CMPSCI 120
Fall 2016
Problem Solving with the Internet

Professor William T. Verts

Class Lectures:

Monday, Wednesday, Friday, 11:15AM–12:05PM, Goessmann 20. Occasionally on Mondays class will end about 5-10 minutes early due to noon-time faculty meetings. I will miss Friday, November 18 due to an all-day faculty retreat; a TA will hold a quiz or other in-class exercise.

Office Hours and Email:

LGRC A357, Office Hours yet to be arranged. Appointments at our mutual convenience.

`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, 3RD Edition, 2016 Printing, ISBN 978-1-5249-0236-0, ~$24, by me. 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. Students who have taken or are taking concurrently my CMPSCI 105 course may find that the *Computer Literacy Workbook* is also very helpful in CMPSCI 120.

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%	Friday, October 7, in-class. Open notes.
Midterm #2	15%	Monday, November 14, in-class. Open notes.
Final Exam	20%	Friday, December 16, Totman Gym, 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 ≥ 90%, A- ≥ 88%, B+ ≥ 86%, B ≥ 80%, B- ≥ 78%, C+ ≥ 76%, C ≥ 64%, C- ≥ 62%, D+ ≥ 60%, D ≥ 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).

Notes:

1. **<u>DO YOUR OWN WORK, INCLUDING HOMEWORK AND LAB WORK.</u>** You may <u>discuss</u> homework and lab assignments with other students, but you <u>may not share files or disks</u>. 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. **<u>Do not</u>** 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 5** – Labor Day Holiday	**September 7** – First Lecture – Intro to course. Timeline of Technology.	**September 9** – Class exercise in image analysis as background for searching.
2	**September 12** – Bias and other issues when performing Web searches. Pareidolia. Bad polls.	**September 14** – Email: types and use, SPAM, Phishing, intro to Encryption. Recent related news.	**September 16** – State of the Internet. Network topologies. Magic Cookies.
3	**September 19** – Hubs and Routers: Network Hardware Configurations and Wi-Fi.	**September 21** – Bits & Bytes, Binary & Hex. Classful & Classless Addressing. CIDR. IPv4 & IPv6.	**September 23** – DNS (Domain Name Service). Interpreting a URL. .PDF Files.
4	**September 26** – More on URLs. Client-Server models. Packets and Packet Sniffers.	**September 28** – Intro to HTML: Basic page layout, colors, links, deprecated tags.	**September 30** – Basic HTML tags: marking up text. Problems with old-style approaches.
5	**October 3** – Introduction to Cascading Style Sheets (CSS).	**October 5** – Catch-up day / Special Topics. Review for Midterm.	**October 7 – Midterm #1**
6	**October 11 (TUESDAY)** – Graphics Files (.BMP, .GIF, .JPG, .PNG). Graphics tags in HTML.	**October 12** – Graphics on the Web. Favicons. 3D Sculptured Buttons. Intro to .SVG files.	**October 14** – More on .SVG files: creating by hand vs. image software.
7	**October 17** – Telnet and encrypted Telnet. Intro to UNIX.	**October 19** – Navigating around UNIX. File permissions.	**October 21** – FTP and encrypted FTP. Installing Web pages on a server.
8	**October 24** – More on FTP and other Internet Tools. Embedded FTP.	**October 26** – Finish tags: lists, tables, horizontal rules, client-side image maps, etc.	**October 28** – Frames (and why they are no longer used so much).
9	**October 31** – Intro to JavaScript: Button roll-overs, other embedded actions.	**November 2** – More JavaScript: emitting HTML dynamically.	**November 4** – More JavaScript: intro to forms.
10	**November 7** – More JavaScript: Integrating programs into Web Pages.	**November 9** – Catch-up day / Special Topics. Review for Midterm.	**November 11 –** Veterans Day Holiday
11	**November 14** – **Midterm #2**	**November 16** – Intro to Python. Language, how to design and run programs. Python to generate HTML & respond to Web forms.	**November 18** – I must be away; TA(s) will do some kind of in-class exercise.
12	**November 21** – Thanksgiving Holiday	**November 23** – Thanksgiving Holiday	**November 25** – Thanksgiving Holiday
13	**November 28** – Python to send email.	**November 30** – Encryption: single and double key (public key). Secure Web transactions.	**December 2** – Special Topics handled by a TA.
14	**December 12** – Viruses and Malware. Social engineering.	**December 14** – Review of "Grand Themes" in course. Last Day of Class, Review for Final Exam.	**December 16** – FINAL EXAM 10:30AM-12:30PM, TOTMAN GYM