

# Syllabus

version 1

## Instructor

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## Description

Today's websites are increasingly dynamic. Pages are no longer static HTML files but instead generated by scripts and database calls. User interfaces are more seamless, with technologies like Ajax replacing traditional page reloads. This course teaches students how to build dynamic websites with Ajax and with Linux, Apache, MySQL, and PHP (LAMP), one of today's most popular frameworks. Students learn how to set up domain names with DNS, how to structure pages with XHTML and CSS, how to program in JavaScript and PHP, how to configure Apache and MySQL, how to design and query databases with SQL, how to use Ajax with both XML and JSON, and how to build mashups. The course explores issues of security, scalability, and cross-browser support and also discusses enterprise-level deployments of websites, including third-party hosting, virtualization, colocation in data centers, firewalling, and load-balancing.

## Prerequisites

Multiple years of programming experience in any language; comfort with HTML and CSS.

## Expectations

You are expected to attend or watch all lectures and implement three projects.

## Grades

Your final grade will be based on your performance on the course's projects, each of which will bear equal weight. Projects will be evaluated along the axes of scope, correctness, design, and style, with each project's overall score computed as  $\text{scope} \times (3 \times \text{correctness} + 2 \times \text{design} + 1 \times \text{style})$ . Scores are normalized across TFs at term's end, so mid-semester comparisons among students of scores are not reliable indicators of standing.

## Website

The address of this course's website is:

<https://www.cs75.net/>

## Lectures

Lectures take place in Northwest Science Building B101 on most Mondays and Wednesdays from 3:15pm until 6:15pm.

A schedule of lectures, subject to change, appears below.

**Lecture 0: HTTP**

Mon 6/25

**Lecture 1: PHP**

Wed 6/27

**Lecture 2: PHP, Continued**

Mon 7/2

**Lecture 3: MVC, XML**

Mon 7/9

**Lecture 4: SQL**

Wed 7/11

**Lecture 5: SQL, Continued**

Mon 7/16

**Lecture 6: JavaScript**

Wed 7/18

**Lecture 7: Ajax**

Mon 7/23

**Lecture 8: Security**

Wed 7/25

**Lecture 9: Scalability**

Mon 7/30

## Sections

Sections offer opportunities to review recent lectures' material in a more intimate environment with only a teaching fellow and a handful of classmates present. Sections also provide guidance on projects.

A schedule of sections appears on the course's website.

## Projects

A schedule of projects, subject to change, appears below.

### Project 0

**Released:** Mon 7/9

**Due:** Wed 7/18, noon ET

### Project 1

**Released:** Mon 7/16

**Due:** Wed 7/25, noon ET

### Project 2

**Released:** Mon 7/23

**Due:** Wed 8/1, noon ET

Extensions on these projects are not granted, except in cases of emergency. Technical difficulties do not constitute emergencies. Late submissions are penalized 10% per hour (or fraction thereof) late. Lateness is determined by submissions' timestamps.

## Exams

This course has neither a midterm nor a final exam.

## Books

No books are required for this course, but you may find the below helpful during and after the course. Although some are out of print, all of these books are available for purchase at sites like Amazon.com. Realize that links to free, if not superior, alternatives to these books can be found on the course's website.

*Apache Phrasebook*

Daniel Lopez

Sams Publishing, 2006

ISBN-10 0-672-32836-4

*Don't Make Me Think: A Common Sense Approach to Web Usability, Second Edition*

Steve Krug

New Riders Publishing, 2006

ISBN 0-321-34475-8

*Linux Phrasebook*

Scott Granneman

Sams Publishing, 2006

ISBN-10 0-672-32838-0

*MySQL Phrasebook*

Zak Greant, Chris Newman

Sams Publishing, 2006

ISBN-10 0-672-32839-9

*PHP in Action: Objects, Design, Agility*

Dagfinn Reiersøl, Marcus Baker, Chris Shiflett

Manning Publications Co., 2007

ISBN 978-1-932394-757

*Pro JavaScript Design Patterns*

Ross Harmes, Dustin Diaz

Apress, 2008

ISBN 978-1-59059-908-2

## **Academic Honesty**

All work that you do toward fulfillment of this course's expectations must be your own unless collaboration is explicitly allowed (*e.g.*, by some problem set or the final project). Viewing or copying another individual's work (even if left by a printer, stored in an executable directory, or accidentally shared in the course's virtual classroom) or lifting material from a book, magazine, website, or other source—even in part—and presenting it as your own constitutes academic dishonesty, as does showing or giving your work, even in part, to another student.

Similarly is dual submission academic dishonesty: you may not submit the same or similar work to this course that you have submitted or will submit to another. Nor may you provide or make available your or other students' solutions to Project 0, Project 1, or Project 2 to individuals who take or may take this course (or CSCI E-75) in the future.

You are welcome to discuss the course's material with others in order to better understand it. You may even discuss problem sets with classmates, but you may not share code. You may also turn to the Web for instruction beyond the course's lectures and sections, for references, and for solutions to technical difficulties, but not for outright solutions to problems on projects. However, failure to cite (as with comments) the origin of any code or technique that you do discover outside of the course's lectures and sections (even while respecting these constraints) and then integrate into your own work may be considered academic dishonesty.

If in doubt as to the appropriateness of some discussion or action, contact the staff.

All forms of academic dishonesty are dealt with harshly. If the course refers some matter to the Administrative Board and the outcome for some student is disciplinary action, the course reserves the right to impose local sanctions on top of that outcome for that student that may include, but not be limited to, a failing grade for work submitted or for the course itself.

## **Acknowledgement**

Computer Science S-75 (CSCI S-75) plans to make video and audio recordings of this course's lectures, sections, walkthroughs, and/or other events, with the aim of making the content of the course more widely available. The recordings, or edited versions of them, may be made available to other Harvard students, to students at other educational institutions, and to the broader public, via the Internet, television, DVD, or other means. It is also possible that video and audio recordings of CSCI S-75 may be used to make other derivative works in the future. Students may elect not to take part in this CSCI S-75 recording and dissemination project (the "Project"), and may still participate fully in CSCI S-75.

By enrolling in this course, you affirm that you understand that, if you do not wish to be included in the video recordings of CSCI S-75, you must sit in the "no film" section of the classroom. From the "no film" section, you will be able to participate fully in CSCI S-75 discussions, and no video recording of you will be used as part of the Project. Though you understand that your name and/or voice might still be recorded by microphones outside of the "no film" section. You recognize that, if you choose at any time to sit in the part of the classroom that is being filmed or walk within sight of any cameras, you will be

consenting to be recorded on video for use in the Project. In that event, you agree that, even if you do not sign any other authorization, CSCI S-75 may make video and audio recordings of you and your participation, and may use the recordings as it sees fit without further obligation or liability to you.

By enrolling in this course, you affirm that you are at least 18 years of age and competent to agree to these terms.\* This Acknowledgement is a binding agreement and is agreed to as a document under seal governed by the laws of the Commonwealth of Massachusetts.

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\* Students who are not at least 18 years of age may still enroll but must first alert the course's instructor via email.