

CMPSCI 120

Fall 2017

Problem Solving with the Internet

Professor William T. Verts

Class Lectures:

Monday, Wednesday, Friday, 11:15AM–12:05PM, ILC S331. I will miss Friday, December 1 due to an all-day faculty retreat; a TA will hold a quiz or other in-class exercise.

Office Hours and Email:

LGRC A357, M/W/F 2:30-3:30 & by appointment. I must miss hours on Sept. 8, Oct. 16 & 23 and Dec. 1.
verts@cs.umass.edu Personal, for asking questions. Put CMPSCI 120 in the subject line.
literacy@cs.umass.edu For submitting labs and homework. Put CMPSCI 120 in the subject line.
TA office hours in LGRT 222 yet to be arranged. TA office is shared by all TAs and graders for all my courses.

Book:

Computer Science Companion, REVISED 3RD Edition, 2017 Printing, ISBN 9781524943998, ~\$28, by me. (It is OK if you have the unrevised 3RD edition from last year, but the revised version has new information, errors have been corrected, and it is now in color.) Other than handouts, we will get all other reference materials from the Web itself. There are many reference books on HTML, CSS, JavaScript, and Python available at local book stores; I'll provide references when appropriate, but purchase is not mandatory. The *Computer Science Companion* is a required text for COMPSCI 105, 119, 120, and 145.

Web Sites:

<http://people.cs.umass.edu/~verts>
<http://people.cs.umass.edu/~verts/cmpsci120/cmpsci120.html>
<http://people.cs.umass.edu/~verts/cmpsci120/quizzes/quizzes.html>
<http://people.cs.umass.edu/~verts/cmpsci120/GenEdStatement.html>

Twitter and other Social Media:

Please do not “friend” me on Facebook, Linked-In, or other social networks. I reserve Facebook for relatives, hiking buddies, and friends from high school, and I largely ignore Linked-In. I do not often post messages on Twitter.

Course Scoring (percentages may change according to number and type of assignment):

Midterm #1	15%	October 6, in-class. Open notes.
Midterm #2	15%	November 10, in-class. Open notes.
Final Exam	20%	Wednesday, December 20, Marcus 131, 10:30am-12:30pm. Open notes.
Projects	40%	Throughout semester: Late penalties will apply as appropriate.
Homeworks/Quizzes	10%	Occasional; some on-line, some on paper.

Letter grades will be assigned according to final computed course score:

A \geq 90%, A- \geq 88%, B+ \geq 86%, B \geq 80%, B- \geq 78%, C+ \geq 76%, C \geq 64%, C- \geq 62%, D+ \geq 60%, D \geq 50%, F < 50%. Missing any exam incurs an automatic F for the course. Fractional final course scores will be rounded to the nearest integer. For example, 87.49999 rounds down to 87 (B+), while 87.50000 rounds up to 88 (A-).

Computer:

You are expected to do all work on your own personal computer. However, most projects can be accomplished on computers in campus OIT labs. For the lectures I will switch between PCs running Windows 7 and Macs running OS/X, arbitrarily, or as my demonstrations require, or I may run both simultaneously. While this course is largely platform agnostic, there will be some (free) programs I will have you use that are designed to work exclusively on a Windows PC – these will also work on a Mac if it is also running Crossover (which is not free). I may also provide some free software that will run on either platform.

Notes:

1. **DO YOUR OWN WORK, INCLUDING HOMEWORK AND LAB WORK.** You may discuss homework and lab assignments with other students, but you may not share files or disks. Upon discovery of duplication, I will contact you for a conference, as required in the guidelines set out by the University of Massachusetts Academic Honesty Policy, and we will resolve the issue according to those guidelines. See the document at: http://www.umass.edu/dean_students/academic_policy/
2. **Do not** ask for extra work after the end of the semester to boost an undesirable grade. I never grant such requests.
3. Please contact me directly if you have any concerns about the running of the course, the TA, grading, etc.

Day-By-Day Schedule (Very Tentative):

	Monday	Wednesday	Friday
1	September 4 – Labor Day Holiday	September 6 – First Lecture – Intro to course. Timeline of Technology.	September 8 – Search engines. Class exercise in image analysis as background for searching.
2	September 11 – Bias and other issues when performing Web searches. Pareidolia. Bad polls.	September 13 – Email, SPAM, Phishing, intro to Encryption. Intellectual property & .PDF files.	September 15 – State of the Internet. Network topologies. Magic Cookies.
3	September 18 – Hubs and Routers: Network Hardware Configurations and Wi-Fi.	September 20 – Bits & Bytes, Binary & Hex. Classful & Classless Addressing. CIDR. IPv4 & IPv6.	September 22 – DNS (Domain Name Service). Interpreting a URL.
4	September 25 – More on URLs. Client-Server models. Packets and Packet Sniffers.	September 27 – Intro to HTML: Basic page layout, colors, links, deprecated tags.	September 29 – Telnet, FTP, and encrypted versions. UNIX. Installing Web pages on a server.
5	October 2 – Navigating around UNIX. File permissions. Embedded FTP.	October 4 – Catch-up day / Special Topics. Review for Midterm.	October 6 – Midterm #1
6	October 10 (TUESDAY) – Problems with old-style approaches. Intro to CSS.	October 11 – Extensive treatment of CSS (Cascading Style Sheets).	October 13 – Graphics Files (.BMP, .GIF, .JPG, .PNG). Graphics tags in HTML.
7	October 16 – Favicons. 3D Buttons. Intro to .SVG files: creating by hand vs. image software.	October 18 – Finish tags: lists, tables, horizontal rules, client-side image maps, div and span, etc.	October 20 – Frames (and why they are no longer used so much).
8	October 23 – Introduction to programming concepts. What’s a program? Language differences.	October 25 – Intro to JavaScript: Button roll-overs, other embedded actions. Debugging JavaScript.	October 27 – More JavaScript: emitting HTML dynamically.
9	October 30 – More JavaScript: intro to forms.	November 1 – CamWatcher with JavaScript.	November 3 – Integrating big programs into Web Pages.
10	November 6 – Catch-up day for programming.	November 8 – Catch-up day / Special Topics. Review for Midterm.	November 10 – Midterm #2
11	November 13 – Intro to Python language, how to design and run programs. Python on UNIX.	November 15 – Python to generate HTML & respond to Web forms.	November 17 – Advanced Python to send email.
12	November 20 – Thanksgiving Holiday	November 22 – Thanksgiving Holiday	November 24 – Thanksgiving Holiday
13	November 27 – Encryption: single and double key (public key). Secure Web transactions.	November 29 – Viruses and Malware. Social engineering.	December 1 – I must be away this day. Special Topics handled by a TA.
14	December 4 – Guest speaker (May swap with December 6 or December 8)	December 6 – Future of the Internet and Web.	December 8 – Review of “Grand Themes” in course.
15	December 11 – Last Day of Class, Review for Final Exam.	December 20 – FINAL EXAM 10:30AM-12:30PM, Marcus 131	