

# Overview and Introduction

## Web Architecture and Information Management [./] Spring 2009 — INFO 190-02 (CCN 42509)

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## **Abstract (2)**

This introductory lecture gives the motivation for the course, some information about the people involved and the organization of the course, a high-level overview of the course's topics, and an overview of the assignments which are an important part of the course program. The final part of the lecture describes how to connect to and setup a Web space.

## **Web Architecture and Information Management (3)**

- Foundations of Web page design (HTML & CSS)
- Multimedia content (pictures & audio/video)
- Browsers and Web pages (mobile Web)
- Web Servers (Control & Configuration)
- Communications (Internet & HTTP)
- Security & Privacy (HTTPS & Cookies)
- Client-Side Scripting & Mashups (JavaScript & Ajax)
- Server-Side Scripting (PHP & Databases)
- Syndication (RSS & Atom)
- Semantic Web (Microformats & RDFa)
- Implementation Variants (Ajax vs. Server-Side vs. Cloud)

## Course Goals

(4)

- Understanding how the Web works
- Publishing information on the Web
- Providing services on the Web
- Managing information on the Web
  - *lectures* focus on principles and technologies
  - *assignments* focus on applications
  - *tools* are important but secondary
- "An Overview of the Web as an Open Information System"

# Organizational Issues

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## About this Course

(6)

- Course Web page: <http://dret.net/lectures/web-spring09/> [./.]
- [bSpace course Web page](https://bspace.berkeley.edu/portal/site/d1b86df6-7f28-4db3-ba2d-bdd6b3b27318) [https://bspace.berkeley.edu/portal/site/d1b86df6-7f28-4db3-ba2d-bdd6b3b27318] for assignments
- Course mailing list: [web-spring09@bspace.berkeley.edu](mailto:web-fall108@bspace.berkeley.edu) [mailto:web-fall108@bspace.berkeley.edu]
  - also available through the [bSpace mail tool](https://bspace.berkeley.edu/portal/site/d1b86df6-7f28-4db3-ba2d-bdd6b3b27318/page/0e025b1b-7f65-457c-8775-8b07dea51531) [https://bspace.berkeley.edu/portal/site/d1b86df6-7f28-4db3-ba2d-bdd6b3b27318/page/0e025b1b-7f65-457c-8775-8b07dea51531]
  - the bSpace mail tool supports role-based emails (e.g., email GSIs only)
  - archived in the [bSpace email archive](https://bspace.berkeley.edu/portal/site/d1b86df6-7f28-4db3-ba2d-bdd6b3b27318/page/f98a7a8b-0066-4e71-83f5-db3aee66a025) [https://bspace.berkeley.edu/portal/site/d1b86df6-7f28-4db3-ba2d-bdd6b3b27318/page/f98a7a8b-0066-4e71-83f5-db3aee66a025]
- Letter grade based on participation, assignments, and exams
  - participation: 10%
  - assignments: 40%
  - mid-term exam: 20%
  - final exam: 30%

## About Me (7)

- Computer Science at [Technical University of Berlin \(TUB\)](http://www.tu-berlin.de/eng/) [http://www.tu-berlin.de/eng/] (88-91)
- Computer Science Ph.D. at [ETH Zürich](http://www.ethz.ch/index_EN) [http://www.ethz.ch/index\_EN] (92-97)
- Post-Doc at [ICSI, Berkeley](http://www.icsi.berkeley.edu/) [http://www.icsi.berkeley.edu/] (97/98)
  - book on "[Technical Foundations of the World Wide Web](http://dret.net/netdret/publications#wil98) [http://dret.net/netdret/publications#wil98]"
- Professor at the [School of Information](http://ischool.berkeley.edu/) [http://ischool.berkeley.edu/] (since Fall 2006)
  - technical director of the [Information and Service Design \(ISD\) program](http://isd.ischool.berkeley.edu/) [http://isd.ischool.berkeley.edu/]
  - Fall courses about [Web Architecture](http://dret.net/lectures/web-fall08/) [http://dret.net/lectures/web-fall08/] and [XML Technologies](http://dret.net/lectures/xml-fall08/) [http://dret.net/lectures/xml-fall08/]
- Office hours (311 South Hall): Monday & Wednesday 4-5pm
  - other appointments by email only

## Assignments (8)

- Weekly assignments (available on the [bSpace assignments page](https://bSpace.berkeley.edu/portal/site/d1b86df6-7f28-4db3-ba2d-bdd6b3b27318/page/04165f9b-f43f-42a4-9c16-5c35ddcd25c9) [https://bSpace.berkeley.edu/portal/site/d1b86df6-7f28-4db3-ba2d-bdd6b3b27318/page/04165f9b-f43f-42a4-9c16-5c35ddcd25c9])
  - assigned Wednesday, due following Wednesday
  - [Lab Times](#) [Lab Times (1)] on Friday for assignment support
- Support provided by [Ruchi](mailto:ruchi@ischool.berkeley.edu) [mailto:ruchi@ischool.berkeley.edu] and [Anu](mailto:anuradharoy123@gmail.com) [mailto:anuradharoy123@gmail.com]
- Closely following the course topics
  - you build a Web site with your finished assignments
  - you use a number of Web-based tools to manage information

## Lab Times (9)

- Lab times on Friday in South Hall
    - 11-12: 110 South Hall
    - 2-3pm: 202 South Hall
  - Your best opportunity to get immediate support
  - Bring your laptops, we provide no computer access
  - Questions by email will also be answered (eventually...)
  - Pick today or you will be assigned
    - visit [bSpace's survey tool](https://bSpace's_survey_tool) [[https://bSpace's\\_survey\\_tool](https://bSpace's_survey_tool)] [[https://bSpace's\\_survey\\_tool](https://bSpace's_survey_tool)] [[https://bSpace's\\_survey\\_tool](https://bSpace's_survey_tool)]
- [/Login?id=116e5f58-b196-481f-8002-6606830209af1232569127185](https://bSpace's_survey_tool)] and fill out the survey

## Course Reading (10)

- No official textbook
- Each lecture has readings and/or resources associated with it
- Reading the assigned reading in advance is required
- Searching for additional resources is encouraged
  - really good resources might go into the syllabus
  - bSpace has features for information sharing

## About these Slides (11)

- Generated from [Hotspot](http://dret.net/projects/xslidy/) [http://dret.net/projects/xslidy/] [XML](#) [web-fall08.xml]
- Designed for online presentation and use (lots of links!)
  - Firefox [Go Up](http://dret.typepad.com/dretblog/2008/07/go-up.html) [http://dret.typepad.com/dretblog/2008/07/go-up.html] allows easy navigation up one level
  - Firefox [Site Navigation Bar](https://addons.mozilla.org/en-US/firefox/addon/1949) [https://addons.mozilla.org/en-US/firefox/addon/1949] supports navigation of link links
  - Firefox [Link Widgets](https://addons.mozilla.org/en-US/firefox/addon/2933) [https://addons.mozilla.org/en-US/firefox/addon/2933] requires a bit more configuration (more flexibility)
  - for printing, use "a" (all slides), and then "s" (smaller font) a couple of times
- A good real-world example for Web-based publishing
  - Slidy/Kilauea is useful, but there is no support for structures and hyperlinking
  - Hotspot adds these features by adding an XSLT transformation
  - Hotspot is useful, but there is no interface (XML editing only)

## Additional Resources (12)

- [Online Glossary at http://dret.net/glossary/](http://dret.net/glossary/) [http://dret.net/glossary/]
  - suggestions, updates, corrections are welcome
  - another exercise in how to use XML and XSLT for information management
- [Bibliography at http://dret.net/biblio/](http://dret.net/biblio/) [http://dret.net/biblio/]
  - suggestions, updates, corrections are welcome
  - produced by an XML-centric system for managing bibliography data
- The [World Wide Web Consortium \(W3C\)](http://www.w3.org/) [http://www.w3.org/]
  - headed by [Tim-Berners Lee](http://www.w3.org/People/Berners-Lee/) [http://www.w3.org/People/Berners-Lee/], inventor of the Web (with [Robert Cailliau](http://en.wikipedia.org/wiki/Robert_Cailliau) [http://en.wikipedia.org/wiki/Robert\_Cailliau])
- The [Internet Engineering Task Force \(IETF\)](http://www.ietf.org/) [http://www.ietf.org/]
  - mainly Internet standards, but also responsible for URIs and HTTP

# Course Topics

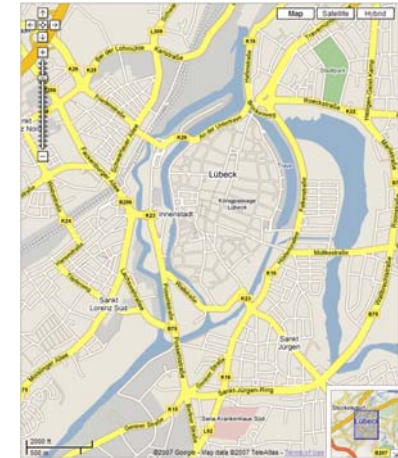
## Course Overview

(14)

- 50/50 mix of foundations and applications
- Weeks 1-9: Web architecture foundations
  - Web pages (HTML, CSS, Forms)
  - communications (security, access control, cookies)
  - multimedia, content types, language support, ...
- Spring break (week of 3/23)
- Weeks 10-16: Web-based information management
  - Web-based information management (Google Docs, Flickr, delicious, ...)
  - scripting and Ajax (mashups for combining services)
  - where is my information? (server-side, client-side, cloud)

## What is Architecture?

(15)



## Architecture vs. Design

(16)



# Getting Started

## Web Hosting

(18)

- What's necessary to be on the Web?
  - Web server *responding to browser requests*
  - *file system* for storing documents (HTML, CSS, images)
  - Web pages can also be *generated dynamically*
  - bigger amounts of data should be stored in a *database*
  - The browser might pull in resources from *other servers*
- Web hosting typically provides support for (some of) these features
  - storage space which can be accessed by users and the Web server
  - support for server-side programming (PHP, Ruby, Python, ...)
  - database servers (MySQL) and access through scripting
  - users might outsource some content (Flickr, YouTube, ...)



## ISchool Web Server (19)

- Computing services for ISchool staff and students
  - accounts for identification and authentication
  - resources in the form of hardware and services
- Services you will need for this course
  - storage space for files which can be accessed via the Web
  - support for transferring files from and to that storage space
  - server-side features for executing code on the server
  - optionally, access to a database system for storing data

## Account Setup (20)

- Use your code to set your password
- Accounts are important for file storage and Web access
- File transfer using FTP and [FileZilla](http://filezilla-project.org/) [http://filezilla-project.org/]
- First assignment involves setup of the Web space
  - setup the account to get access to the ISchool server
  - download examples from the assignment page
  - edit the examples
  - upload to your Web space
  - validate by accessing with a browser
- Assignments 2-5 will mainly revolve around Web pages
  - HTML, CSS, Forms, and access control

