# CS-365 Internet Programming

## Instructor

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## Office Hours

Monday (2-4) Wednesday, Friday: 1–2:30
Other times by appointment, drop-in, or virtual. Really! I'm here to help you, so stop in.

## Text Book

There is no textbook. Last year we used *Web Programming Step by Step*, by Marty Stepp, Jessica Miller, and Victoria Kirst. It is difficult to find a good textbook for this course because it covers such a wide range of materials all of which change rapidly. Its nice to have a book that consisely covers many of the basics and does so in one place. I think this book captures that even if it only covers a fraction of our topics. I will provide web resource links on katie.

## Goals

- To understand the common technologies used in building web applications today
- To understand how modern web publishing works
- To learn how to learn about rapidly changing technologies
- To become fluent in the Javascript Language
- To understand the mechanisms behind modern web frameworks

## Course Outline

1. HTML
   (a) Functional view of the web
   (b) Creating basic web pages "from scratch"
   (c) HTML 5 Elements
2. Styling Web Pages with CSS
   (a) Presentation -vs- content
   (b) CSS Matching Rules
   (c) Laying out your pages
3. Javascript
   (a) Language fundamentals
   (b) The Document Object Model (DOM)
   (c) Closures
   (d) Prototypes
   (e) AJAX
   (f) JSON
   (g) jQuery
4. CGI Programming
   (a) Generating dynamic web pages
   (b) Processing forms
   (c) GET versus POST
   (d) Baking cookies
5. Midterm Mashups
6. From Webserver to Application Server
   (a) A 10 line webserver in Python
   (b) From static to dynamic
   (c) understanding WSGIref
   (d) Template Systems
7. Authentication
   (a) OAuth
   (b) Oauth2
   (c) Logging in with Facebook
   (d) Logging in with Google
8. Application Servers
   (a) Using the Pyramid Framework
   (b) Using a database
   (c) Node.js
9. Final Project

## Class Requirements:

### Participation

"The teacher's job is to design learning experiences, not primarily to impart information" This is going to be an experiential class, I'll lecture some and try to explain some big picture stuff but, I've learned everything I know in this area by doing stuff. I expect you to be engaged and to ask questions and do stuff. If you stop at the bare minimum of what I ask you to do for any particular assignment you'll be missing an opportunity.

### Homework

You will have at least weekly homework assignments, sometimes more frequently when they are easier.

### Midterm Mashups

The mid-term mashup will be a substantial part of your grade. You will need to design and implement a mashup, then you'll present a demo of it to the class when it is all done. Many of today's successful web businesses started out as simple mashups. If you desire you can work with one other person on the mid-term.

- Create a web page/pages that utilize one or more Web APIs
- Built with Javascript, CSS, and HTML
- Examples of available APIs
- Google Documents, Maps, Calendar, etc.
- Twitter, Facebook
- Amazon, Evernote, Dropbox, RTM, tweedledo
- Movies, Music, Books, ...
- 1000's of others
- Combine one or more of these web services to create your own cool service

### Final Project

Later in the semester you will need to devise a final project. This project will make use of the web development framework we've used in class, or you could venture out and use one of the many other web frameworks (Django, Ruby on Rails, Groovy on Grails, Google App Engine, etc.) You can work in a group of up to 3. You will need to write up a formal proposal for this project and have it approved by me before starting. You and your group will present the project to the class in the last week of the course.

### Grading

```
30%   Midterm Mashup
30%   Homework Assignments
30%   Final Project
10%   Class participation
```

The grading scale is:

```
90 -- 100   A
80 -- 89    B
70 -- 79    C
60 -- 69    D
0 --  59    F
```