IIT School of Applied Technology
ILLINOIS INSTITUTE OF TECHNOLOGY

Department of Information Technology and Management

ITMO 556 Syllabus

Intro to Opensource OSes

Fall 2019

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Online: Via *skype: jeremy.hajek*

Course Catalog Description: This course will cover the fundamental concepts and philosophy behind Free and Open Source Software (FOSS). The course will discuss open source and free software licensing; open source business strategies and impact; FOSS utilization in the enterprise; and development methodologies. Students will learn to set up and configure an industry-standard open source operating system, including system installation, and basic system administration; system architecture; package management; command–line commands; devices, filesystems, and the filesystem hierarchy standard. Also addressed are applications, shells, scripting and data management; user interfaces and desktops; administrative tasks; essential system services; networking fundamentals; and security, as well as support issues for open source software. Multiple distributions are covered with emphasis on the two leading major distribution forks.

Prerequisites: NA

Credit: 2-2-3 *(lab courses)* Semester Hours

Course Outcome: Each successful student will be able to discuss the origins of and the philosophy behind Open Source Software; demonstrate foundation knowledge of the Linux operating system;

Course Objectives: At the conclusion of this course, each successful student will able to:

- Describe the origins of Free and Open Source Software
- Explain the philosophy of Free and Open Source Software
- Recall and describe common instances of and use of Open Source Software
- Install, configure and administer an industry-standard distribution of the Linux operating system
- Troubleshoot and resolve Linux installation problems and common system problems
- Understand and install industry standard opensource applications

Lecture Days, Time & Place: Tuesday: 10-11:15 and Thursday 10:00 am to 12:15 pm

Tech Park South room 2030 – Smart Tech Lab
35th and State Street on IIT's Mies Campus, or online via IIT Online.

Directions:
The best way to get to TS-2030 (Tech South) Smart Tech lab is to enter via the tower on 35th street. Swipe

you hawk card at the desk. Take the elevator to the second floor. Exit the elevator and turn left and head north across the bridge to the Tech South building (the walls will turn orange).

Then at the intersection turn left and you will see the Smart Tech Lab directly ahead, if the doors are open the walls will be green with a blue floor.

Schedule of Topics/Readings: ***You should do all readings prior to class.***

Session	Date	Topic	Reading
1	August 20, 22	History of Unix and Linux	Chapter 02
2	August 27, 29	Hardware and Linux Installation	Chapter 03
3	September 3, 5	Desktop Linux and GUIs	Chapter 04
4	September 10, 12	Filesystem, Path, Shell, and File Permissions	Chapter 05
5	September 17, 19	Shell meta-characters, pipes, search and tools	Chapter 06
6	September 24, 26	Introduction to Bash Shell, Linux Editors, and User Profiles	Chapter 07
7	October 01, 03	Writing Basic Shell Scripts	Chapter 08
8	October 08, 10	Midterm Exam	NA
9	October 15, 17	System Administration and systemd	Chapter 09
10	October 22, 24	Init Services, Daemons, Processes	Chapter 10
11	October 29, Oct 31	Creating, Partitioning, and Mounting Filesystems	Chapter 11
12	November 05, 07	Networking, Webservers, and Databases	Chapter 12
13	November 12, 14	Infrastructure and IT Orchestration	Chapter 13
14	November 19, 21	Installing Linux Applications and Language frameworks	Chapter 14
15	November 26	Project Work	Chapter 15
	November 28	**No Class Fall Break**	
16	Final Exam Week of December 2rd-7th Final Examination as per the IIT Final Exam schedule		

Readings/Videos: Readings for the class will be assigned from the textbook as well as in the form of online reading. Online resources and videos will be linked from or embedded in a Blackboard page. It is essential that you do all readings and/or view the videos before coming to class on the assigned date. These materials are a necessary and integral part of the class and will form the basis for any class discussions on the topic.

Course Notes: Links to course lecture notes accompanying each lecture will be provided for each student on Blackboard. Lecture will be using technology apps such as OneNote and Sway. This should be useful if you must miss a class. You should be aware that note taking is encouraged and should help your understanding of the material.

Course Web Site: http://blackboard.iit.edu/

Course Text Book: Text will be provided and is available as opensource here: https://github.com/jhajek/Linux-text-book-part-1

Final Project: The final project will consist of scripting and creation of a detailed project involving all of the parts of the class we have covered. You will provide the source code, and I will run and build your project.

Blackboard: The course will make intensive use of Blackboard (http://blackboard.iit.edu/) for communications, assignment submissions, group project coordination, providing online resources and administering examinations. All remote students will view the course lectures online via Blackboard, and online readings will be found on Blackboard. We will also make use of Private GitHub repos that will be provided to you during your time here at IIT as a student. They are managed by professor Jeremy Hajek and are not an official school resource.

Guest Lectures: Guest lecturers may be featured as part of course topics. When a guest speaker is expected you should make an extra effort to be seated and ready prior to class time. Guest lectures may be in the evening in which case class will not be held during a scheduled morning period. A question & answer/ discussion period will be held at the end of each lecturer's presentation.

Attendance: If you are in a live section of the class and will not be able to attend class, please notify me via email. Live section students who miss a class should always watch the lecture online.

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Assignments: There will be 3 assignments per week: 1 Review Questions on Blackboard, 1 Podcast Q&A, and a Laboratory due each week.

Weekly Labs: Labs will be due by class start the following Tuesday (being assigned on Thursday)

Podcast questions and Review Questions: will be issued on Tuesday of the week and will be due the following Tuesday 11:59 PM (but they are all available from the beginning so you can go ahead if you would like.

Examinations: The final examination will consist of an in-class essay examination measuring course outcomes as discussed above. The examination will be closed-book, closed note, and closed-web.

Academic Honesty:

Plagiarism: All work you submit in this course **must be your own**. You must fully attribute **all** material directly quoted in papers and you must document all sources used in the preparation of the paper using complete, APA-style bibliographic entries. Including directly quoted material in an assignment without attribution is always plagiarism and will always be treated as such by me. No more than thirty-three percent of material included in any paper may be direct quotes. Students have submitted plagiarized material the last six times I have taught this course and **I will not tolerate it**. If you submit plagiarized material you **WILL** receive a grade of **ZERO** for the assignment, an Academic Honesty Violation Report will be filed, and it may result in your expulsion from the course with a failing grade as per the IIT and ITM academic honesty policies. **There is no excuse for not understanding this policy** and if you do not understand it please let me know and I will be happy to discuss it with you until you do. *(Should include assignment or lab collaboration statement as necessary.)*

Grading: Grading criteria for ITMO 556 students will be as follows:

A	*Outstanding work reflecting substantial effort*	90-100%
B	*Adequate work fully meeting that expected of a graduate student*	80-89.99%
C	*Weak but marginally satisfactory work not fully meeting expectations*	65-79.99%
E	*Unsatisfactory work*	0-64.99%

The final grade for the class will be calculated as follows:

In Class Labs	**20%**
Review Questions	**15%**
Podcast Questions	**15%**
Midterm and Final Exam	**40%**
Class Participation and attendance	**10%**

Other Class Resources: Online readings and other class resources may be found at on Blackboard.

Our Contract: This syllabus is my contract with you as to what I will deliver and what I expect from you. If I change the syllabus, I will issue a revised version of the syllabus; the latest version will always be available on Blackboard. Revisions to readings and assignments will be communicated via Blackboard.

Disabilities: Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must obtain a letter of accommodation from the Center for Disability Resources and make an appointment to speak with me as soon as possible. My office hours are listed on the first page of the syllabus. The Center for Disability Resources (CDR) is located in 3424 S. State St., room 1C3-2 (on the first floor), telephone 312.567.5744 or disabilities@iit.edu.