

Information Technologies

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Lecture 1 - Overview

Course Overview

- Course Goals
- In a Nutshell
- Gameplan

Software Tools – To Dos

- Image editing | Screencast | Surveys | Google Services

Multimedia Basics

- Image Formats

Lectures – Week 1 Content

<http://comminfo.rutgers.edu/~aspoerri/Teaching/InfoTech/Lectures.html#week1>

Course Goals

1. Record Screencasts and Work with Digital Media

images, audio and video, and perform file conversions.

2. Utilize Web Services

such as Online Surveys, Google Drive & Analytics or Web APIs, in the design and development of information services.

3. Create and Upload HTML Web pages

standards compliant and contain relative and absolute links, images and embedded video or data widgets.

4. Design external Cascading Style Sheets

Control layout and visual appearance of Web pages.

5. Design Responsive Layouts

Control layout and visual appearance of Web pages on different display devices. Create responsive page layouts using front-end frameworks, such as Bootstrap.js.

Course Goals

6. Understand Key Programming Concepts

7. Understand Basics of JavaScript

create simple or customize existing code examples.

8. Understand Basics of PHP

create simple and useful scripts to create dynamic web pages.

9. Create Database Application using MySQL

information organized into tables, data entry form, controls for filtering contents and dynamically display results.

10. Evaluate Open Source Software

understand advantages and disadvantages in library or business settings.

Individual Exercises

Exercise 1: HTML – Create Information Resource

Due Week 3 | Rev Week 6

Exercise 2: CSS – Enhance Information Resource with CSS

Due Week 5 | Rev Week 8

Exercise 3: Responsive Layouts – Enhance Information Resource using Responsive Layouts

Due Week 7 | Rev Week 10

Exercise 4: Open Source, Forms & JavaScript –

Evaluate Open Source Info Tech Tool, Create & Validate Form and use JavaScript to enhance user experience

Due Week 10 | Rev Week 13

Exercise 5: Forms, MySQL and PHP Basics – Create Form and PHP Page to Record Form Data in MySQL Table and to Display Form Data

Due Week 12 | Rev Week 15

Term Project and Discussions & Quizzes

Term Project: Dynamic Web – Create Dynamic Website using HTML, CSS, JavaScript, PHP and MySQL

Builds what you learned in the Exercises and incorporates Ex2, Ex3, Ex4 and Ex5 and parts of other exercises.

Due Week 15

Discussions – Three Graded Discussions

Week 2 | Week 8 | Week 13

Quizzes – Open Book and Best of 2 out of 3

Week 6 | Week 10 | Week 14

Section Instructors may make changes and additions

In a nutshell

Learn

Information Technology

Web Technology

Fundamentals

→ Able to Create

Web pages | Forms | MySQL tables | Dynamic pages

→ Able to Troubleshoot

→ Able to Learn more advanced skills

Copy → Paste → Understand → Customize

Gameplan

Course Website

<http://comminfo.rutgers.edu/~aspoerri/Teaching/InfoTech/Home.html>

– **Schedule**

<http://comminfo.rutgers.edu/~aspoerri/Teaching/InfoTech/Schedule.html>

– **Lectures**

<http://comminfo.rutgers.edu/~aspoerri/Teaching/InfoTech/Lectures.html>

- **Lectures:** Narrated Lectures | Video Demos | Handout | Step-by-Step files
 - Section Instructor **may create** additional content
- **Readings:** W3 Schools and interactive exercises
- **Demos:** LyndaCampus video course

– **Requirements**

<http://comminfo.rutgers.edu/~aspoerri/Teaching/InfoTech/Requirements.html>

– **Exercises**

<http://comminfo.rutgers.edu/~aspoerri/Teaching/InfoTech/Exercises.html>

- Section Instructor **may change** content of exercises and their grade percentage

Software Tools – **To Dos**: Image Editing + Screencasting

Image Editing

- **pixlr.com**
 - **Task**: Find image (Flickr) | Crop it | Thumbnail | Save it → **DEMO**

Screencasting

- **ScreenCast-O-Matic** - simple screen recorder (free and pro)
 - **Task**: Install | Create Screencast → **DEMO**
- **YouTube** – video sharing platform (free and premium)
 - **Task**: Create account | Upload screencast → **DEMO**

Software Tools – **To Dos**: Survey + Google Spreadsheet

Survey Tools

- **surveymonkey.com**
 - **Task**: Create account | Create Survey for Ex1

Google Account

<https://www.google.com/accounts/>

- Google Drive | **Google Docs** | Google Analytics
 - **Task**: Create **Google spreadsheet** |
Attach link to text “link” | Set Share Settings → **DEMO**

Multimedia Basics – Web Graphics & Color Representation

Bitmapped or Raster Graphics

- Paint and Photo Programs

Object or Vector-based Graphics

- Draw and Illustration Programs
- Use Mathematical Representation for Shapes
- Used to Create Original Artwork

RGB Color used by Monitor

- Direct Light, Not Reflected

Indexed Color

- Limited Selection of Colors: up to 256 colors
- To Reduce File Size
- Color not in the Palette is Approximated and “Dithered”

Key Image File Formats

GIF

- Cross Platform & **Lossless Compression**
- Indexed Colors: few GIFs need all colors, reduce it manually
- **Transparency** (so no white box around graphic)
- Interlacing & Progressive Download
- Create **Animations**
- **Best for**
 - Images with **Large Areas of Solid Color**, Simple Illustrations
 - Small Photos or thumbnails

JPEG

- Cross Platform & **LOSSY Compression**
- Progressive JPEG
- **No transparency**
- **No Animation**
- **Best for**
 - Photos: **Millions of Colors** and Subtle Changes