Introduction to Web Design

Introduction and Overview
What is the Internet?

A computer network consisting of a worldwide network of computer networks that use standardized network protocols to facilitate data transmission and exchange.
1964, On Distributed Communications
Centralized, Decentralized, and Distributed Networks

A decentralized network represents a less-hierarchical structure than a centralized network. Complete reliance on a single point is not required.

The foundational concept of decentralized networks would be deployed in tandem with what came to be known as “packet-switching,” which entails breaking up communications into small parts, sending them along, and reconstructing them at the end.
Networks

Academic Networks

Business Networks

Home Networks

Mobile Networks

Network Providers

Simplified model of the internet. It's made of routers.
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Routers

Introduction and Overview

A router is a networking device that relays data packets between computer networks.

Routers direct the flow of Internet traffic so that packets arrive at their appropriate destination.

The address to which data is sent is normally in the form of a numeric IP address (IP stands for Internet Protocol).
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Internet Access from the 1980s to the Present

Introduction and Overview

- Personal Computing
- Portable Computing
- Mobile Computing
- Ubiquitous Computing
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Personal Computing

Introduction and Overview

1981, IBM 5150
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Portable Computing

1993, Apple PowerBook 500 Series
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Mobile Computing

2007, Apple iPhone
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Ubiquitous Computing

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Raspberry Pi, Apple Watch, Google Home
The Internet and the World Wide Web

The Internet and the Web are separate but related things. The Internet is a massive network of networks, a networking infrastructure that connects computers globally.

The Web is a way of accessing information over the medium of the Internet, an information sharing model that is built on top of the Internet.

The Web is just one of the ways that information can be disseminated over the Internet but it is the one we are focused on in this class.
## Overview

This lecture-based course provides a comprehensive foundation in design and code for the open Web. Primary topics include HTML markup, CSS style, Web graphics, and browser-based interactivity. Computer principles, media theory, and historical context are also woven into class discussion.

In addition to coding with HTML, CSS, and JavaScript, various software applications are used to create media optimized for the Web. As Introduction to Web Design and Computer Principles moves through a lot of material over the course of one semester, any time a question or concern arises let me know and I’ll be happy to work with you.

## Grading and Exams

Your greatest reward is the knowledge and experience that you receive by taking the course. You will also receive a grade based on the following rubric.

- Assignments: 40%
- Midterm Exam: 25%
- Final Exam: 35%

Our exam schedule for the semester is as follows.

- Midterm Exam: Tuesday, October 22
- Final Exam: Thursday, December 19, 12:00–1:50 p.m.
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The New Dark Web

Introduction and Overview

In many ways we are experiencing the afterglow of the technological promise of freedom and openness.

Networked tools and digital media still offer lots of possibilities but also significant problems.
“A new Decentralized Web has the potential to be open, empowering users around the globe to control and protect their own personal data better than before.”

—Decentralized Web Summit
Digital Media Storage

On/Off

Electrical impulses (+5v / -5v)

- Single 0 or 1 = 1 “bit”
- A group of 8 bits = 1 “byte”
- 1 million bytes = 1 “megabyte”
- 1,024 megabytes = 1 “gigabyte”
- 1,000 gigabytes = 1 “terabyte”
Megabits per second

Testing download...
Internet connection speed is normally measured in megabits. Megabits (Mb) are not the same as megabytes (MB).

8 bits = 1 byte; therefore, a megabyte is 8 times the size of a megabit.

For fixed broadband connections, the average download speed in the United States is around 96 Mb/second; average upload speed is around 33 Mb/s.

For mobile connections, the average download speed in the United States is around 34 Mb/second; average upload speed is around 10 Mb/s.
Microprocessor Transistor Counts 1971–2011 and Moore’s Law
Moore’s Law and Computer Processor Speed

The number of transistors that can be placed inexpensively on an integrated circuit doubles every two years.

The number of transistors is closely connected to processor speed, memory, etc.

Computer processor speed has doubled approximately every two years.

Moore’s Law seems to be plateauing but has held steady for the past 40 years.

Digital media is in a constant state of flux.
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HTML 5
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Introduction and Overview
Introduction to Web Design

Introduction and Overview

Name

Email

Website

Submit
Introduction to Web Design

Introduction and Overview
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Course Content

Introduction and Overview

- Unix command line
- HTML
- CSS
- Raster and vector web graphics
- Design and accessibility
- Website layout and responsive design
- Interactivity with JavaScript
- Web forms
- Web audio and video
- Web hosting and domain names
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Guiding Principles: Open Source

Introduction and Overview

• Anyone is free to use it
• Usually free of charge
• Source code is made available
• Can be modified and redistributed
Guiding Principles: Accessibility and Net Neutrality

“When we talk about accessible code, what we are really talking about at its core is inclusiveness. . . . Inclusive development means making something valuable, not just accessible, to as many people as we can.” —Carie Fisher

Net neutrality is the principle that Internet service providers should enable access to all content and applications regardless of the source, and without favoring or blocking particular products or websites.
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The formal, non-proprietary standards and technical specifications that define and describe aspects of the World Wide Web and its interoperability.

These include:
- HTML5
- CSS
- JavaScript
- SVG
- WOFF
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Introductions

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Attendance

You are expected to come to all classes and arrive on time.

Please let me know in advance if you will be out for any reason.

Please let me know if you miss class due to illness.

Computers are welcome in class but not required.

If you ever feel overwhelmed or need extra help, I will be available to you.
Introduction to Web Design

Textbook


5th Edition

Jennifer Robbins

Assignments

There will be nine assignments over the course of the semester.

Details of each will be posted on the class website.

All assignments are due before class and should be submitted via NYU Classes.

Do your best to turn work in on time; 10% will be deducted for each class day after the deadline.

No assignments will be accepted after three classes or after the final exam.
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Grading Rubric

Introduction and Overview

Assignments: 40%
Midterm exam: 25%
Final exam: 35%
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For Next Class

Introduction and Overview

Review class website

Read chapter 2 of *Learning Web Design*: “How the Web Works”