CS 120 Syllabus

21 January 2015

Welcome to Web Development. Here is the official course description:

> Web page and Common Gateway interface (CGI) application development. Topics include HTML, Web browser and server communication using HTTP and HTTPS, browser state tracking, basic web server configuration settings, client-side JavaScript, back-end database connectivity, and CGI application development using common tools and languages. Students are required to develop and complete several web-based applications.

When: Monday, Wednesday 3–4:50 PM
Where: LLC 207
Credits: 3
Prerequisites: CS102

Contact Info

Instructor: Prof. Christopher League, Ph.D.
Email: christopher.league@liu.edu — please include the course number (CS120) in the subject. I have several email addresses, but all messages end up in the same place, so use only one.
Google Hangout: cleague@gmail.com
AIM: chrysleague
Office hours: Monday, Wednesday 2–2:50 or make an appointment at https://liucs.net/bookme
Office phone: +1 718 488 1274
Office location: LLC 206, LIU Brooklyn

Resources

We will use several web resources:

- https://liucs.net/cs120s15/ — notes, schedule, assignment handouts
- https://piazza.com/liu/spring2015/cs120 — discussion, Q&A
- https://gitlab.com/ — assignment submission
- http://www.gradechamp.com/ — grade reports

There is no required textbook, but if you'd like a book to supplement or for reference, here are some great suggestions:

- *HTML5: The Missing Manual* by Matthew MacDonald http://amzn.to/1ykqPzQ
- *JavaScript & jQuery: The Missing Manual* by David Sawyer McFarland http://amzn.to/1szcDDz
- *AngularJS: Up and Running* by Seshadri and Green http://amzn.to/153N4zI

Campus library resources tailored for computer science are available at https://liucs.net/u1

Requirements

Your grade will be computed based on assignments, exams, and participation. There are a total of 1,000 points available, broken down as follows:

- There will be **6 programming assignments** during the semester. Assignments are worth **100 points each,** for a total of **600 points.**
- There will be **14 'check-in' opportunities,** roughly one per week. These vary from week to week, but may involve responding to a survey, taking a brief online quiz, participating in a discussion, or making some progress on an assignment. Check-ins are worth **12 points each** but I will **drop the lowest 2 scores** so only 12 will count, for a total of **144 points.**
- There will be a midterm and final exam, worth **100 points each,** for a total of **200 points.**
- The remaining **56 points** are for effective participation in the Piazza online discussion and Q&A forum.

On the 1,000-point scale, you can expect the following letter grades:

		≥ 870:	**B+**	≥ 770:	**C+**	≥ 670:	**D+**
≥ 930:	**A**	≥ 830:	**B**	≥ 730:	**C**	≥ 600:	**D**
≥ 900:	**A–**	≥ 800:	**B–**	≥ 700:	**C–**	else:	**F**

In the end, I may choose to adjust the scale slightly to compensate for assignments or questions that turned out to be trickier than I intended. Such adjustments would never *lower* your grade from what is designated in the above table; if you achieve 930 points, you are guaranteed an **A**.

Policies

It is important to **complete tasks on time,** so you don't fall behind. Missed check-ins will receive a zero, and cannot be made up (but remember, the lowest two scores are

dropped). If you need to miss an exam, try to notify me in advance so we can make other arrangements. **Late assignments** will be graded as follows.

This formula specifies a *lateness factor* f that is multiplied by your earned score to determine a late score. The variable h represents the number of hours the submission is late.

$$f = \frac{8.5 - \log_2\left(\frac{h}{24}\right)}{10}$$

There will be no extra credit. Students usually ask for extra credit late in the semester after they have already squandered their original opportunities. Be sure to start your work early, so that we can detect and solve any problems before they can affect your grade.

Plagiarism is the use or presentation of ideas, words, or work that is not one's own and that is not common knowledge, without granting credit to the originator. Plagiarism is a practice that is not only unacceptable, but which is to be condemned in the strongest terms possible on the basis of moral, educational and legal grounds. Under University policy, plagiarism may be punishable by a range of penalties from a failing grade in the assignment or course to dismissal from the School of Business, Public Administration and Information Sciences. All students are required to read the handbook on avoiding plagiarism by visiting https://liucs.net/u2

Cheating includes, but is not limited to the following: falsification of statements or data; listing sources that have not been used; having another individual write your paper or do your assignments; writing a paper or creating work for another student to use without proper attribution; purchase of paper or research work for one's submission as his/her own work; using written, verbal, or electronic or other sources of aid during an examination (except when expressly permitted by the instructor, depending on the nature of the examination) or knowingly providing such assistance to aid other students.

In a course with programming assignments, it is usually okay to work with and learn from other students to **some** extent, but what you submit in the end needs to be your own. The most reliable way to do that would be to set aside whatever code you created together, and then recreate it from scratch on your own.

Showing up on time to class is extremely important. If you must be absent or more than 5 minutes late, please try to notify me in advance. I will be keeping track of whether you are in class, and when you arrive. A few missed classes will not count against you, but habitual absence will significantly hurt your grade. Additionally, there will be no make-up quizzes. I do not distinguish between 'excused' and 'unexcused' absence. Unless you miss an *exam* due to a severe medical emergency, I don't want to see a doctor's note. If you do miss an exam, the make-up exam will be different – and probably *not* easier.

Long Island University seeks to provide **reasonable accommodations for all qualified persons with disabilities,** whether psychological, neurological, chronic medical, learning, sensory, or physical. The University will adhere to all applicable federal,

state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to register with Student Support Services as early as possible and to provide faculty members with the formal communication for suitable accommodations. Visit Pratt 410, call 718 488 1044, or visit http://www.liu.edu/Brooklyn/SSS

I participate in the **LIU Safe Zone** program. Representatives of the program serve as contacts for individuals on campus with questions or concerns related to sexual orientation and gender identity, whether of self or of a friend or family member. The goal of the program is to promote a safe and free campus for all students. Safe Zone areas can be identified by a sticker with the LIU Safe Zone logo.

The **Family Educational Rights and Privacy Act** (FERPA) gives students control over the disclosure of their educational records. During this course you may have the opportunity to create accounts or register with certain public online services. In these cases, you need not make any personally identifying information public. You may use a pseudonym or online handle, as long as you identify yourself to the instructor.

Goals and objectives

Upon completion of this course, I expect that you will be able to…

1. describe the purpose of standard methods and headers in the HyperText Transfer Protocol (HTTP).
2. use the developer tools built in to web browsers to investigate the Document Object Model and diagnose connection problems.
3. create basic interactive web applications using JavaScript and jQuery.
4. create intermediate interactive web applications using a client-side framework such as AngularJS.
5. implement the server-side of a web API using a database and framework such as Play or NodeJS.

Assessment of learning

This course is an elective of the B.S. program in Computer Science. This section relates programmatic objectives with objectives and assessment instruments used in this course. At the completion of the B.S. program…

BSCS 1.1 Written Communication: Students will prepare quality written documents that effectively communicate technical ideas and system specifications.

BSCS 1.2 Oral Communication: Students will develop competencies in delivering effective presentations of technical ideas and system specifications.

BSCS 2.1 Programming Language Constructs: Students will demonstrate mastery in the use of programming constructs, including functions. *Practiced in course objective 3.*

BSCS 2.2 Algorithms: Students will achieve competency in developing algorithms using linear data structures, trees, and graphs.

BSCS 2.3 Networks: Students will develop an understanding of internet protocols and apply the concepts to perform network configuration and troubleshooting tasks. *Mastered in course objectives 1, 2.*

BSCS 2.4 Computer Systems: Students will develop an understanding of the hardware and software architecture of computer systems. *Practiced in course objectives 4, 5.*

BSCS 3.1 Programming: Students demonstrate competency in writing and completing programs using commonly accepted programming practices. *Practiced in course objectives 3, 4, 5.*

BSCS 4.1 Application Design: Students develop proficiency in designing database intensive applications with demonstrated knowledge of Normalization and SQL. *Practiced in course objective 5.*

BSCS 4.2 Application Development: Students use appropriate development environments, tools and software engineering principles to plan, implement, and test a software application. *Practiced in course objectives 2, 4, 5.*

Schedule

We will cover these topics:

1. Basics of HTTP and introduction to web developer tools
2. HTML, CSS, and Twitter Bootstrap
3. JavaScript programming
4. jQuery library
5. AngularJS client-side framework
6. Server-side framework(s)

The day-by-day schedule is shown below, including all deadlines.

Wed Jan 21 Meeting 1 at 3 pm. Introduction to course and HTTP.

Sun Jan 25 Check-in 1 due at 23:59.

Mon Jan 26 Meeting 2 at 3 pm. Snow day.

Wed Jan 28 Meeting 3 at 3 pm. Details of HTTP requests and responses.

Sun Feb 1 Check-in 2 due at 23:59.

Mon Feb 2 Meeting 4 at 3 pm. Using curl to manage sessions, and intro to Twitter Bootstrap (video available). Video

Wed Feb 4 **NO MEETING** at 3 pm. Online activity. (I am out of town.)
Thu Feb 5 **Assignment 1** due at 23:59.
Sun Feb 8 **Check-in 3** due at 23:59.
Mon Feb 9 **Meeting 6** at 3 pm. Navigating Twitter Bootstrap, using CSS without Bootstrap, Google fonts. Video
Wed Feb 11 **Meeting 7** at 3 pm. Detailed syntax of selectors and attributes in CSS. Video
Tue Feb 17 **Check-in 4** due at 23:59.
Wed Feb 18 **Meeting 8** at 3 pm. Short introduction to Javascript. Video
Thu Feb 19 **Assignment 2** due at 23:59.
Fri Feb 20 **NO MEETING** at 3 pm. Online activity. (Friday follows Monday schedule, but I am out of town.)
Sun Feb 22 **Check-in 5** due at 23:59.
Mon Feb 23 **Meeting 10** at 3 pm. Using WebStorm code inspector, and the Javascript DOM. Video
Wed Feb 25 **Meeting 11** at 3 pm. The Google Maps API. Video
Sun Mar 1 **Check-in 6** due at 23:59.
Mon Mar 2 **Meeting 12** at 3 pm. Review of Javascript for managing form inputs. Video
Wed Mar 4 **Meeting 13** at 3 pm. Help on assignment 3, introduction to deployment options such as S3 and an SFTP host. Video
Thu Mar 5 **Assignment 3** due at 23:59.
Sun Mar 15 **Check-in 7** due at 23:59.
Mon Mar 16 **Meeting 14** at 3 pm. Review my assignment 3 solution, JSON, and intro to jQuery. Video
Wed Mar 18 **Meeting 15** at 3 pm. Auto-completion of a text field, more on JSON and AJAX, using jQuery's getJSON function. Video
Mon Mar 23 **Meeting 16** at 3 pm. Video
Tue Mar 24 **Check-in 8** due at 23:59.
Wed Mar 25 **Meeting 17** at 3 pm.
Sun Mar 29 **Check-in 9** due at 23:59.
Mon Mar 30 **Meeting 18** at 3 pm.
Tue Mar 31 **Assignment 4** due at 23:59.
Wed Apr 1 **Meeting 19** at 3 pm.
Sun Apr 5 **Check-in 10** due at 23:59.
Mon Apr 6 **Meeting 20** at 3 pm.
Wed Apr 8 **Meeting 21** at 3 pm.
Sun Apr 12 **Check-in 11** due at 23:59.
Mon Apr 13 **Meeting 22** at 3 pm.
Wed Apr 15 **Meeting 23** at 3 pm.
Thu Apr 16 **Assignment 5** due at 23:59.
Sun Apr 19 **Check-in 12** due at 23:59.
Mon Apr 20 **Meeting 24** at 3 pm.

Wed Apr 22 **Meeting 25** at 3 pm.
Sun Apr 26 **Check-in 13** due at 23:59.
Mon Apr 27 **Meeting 26** at 3 pm.
Wed Apr 29 **Meeting 27** at 3 pm.
Sun May 3 **Check-in 14** due at 23:59.
Mon May 4 **Meeting 28** at 3 pm.
Thu May 7 **Assignment 6** due at 23:59.
Sun May 10 **Take-home final** due at 23:59. This is also the last possible time to submit assignments for late credit.