

School of Communication University of Miami

CIM593/693

Dynamic Data

Section Q, Tuesday and Thursday 12:30 – 1:45, Room: Communication Intl 2054

Fall Semester 2019

Prof. William Jattin

Office Location: Newman Alumni Center 6200 San Amaro Dr. #400

Office Hours: Monday and Wednesday 3 to 4 or by appointment

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SYLLABUS

Course Description and Purpose: This course teaches data analysis through the development of interactive web applications. The course focuses on communicating through computer programming. Students will learn to build and use databases as a primary source and explore data as content. For this course students will be required to build custom software solutions through web programming languages that utilize third party APIs to interpret, analyze and manipulate data.

Course Prerequisites: JMM 341 or CIM 111 or CIM 440 or CIM 640

Materials Fees: None

Assignments/Coursework: Due date of assignments will be specified in class.

| | |
|---|---|
| Practice (10 total) Consists of small scripts covering the day's lesson | 50 Points total 5 points each |
| Midterm Project Create an interactive web application. The application should take users through multiple pages and responses. The user should ultimately be given a summary of their experience. | 20 points total |
| Midterm and Final Progress Report (2 total) A short report on the work done for your midterm and final project. | 10 points total 5 points each |
| Code Plan (2 total) Pseudo code and logic breakdown of what you want your application to do | 10 points total 5 points each |
| Final Project An awesome interactive web application that mashes up multiple APIs and/or data points | 20 points total |

In addition, graduate students in this class are required to write a survey paper on the current state of PHP Language, frameworks, and applications. Graduate students will write a survey paper and share their findings with the class in a 10-minute classroom presentation.

Texts and Resources Required:

- **Beginning PHP:** Master the latest features of PHP 7 and fully embrace modern PHP development by David Carr and Markus Gray ISBN-13: 978-1789535907 ISBN-10: 1789535905
- **Bootstrap Reference Guide:** Bootstrap 4 and 3 Cheat Sheets Collection (Bootstrap 4 Quick Start) by Jacob Lett
- **Laptops:**
Not required but it's highly recommended that you bring yours to class. We will use software that is both OS X and Windows compliant.
- **Software:** Atom, FileZilla (or cyberduck) and XAMPP

Recommended Resources:

- <https://www.lynda.com>
 - o Bootstrap 4 layouts: Responsive single-page design
 - o MySQL Essential Training

Grading/Evaluation:

Each assignment is worth up to a given amount of points. Assignments will be graded on their thoughtfulness, ease of use, beauty and effort.

| <i>Grade</i> | <i>Points Required</i> |
|--------------|------------------------|
| A | 95 |
| A- | 90 |
| B+ | 87 |
| B | 84 |
| B- | 80 |
| C+ | 77 |
| C | 74 |
| C- | 70 |
| D | 60 |
| F | 0 |

Attendance Policy: Students are expected to attend each class and be on time. All students are responsible for material covered in the classroom regardless of his/her presence. Three or more unexcused absences will result in the deduction of one complete letter grade. Doctor's appointments, job-related activities, interviews, study sessions or other meetings during class are not an excused absence.

Religious Holy Day Policy: It is the student's obligation to provide faculty members with notice of the dates they will be absent for religious holy days, preferably before the beginning of classes but no later than the end of the first three (3) class days. Absences due to observance of religious holy days not pre-arranged within the first three class days may be considered unexcused and there is no obligation to allow any make up work, including examinations. Missing a class due to travel plans associated with a particular religious holy day does not constitute an excused absence. The University's complete Religious Holy Day Policy can be found in the current *UM Bulletin*.

Honor Code and Plagiarism Statements: Students enrolled in this course are expected to abide by the University of Miami Honor Code. The purpose of the Honor Code is to protect the academic integrity of the University by encouraging consistent ethical behavior in assigned coursework. Academic dishonesty of any kind, for whatever reason, will not be tolerated.

No honest student wants to be guilty of the intellectual crime of plagiarism, even unintentionally. Therefore, we provide you with these guidelines so that you don't accidentally fall into the plagiarism trap.

Plagiarism is the taking of someone else's words, work, or ideas, and passing them off as a product of your own efforts. Plagiarism may occur when a person fails to place quotation marks around someone else's exact words, directly rephrasing or paraphrasing someone else's words while still following the general form of the original, and/or failing to issue the proper citation to one's source material.

In student papers, plagiarism is often due to...

- turning in someone else's paper as one's own
- using another person's data or ideas without acknowledgment
- failing to cite a written source (printed or internet) of information that you used to collect data or ideas
- copying an author's exact words and putting them in the paper without quotation marks
- rephrasing an author's words and failing to cite the source
- copying, rephrasing, or quoting an author's exact words and citing a source other than where the material was obtained. (For example, using a secondary source which cites the original material, but citing only the primary material. This misrepresents the nature of the scholarship involved in creating the paper. If you have not read an original publication, do not cite it in your references as if you have!)

- using wording that is very similar to that of the original source, but passing it off as one's own.

The last item is probably the most common problem in student writing. It is still plagiarism if the student uses an author's key phrases or sentences in a way that implies they are his/her own, even if s/he cites the source.

Course Topics Outline

Week 1 - Introduction to Web (Aug 20th – 22nd)

- Git/Server model Overview
- Database server model
- Atom setup and configuration

Week 2 - Introduction to Front-End (Aug 27th – 29th)

- Basic html/CSS
- HTML Form overview
- Building Forms
- Submit Forms
- GET and POST requests overview (client side)

Week 3 – Introduction to Server-Side scripting (Sept 3rd – 5th)

- Setting up the Work Environment with XAMPP
 - Apache overview
 - MySQL overview
 - PHP overview
- Variables and Data Types (String, Arrays overview, Objects overview)
- Sessions
- Cookies

Week 4 – Handling Forms (Sept 10th – 12th)

- Submit Form
- GET and POST requests overview (server side)
- Retrieve Response using PHP
- Manipulating Form data

Week 5 – Relational Databases and SQL (Sept 17th – 19th)

- SQL Overview
- Database design overview
- Creating Tables
- Working with Data Types
- C.R.U.D

Week 6 – PHP, MySQL and ORM (Sept 24th – 26th)

- The Object-Relational Model
- PHP – MySQL Operations
 - Using MySQLi
 - C.R.U.D

Week 7 – Developing Applications I (Oct 1st – 3rd)

- Midterm Discussion/Proposal
- CSS, Styling, Introduction to Bootstrap

- Combining PHP and HTML

Week 8 – Developing Applications II (Oct 8th – 10th)

- File Manipulation (Create, Upload, Delete)
- Working with images

Week 9 – Midterm Workday (Oct 15th - Fall Recess)

Week 10 – Introduction to APIs (Oct 22nd – 24th)

- API overview
- XML overview
- JSON overview

Week 11 – Working with API Data (Oct 29th – 31st)

- Final Project Discussion
- Accessing APIs
- Importing Data

Week 12 – Working with API Data (Nov 5th – 7th)

- Displaying Data
- Integrating Applications

Week 13 – Creating Dashboards (Nov 12th – 14th)

- Intro to Charts.js
- Twitter API
- Integrating Data from various sources

Week 14 – Final Workshop (Nov 19th – 21st)

Week 14 – NO CLASS (Nov 26th – 28th) Thanksgiving Recess

Week 15 – Final Week (Dec 3rd – 5th)

- Final Workshop
- Final Presentation Dec 5th

Reading and Screening Lists:

Change by Design, Revised and Updated: How Design Thinking Transforms Organizations and Inspires Innovation Mar 5, 2019 by Tim Brown

Think Like a Programmer: An Introduction to Creative Problem Solving 1st Edition by V. Anton Spraul ISBN-13: 978-1593274245, ISBN-10: 1593274246

Student Acknowledgement:

I have received and read the syllabus for **CIM593/693** Section Q, for the Fall semester 2019. I have completed the prerequisite courses listed in the syllabus or have had the professor sign below to certify a waiver of the prerequisites.

Signed: _____

Print Name: _____

Date: _____

Professor Prerequisite Waiver (If needed) _____