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Fall 2019

IT 610-101: Systems Administration

Ryan Tolboom

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IT610 Systems Administration

Fall 2019 Syllabus

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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 a hands on project intensive exploration of the advanced topics in systems administration. In addition to the core competencies administering a linux environment, students will learn about the best practices supporting a system or multi-server system in a production environment. Students will work on one local virtualized server for the midterm project and a cloud based multi-server setup for the final project.

Grading

- Project Proposals : 10%
- Exercises : 15%
- Midterm Exam : 15%
- Midterm Project : 20%
- Final Exam : 20%
- Final Project : 20%

Course Materials

- [VirtualBox](#)
- [Ubuntu Server 18.04 LTS image](#)
- A [Github](#) Account
- [AWS](#) account (Sign up with the .edu address for free credits)

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 submit a project presentation video as part of the project deliverables. It will be shown in class.

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

Each project will be given a set of common deliverables that all student projects must meet for credit. Individual project deliverables will be settled upon after submission of the project proposal.

Course Topics / Milestones

Week 1: Introduction / Unix Systems / Creating the Development Environment

Week 2: Systems Administration Best Practices / Project Brainstorming / Proposal Formatting

Week 3: Package Management / Midterm Project Proposal Review

Week 4: File System Support / Change Management

Week 5: Backups / Disaster Recovery

Week 6: Midterm Exam (in person or via approved proctor)

Week 7: Midterm Project Presentations Due (Video Submission)

Week 8: Final Project Proposals Due

Week 9: Load Balancing / High Availability

Week 10: Virtualization / Cloud Computing

Week 11: Automating Deployment

Week 12: Containers

Week 13: DevOps

Week 14: Final Exam (in person or via approved proctor)

Week 15: Final Project Presentations Due (Video Submission)