignment due date to explain your circumstances and to make arrangements for the work to be completed.

Grading Scale:	100-91: A	90: A-
89: B+	88-81: B	80: B-
79: C+	78-71: C	70: C-
69: D+	68-64: D	
63 or lower: F	(There is no grade of D- in this course)	

Attendance:

I expect you to attend class unless you are sick or engaged in an approved extracurricular activity. Please do NOT come to class if you are sick. Instead, contact me within 12 hours of the absence to check whether you've missed any work and then make arrangements to get notes from another student in the class. You should also check the course web site for announcements, new assignments, and other important updates.

I will rely primarily on your honor for enforcement of the attendance policy. However, I will keep a record of your attendance as required by Longwood policy. In accordance with that policy, I may (at my discretion) penalize you for missing more than 10% of scheduled class time (about 5 class sessions) to unexcused absences. If you miss 25% or more of scheduled class meetings (about 14 sessions), you will automatically fail this course.

Collaboration:

Exams and quizzes are to be completed entirely on your own. You may discuss the homework and lab projects with other students subject to these restrictions:

1. Only turn in work which YOU have typed or written.

The work you submit should, in general, be either your own original work or modifications of material which I have provided. You MAY assist other students or get assistance with simple problems like syntax errors, but you may NOT copy large blocks of code from each other. A good guideline of what "large" means is that changes that involve one or two lines of code are usually okay, but copying more than three complete statements is usually too much.

2. You may NOT copy code electronically from other students or the Internet.

This doesn't mean you can't look online for help with a project. It just means that you shouldn't copy/paste or download code and turn it in as your own. You must re-type any code you find. You should also not be using large blocks of code from the Internet (again, the three line limit is a good rule of thumb).

*You may not share code with other students using flash drives, cell phones, e-mail, web sites, floppy disks, CDs, or **any other** electronic storage or communication device. You may not print out copies of your code to share with other students (personal copies are fine).*

3. You must give proper attribution.

Whenever you receive help or use an online resource, you should comment your code to give proper credit. A simple comment like “/ based on <http://codewarrior.com> */” is fine. This comment should go directly above or directly after the place that you used the resource or received help to make it clear which parts of your program are not entirely original.*

4. You are responsible for securing your code.

Helping other students to cheat is also cheating. Furthermore, it is your responsibility to make sure that other students do not use your work to cheat. Be careful with who you allow to access your computer or account. Report any missing files, flash drives, or other devices that contain your work to me promptly.

Infractions of these policies will be dealt with harshly under the Longwood Honor Code. Any student convicted of an honor offense involving this class will automatically receive a final course grade of **F** in addition to any penalties imposed by the Honor Board. You should consider all work in this class to be pledged work, whether or not the pledge appears on the assignment.

Food and Drink:

You may bring non-alcoholic beverages, including soft drinks, to class. However, please do not eat in class (it distracts me and the other students). Violations of this policy will be considered an unexcused absence. I occasionally grant exceptions to this rule for students who must otherwise forgo lunch or have medical needs that require them to eat in class. If you feel that you need such an exception, you must make arrangements with me in advance (that is, before bringing food to class).

Cell Phones and Laptops:

Cell phones, music players, and laptops are to be turned off and put away during class, except as needed for the lab sessions. Violations of this policy will be considered an unexcused absence.

Tentative Course Schedule:

Week 1: Jan. 13 – 15 Introduction, the Model-View-Controller paradigm, Introduction to Linux and vim
Networking Basics: Clients and Servers, HTTP Methods and Status Codes

Read RFC 3986 (<https://tools.ietf.org/html/rfc3986>)

Lab 0: Introduction to Unix

Friday, Jan. 15

Platoon A in person

MLK Holiday (No Class): Jan. 18th

Week 2: Jan. 20 – 22

Advanced HTTP: Headers, URLs, Domains, Paths, and Query Strings
The Domain Name System, Registering and Configuring a Domain
Read RFC 1945 (<https://tools.ietf.org/html/rfc1945>)

Introduction to HTML 5: HTML documents, Text, Links, and Paragraphs
Parts of a web site: Headers, Footers, Navigation Bars, Hero Images,
Read “Parts of a Website: A cheat sheet for non-techies”
(<https://www.markbrinker.com/parts-of-a-website>)

Lab 1: Introduction to HTTP and APIs

Friday, Jan. 22

Platoon B in person

Last Day to Add/Drop classes: Jan. 21st

Week 3: Jan. 25 – 29

Advanced HTML: Structure Elements, Images, and SVG
Read “In Depth SVG Tutorial” (<https://flaviocopes.com/svg/>)

Introduction to Cascading Style Sheets
Read CSS Tutorial (<https://www.csstutorial.net>)

Friday, Jan. 29

Platoon A in person

Week 4: Feb. 1 – 5

Advanced Cascading Style Sheets and CSS Layout
Read Flexbox Tutorial
(<https://internetingishard.com/html-and-css/flexbox/>)

Lab 2: Introduction to HTML and CSS

Friday, Feb. 5

Platoon B in person

Week 5: Feb. 8 – 12

Introduction to Javascript
Read Modern Javascript Tutorial Part 1, Chapters 1 – 3
(<https://javascript.info/>)

Friday, Feb. 12

Platoon A in person

Week 6: Feb. 15 – 19

Object-Oriented Programming in Javascript
Read Modern Javascript Tutorial Part 1, Chapters 4 – 8
(<https://javascript.info/>)

Friday, Feb. 19

Platoon B in person

Feb. 19

Pass/Fail Decision Deadline (5pm)

Week 7: Feb. 22 – 26

Using JQuery

Read JQuery Fundamentals Tutorial

(<http://jqfundamentals.com/chapter/jquery-basics>)

(Read “Basics” through “AJAX and Deferreds”)

Lab 3: Using Javascript and JQuery

Friday, Feb. 26

Platoon A in person

No Class (Spring Break?): Mar. 1

Week 8: Mar. 3 – 5

Introduction to Python
Read Python Tutorial (Chapters 1 – 5)
(<https://docs.python.org/3/tutorial/>)

Friday, Mar. 5

Platoon B in person

Week 9: Mar. 8 – 12

Python Data Structures and File I/O
Read Python Tutorial (Chapters 6 – 8)
(<https://docs.python.org/3/tutorial/>)

Lab 4: Python CGI Scripts

Friday, Mar. 12

Platoon A in person

Week 10: Mar. 15 – 19

Using and Creating APIs
Read FreeSound API Documentation
(<https://freesound.org/docs/api/index.html>)

Lab 5: Using an API in Python and Javascript

Friday, Mar. 19

Platoon B in person

Week 11: Mar. 22 – 26

Flask and Jinja
Read Flask Tutorial
(<http://flask.pocoo.org/docs/1.0/tutorial/>)

Friday, Mar. 26

Platoon A in person

Mar. 26

Deadline to withdraw without an F

Week 12: Mar. 29 – 31

Cookies, Requests, and AJAX

Lab 6: Server Side Programming Using Flask and Jinja

Apr. 1 – 2

No Class (Spring Break?)

Week 13: Apr. 5 – 9

Introduction to SQL
Read SQL Bolt Tutorial (Lessons 1 – 9)
(<https://sqlbolt.com/>)

Friday, Apr. 9

Platoon A in person

Week 14: Apr. 12 – 16

Using SQL in Python

Read Psycopg2 Tutorial (<http://initd.org/psycopg/>)

Lab 7: Using Databases on the Server

Friday, Apr. 16

Platoon B in person

Apr. 14

Symposium on the Common Good (No Class)

Week 15: Apr. 19 – 23

Catchup and Review

Final Review Packet due Friday, Apr. 23

Apr. 26

Final Exam Review

Friday, Apr. 23

Platoon A in person

Final Exam: May 3 (Mon. 8:00am – 10:30am)

Major Assignments:

This class is heavily project driven and most of your grade will come from successful completion of the projects. However, there will also be a final exam and (roughly) weekly homework assignments. See the course schedule (above) for tentative due dates.

Projects: Projects are worth 75% of your grade. There will be six to eight laboratory projects.

Exams:

The final exam will be a comprehensive exam covering all course topics and is worth 10% of your grade.

Homework and Quizzes:

Homework assignments (largely based on the reading) will comprise 10% of your grade. In general, I will assign these at the beginning of the week and they will be due that Friday, however, due dates may vary depending on the schedule so check the course web site for updated due dates. I also give unannounced pop quizzes, so make sure you have done the reading for each week by the beginning of that week!

Probably the largest part of your homework grade will be the final review packet at the end of the year which will be due on April 23rd.