IT 490-101: Systems Integration

Greg Kotzas
Systems Integration

Fall 2019 Syllabus

Instructor: Greg Kotzas
Course: IT-490-101
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Office: MIXR Lab, 3rd floor of GITC,
Office Hours: Wednesday 12:00-2:00 Thursday 1:00-2:00

Academic Integrity

The NJIT Honor Code will be upheld at all times. The work you do and submit is expected to be the result of your effort only. You may discuss the high level (general) solution of a design problem, however, cooperation should not result in one or more student having possession of copied graphics, code, or any other project element created by another student. Any violations of the NJIT Honor code will be brought to the immediate attention of the Dean of Students.

Objective

This course will be an intensive project based course designed to leverage the breadth of your background in Information Technologies. You will work, in a group, on an extensive project throughout the semester. This class will give you ample opportunity to refresh your understanding of the core information technology skills of system administration, network administration, database administration, software engineering, graphic design, and full stack web development. Furthermore, this class will give you the opportunity to become a domain expert in one or more of these areas for your team.

Grading

- Participation: 5%
- Milestones: 5%
- Project Proposals: 5%
- Change Log: 10%
- Mid-Term Exam: 15%
- Mid-Term Milestone: 25%
- Final Project: 25%
- Final Exam: 10%

Course Materials

- VirtualBox
- Ubuntu 18.04 LTS image
- A Github Account
- Trello Account
- Discord account
- A network router (optional, but recommended)
Additional Resources
The following web pages will be very helpful while working on projects:

- Moodle - Be sure your credentials are up to date
- Stack Overflow - Your new home
- Google - First stop on debugging

Submission Criteria
Project Proposal: The proposal functions as our contract for your project. You put forth the vision for your project and we will discuss together what will be expected at grading time. You are to post a PDF of your design document to moodle. During the project proposal meeting you will bring one paper copy that we will mark up with notes. Specific deliverables will agreed upon and posted to your moodle project thread. This is how your project will be graded. Without an approved proposal your project cannot be graded (and will default to a 0 ).
You are required to present your projects in class as part of the project deliverables.

Late Policy
Any projects that are submitted late will have a penalty of 1 point (of its percent value towards your final grade) per day late. No exceptions.

Project Guidelines
You and your group are to identify a third party data source and build a service based upon that data. An example may include sports statistics, server status, market data, etc. It can be any source as long as it is legal to use and not generated by the team. You will be simulating a multiple server cluster and setting up basic networking, communication, and security for your cluster.

Course Topics
Software as a service
Project Management
ETL
Messaging Layers
Server Side Development
Change Management
Disaster Recovery
RabbitMQ

Course Milestones
Week 1: Introduction
Week 2: Milestone - Communication Layer Demonstration
Week 3: Project Proposals Due / Meetings Begin
Week 4: Milestone - Centralized Logging Functional
Week 5: Milestone - User Authentication Functional
Week 7: Midterm Milestone Due / Midterm Exams
Week 9: Milestone - 3 Tiered Cluster Due
Week 12: Milestone - Deployment System Functional
Week 15: Final Exam / Final Project Presentations / Change Logs Due

Syllabus subject to change, attend class to keep up to date.