Syllabus

version 1.0.3

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, and how to use Ajax with both XML and JSON. The course discusses issues of security, scalability, and cross-browser support.

Prerequisites

Prior programming experience in any language is assumed.

Expectations

You are expected to attend or watch all lectures, to implement four assigned projects, and to design and implement a final project.

Grades

Your final grade will be based on your performance on the course's assigned projects and final project, each of which will bear equal weight. Remarkable effort and improvement will not go unnoticed.

Website

The address of this course's website appears below.

> http://cs75.net/

Visit the course's website to access the course's bulletin board, enter the virtual classroom, check your grades, watch videos of lectures and sections, download handouts and software, and follow links to other resources.

Staff

To contact the entire staff, email the address below.

> staff@cs75.net

However, you are encouraged to post most questions to the bulletin board on the course's website instead so that others might benefit as well.

Lectures

Lectures will take place in Harvard Hall 202 on most Mondays from 7:35 P.M. ET until 9:35 P.M. ET.

Each lecture will be filmed and made available within 72 hours via podcast (for download to iTunes and iPods) and via the course's website in Flash, MP3, and QuickTime formats. Once posted, these recordings will remain available until semester's end. Although the recordings are intended to be used by students taking the course via the Internet, students taking the course on campus are welcome to watch or listen to the recordings in the event that their attendance at one or more lectures is not possible. All students are welcome to watch or listen to the recordings for the purpose of reviewing the content of particular lectures.

These recordings are best downloaded or played via a high-speed (*e.g.*, cable or DSL) connection to the Internet. Dial-up connections, though possible (especially for audio-only recordings), are not ideal.

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

> **Lecture 0: DNS, HTTP, XHTML, and CSS**
> Monday, 28 January 2008
>
> **Lecture 1: PHP**
> Monday, 4 February 2008
>
> **Lecture 2: PHP, Continued**
> Monday, 11 February 2008

Lecture 3: SQL
Monday, 25 February 2008

Lecture 4: SQL, Continued
Monday, 3 March 2008

Lecture 5: JavaScript
Monday, 10 March 2008

Lecture 6: Ajax
Monday, 17 March 2008

Lecture 7: Ajax, Continued
Monday, 31 March 2008

Lecture 8: Security
Monday, 7 April 2008

Lecture 9: Scalability
Monday, 14 April 2008

Lecture 10: To Be Announced
Monday, 21 April 2008

Lecture 11: To Be Announced
Monday, 28 April 2008

Lecture 12: Computer Science Fair
Monday, 19 May 2008

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 will also provide guidance on projects. Multiple 60- to 120-minute sections will be offered most weeks, one of which will be filmed for distant students and those who cannot otherwise attend.

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

Office Hours

Throughout the week, the staff hold office hours during which you can receive hands-on, one-on-one assistance. The staff also hold virtual office hours in the course's "virtual classroom," where you can receive remote, one-on-one assistance via the Web. Thanks to technology, the staff can help you troubleshoot bugs by observing or sharing control of your screen while chatting with you via IM or VOIP, whether you're at home, at work, at Starbucks, or beyond!

A schedule of office hours appears on the course's website.

Projects

In addition to a final project, four other projects will be assigned during the semester.

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

> **Project 0: Setup**
>
>> **Assigned:** Monday, 28 January 2008
>> **Due:** Monday, 11 February 2008, 5:30 P.M. ET
>
> **Project 1: PizzaML**
>
>> **Assigned:** Monday, 11 February 2008
>> **Due:** Monday, 3 March 2008, 5:30 P.M. ET
>
> **Project 2: C$75 Finance**
>
>> **Assigned:** Monday, 3 March 2008
>> **Due:** Monday, 31 March 2008, 5:30 P.M. ET
>
> **Project 3**
>
>> **Assigned:** Monday, 31 March 2008
>> **Due:** Monday, 21 April 2008, 5:30 P.M. ET

Extensions on these four projects will not be granted, except in cases of emergency. Technical difficulties will not constitute emergencies. Work submitted n hours late without extension will penalized 5% for n in (0, 24], 10% for n in (24, 48], 25% for n in (48, 72], 50% for n in (72, 96], or 100% for n greater than 96. Lateness will be determined by submissions' timestamps.

Final Project

Perhaps the most gratifying aspect of this course will be its final project. The final project will be your opportunity to design and implement a dynamic website of your very own. So long as your final project draws upon this course's lessons, the nature of your website is entirely up to you, albeit subject to the staff's approval.

Inasmuch as software development is rarely a one-person effort, you will be allowed an opportunity to collaborate with one or two fellow students for this final project. Needless to say, it is expected that every student in any such group will contribute equally to the design and implementation of that group's project. Moreover, it is expected that the scope of a two- or three-person group's project will be, respectively, twice or thrice that of a typical one-person project. A one-person project, mind you, should entail time and effort equivalent to or greater than that required by one of this course's assigned projects.

Guidelines for the final project will be distributed by 31 March 2008.

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

> **Pre-Proposal**
>
> > **Due:** Monday, 7 April 2008, 5:30 P.M. ET
>
> **Proposal**
>
> > **Due:** Monday, 14 April 2008, 5:30 P.M. ET
>
> **Status Report**
>
> > **Due:** Monday, 5 May 2008, 5:30 P.M. ET
>
> **Implementation**
>
> > **Due:** Monday, 19 May 2008, 5:30 P.M. ET

Extensions of these deadlines will not be granted, except in cases of emergency. Technical difficulties will not constitute emergencies. Work submitted n hours late without extension will penalized 5% for n in (0, 24], 10% for n in (24, 48], 25% for n in (48, 72], 50% for n in (72, 96], or 100% for n greater than 96. Lateness will be determined by submissions' timestamps.

Exams

This course will have neither a midterm nor a final exam.

Books

No books are required for this course. However, we recommend the below as references. Each is available for purchase at sites like Amazon.com. Each has also been placed on reserve at Grossman Library. Realize that links to free, if not superior, alternatives to these books can be found on the course's website.

> *HTML: Your visual blueprint for designing Web pages with HTML, CSS, and XHTML*
> Paul Whitehead and James H. Russell
> Wiley Publishing, Inc., 2005
> ISBN 0-7645-8331-X
>
> *JavaScript: Your visual blueprint for building dynamic Web pages*, 2nd Edition
> Eric Pascarello
> Wiley Publishing, Inc., 2004
> ISBN 0-7645-7497-3
>
> *PHP 5: Your visual blueprint for creating open source, server-side content*
> Toby Joe Boudreaux
> Wiley Publishing, Inc., 2005
> ISBN 0-7645-8332-8
>
> *SQL: Visual QuickStart Guide*, Second Edition
> Chris Fehily
> Peachpit Press, 2005
> ISBN 0-321-33417-5

Grossman Library

Grossman Library, located in Sever Hall 311, is a reserve-reading and study library open to all Extension School students. Each of this course's recommended books has be placed on reserve in this library for you to read within the library; the books may not be checked out.

A schedule of hours appears at the address below.

> http://www.extension.harvard.edu/2007-08/resources/libraries.jsp

Virtual Private Server

So that the course's lessons are as real-world as possible, you will develop your projects on a virtual private server configured to resemble a commercial web host. In fact, Project 0 will have you purchase (for just a few dollars) your very own domain name for use throughout the semester. All of your projects, including your final project, will ultimately reside in that very domain.

The course will host your domain for you for the duration of the semester. We will provide you with an account via which each of your websites will be hosted. Not only will the account be accessible via SFTP and SSH, it will include at least 500 MB of storage space, unlimited email addresses within your own domain (accessible via IMAP, POP, and webmail), your own MySQL databases, and more.

Software

It is not necessary to purchase any software for this course. All software required by the course's projects will be installed on the course's virtual private server, and most will also be available for download via the course's website for Linux, Mac OS, and Windows alike.

Academic Honesty

All work that you do toward fulfillment of this course's expectations must be your own unless collaboration is explicitly allowed (as by 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 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 class that you have submitted or will submit to another. Moreover, submission of any work that you intend to use outside of the course (*e.g.*, for a job) must be approved by the staff.

You are welcome to discuss the course's material with others in order to better understand it. You may even discuss projects with classmates, but you may not share non-trivial amounts of code (*e.g.*, entire files). If in doubt as to the appropriateness of some discussion, contact the staff.

You may turn to the Web for instruction beyond the course's lectures and sections and for solutions to technical problems, so long as you cite the origin of any code you encounter and incorporate into your own work (as with CSS, PHP, or XHTML comments). Failure to cite the origin of any such code may be considered academic dishonesty.

All forms of academic dishonesty will be dealt with harshly.

Inclement Weather

In the event of inclement weather, you may call the Extension School's general information line at +1-617-495-4024 or the Harvard University Newsline at +1-617-496-6397 to find out whether some lecture or section has been cancelled.

Alternatively, you may visit the website or the address below.

http://www.extension.harvard.edu/

Announcements will also be broadcast on local radio stations WKRO-AM (680 kHz), WBZ-AM (1030 kHz), WBUR-FM (90.9 MHz), and WCRB-FM (102.5 MHz) as well as on local television stations WBZ (channel 4), WCVB (channel 5), and WHDH (channel 7).

You are advised to consult more than one of these sources, lest one or more not be current.

Noncredit Status

If you are not taking this course for credit, you are not required to submit any work. However, all of the work in this course is designed to facilitate your comprehension and retention of the course's material. Consequently, you are encouraged to complete on time as much of the work as possible. In return, you will receive feedback on any work that you do submit.