Spring 2024

IT 202-008: Internet Applications

Matthew Toegel

Course Number: IT202
Course Title: Internet Applications
Section: 008
Semester: Spring 2024
Date & Time:
008: Mon/Wed 1pm-2:20pm TIER 111
Modality: Face to Face
Credits: 3
Office Hours: *Mon/Wed 10:00am-11:20am (CKB Main floor Lounge/Common Area, appointment necessary)*
General availability via Discord via a provided communication channel
Webex (when needed): https://njit.webex.com/meet/mt85njit.edu

Course Catalog:
Prerequisites: **CS 100** or **CS 113** or **CS 115** or a course in a high-level programming language as approved by department.
This course presents the concepts and software technologies that underline web-oriented, three-tier software architectures and applications. The enabling software mechanism include the markup languages (HTML5 and CSS3) used by browsers, client-side scripting languages and libraries (Javascript and AJAX), web servers and server-side-scripting languages (Apache, PHP, HTTP protocol), and background databases (SQL, MySQL). The course uses a hands-on, guided development approach with substantial assignments to illustrate the fundamental computing concepts systems, and technologies considered and to provide direct experience in their use.

Instructor:
Matt Toegel (matthew.toegel@njit.edu)

Attending Class:

Synchronous:
Class will be held in the rooms and times given per your schedule from the registrar.
Mostly, I'll be sharing my screen with everyone and going over the topics either via the classroom projector or a screen-sharing service. There will commonly be time in class to practice the topic for that day and/or get a headstart on homework.
We'll be using Respondus for exams and everyone should ensure the software runs on at least 1 device (anticipate webcams will be required even in the classroom).

Asynchronous:

Class material will be available each Monday and is expected to be reviewed that week. Assignments may be due at the end of the week or the end of the next week. You'll also have participation assignments each week.

We'll be using Respondus for exams and everyone should ensure the software runs on at least 1 device (webcams will be required).

Both:

It's highly encouraged to ask questions and express any doubts/concerns throughout the course. I want to give everyone the opportunity to raise any concerns or ask any questions to make sure they're on track for the semester.

Make sure to always keep in communication with me if there are any concerns about the class or anything related, this can be done via Discord (preferred), email, Canvas Inbox, etc.

Academic Integrity:

The work done is expected to be your own, any group work should clearly distinguish ownership of tasks. Use of snippets/material from others should be kept to a minimum and the source should be accredited where applicable.
That being said, please also note the below:

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:
http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. **Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university.** If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu" Any violations of the NJIT Honor Code will be brought to the attention of the Dean of Students.

Overview:

This course will discuss concepts and implementations of a web application covering the frontend, backend, and data layers. Topics will range from markup and styling using HTML5 and CSS3, frontend/client-side scripting using JavaScript and jQuery (with usage of AJAX), backend/server-side scripting using PHP running on Apache, and data storage using MySQL. This course will be heavily hands-on with a milestone approach for a final project. Class

participation and questions are strongly encouraged. Git will be heavily used for recording work and submitting assignments on Canvas.

Outcome:

At the end of the course, each student will have the skills and knowledge to build and deploy a full-stack web application. Experience will include use of version control via git/github which will be used to record the progress of an individual project (per student). The project should make for a good portfolio piece and/or a significant stepping stone for future classes.

Assignments:

Each week there will be coding samples related to the current week's topics. There will also be supplemental online resources as well as recordings. There will be a semester-long project that each student will incrementally develop during the semester as new topics are learned (a set of requirements/objectives will be given via a Proposal document). The project will be based on an agreed-upon proposal and the material covered in class. During the semester there will be milestone deliverables for groups of features from the project. The milestones will cover the gist of the features; there commonly is some time between the last milestone and the final demo/deliverable where the remaining features can be implemented and/or cleaned up. Projects may have a chance for extra credit based on surpassing the minimal requirements of the proposal at the discretion of the instructor.

Illustrative Schedule

This schedule is a guideline and is subject to change to fit the particular instance of the class. All topics, in general, are planned to be covered. Some may have more focus than others and per class interest, other topics may be included. (This has been readjusted into modules that'll be learned, some modules will cover material outside of their immediate scope since this is a Full-Stack course)

Modules: (Each module comes with homework/practice and a quiz/quizzes.) Modules may not directly correspond to Week #s, some may span multiple weeks, and others may be covered together in a single week.

Module 1: Class Overview / Git & Github / Workspace Setup
Module 2: PHP Intro / JS Intro / Git Branch Organization
Module 3: HTML Intro / Forms Intro / CSS Intro / Selectors
Module 4: SQL Intro / Project Options and Setup / Start Project Topics (Login/Registration)
Module 5: PHP Templating / Regex / Project Topics
Module 6: User Authorization / Dynamic Content
Module 7: Ajax / Project Topics / Bootstrap
Module 8: jQuery / Project Topics
Module 9: Project Topics / Pagination

Module 10: Project Topics and Final Deliverables/Demo

Topics Covered in Modules (roughly in order of learning):

- GIT and Environment work
- PHP Intro / DB Connectivity
- PHP Sessions / Cookies
- PHP Function Design / Built-Ins / Magic Variables
- SQL Intro
- Basic HTML / Basic CSS
- JavaScript / Ajax / Client-side Validation
- HTML5
- CSS Library (Bootstrap 5)
- In-Depth SQL Design / Usage
- JQuery (Selectors / Ajax / Dynamic Content)
- Security Topics (SQL Injection / Sanitization / Etc) - Covered throughout related topics

Illustrative Schedule (Week format)
The midterm will be after Module 4 material
Milestones will be due at intervals after Module 4

Grading:

Exams / Tests will be graded out of 100 points.
Quizzes will be graded out of 10 and will typically have only one attempt per quiz
Projects / Assignments will be graded out of 10. Some items may have opportunities for extra credit which will be determined per assignment and at the discretion of the instructor.
All points will be converted to a final percentage and letter grade at the end of the semester. Canvas will already have the weightings applied.

Grading Breakdown:

Quizzes: 15%
Assignments: 10%
Participation/Attendance: 5%
Midterm: 20%
Milestones: 25%
Final Project Deliverable (25%):
    Completed Project (Last Milestone and remaining features)
    Final Demo

Grading Scale:

A	100 % to 89.5%
B+	< 89.5 % to 84.5%
B	< 84.5 % to 79.5%
C+	< 79.5 % to 74.5%
C	< 74.5 % to 69.5%
D+	< 69.5 % to 64.5%
D	< 64.5 % to 59.5%
F	< 59.5 % to 0.0%

Materials/Technology:

Heroku for code deployment (we'll use two instances [dev and production])

Est cost: $5/month or free with GitHub student developer pack ($156 credit for one year)

A database will be provided and you'll get your own personal credentials.

Command Line / Terminal (via Visual Code & git bash (or terminal for Mac))

PHP / JavaScript / HTML / CSS / jQuery / Bootstrap

Online Resources Provided (articles and videos)

GitHub/git

Visual Code - MySQL Client Extension

Visual Code (IDE)

Late Policy:

All deliverables will be eligible for a 5% penalty per day late. Typically this will be controlled by Canvas.

Late assignments will automatically be marked as 0 by Canvas and will be pending until they've been graded.

Missed Exams/Quizzes will result in a 0.

If you are going to miss a class/material and cannot hand in an assignment, it's your responsibility to let me know as soon as possible so the situation can be handled.

There also will be no make-up exams (except, at the discretion of the instructor in the case of a documented medical or family emergency from the Dean of Students).

For any emergency please reach out to the Dean of Students so they can send out an official notice.

Attendance Policy:

Attendance is mandatory and will be recorded each class.

For **synchronous** online sessions, make sure you login with your NJIT id so it's properly recorded.

For **face-to-face** sessions, please follow the in-class instructions.

For **asynchronous** sessions, make sure you do the participation assignments on time.
Having more than 4 unexcused absences will result in an Academic Warning Notice. An absence can be excused via a note from the Dean of Students.
Otherwise, refer to the NJIT Attendance Policy at https://catalog.njit.edu/undergraduate/academic-policies-procedures/ Scroll down to "Attendance Policy"

Syllabus is subject to change, attend class to stay current.