**Professor: Sean Hughes-Durkin**

*Class Room:* Technology South, Room 2033

*Telephone:*  609.416.1031

*Fax:* 312.906.5637

*E-mail:* durksea@iit.edu

*Office:* N/A

*Office Hours:* **By appointment**

**Course Catalog Description:** Students 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:** None  
**Credit:** 2-2-3 Semester Hours

**Lecture/Lab Day, Time & Place:** Monday 5:30pm – 9:05pm, Technology South, Room 2033

**Schedule of Topics/Readings: *All readings should be done prior to class.***

**Class  
Session Date Topic Reading**

1 August 21 **Introduction to Open Source Software** Chapter 1

2 August 28 **Installing Linux** Chapter 2

3 September 4 **Exploring Linux Filesystems (Labor Day – NO CLASS)** Chapter 3

4 September 11 **Linux Filesystem Management** Chapter 4

5 September 18 **Filesystem Administration** Chapter 5

6 September 25 **Linux Server Deployment** Chapter 6

7 October 2 **Working with the BASH Shell** Chapter 7

8 October 9 **System Initialization and X Windows (Fall Break Day – NO CLASS)\*** Chapter 8

9 October 16 **Process Management** Chapter 9

10 October 23 **Administrative Tasks** Chapter 10

11 October 30 **Compression, Backups, and Software Install** Chapter 11

12 November 6 **Network Configuration** Chapter 12

13 November 13 **Network Services** Chapter 13

14 November 20 **Troubleshooting, Performance, and Security** Chapter 14

15 November 27 **Final Exam Review**

16 December 4 **Final Examination (in class closed book/notes)**

**\*Online Midterm Exam**

**Required Textbook:**

Jason W. Eckert Linux+ Guide to Linux Certification*, 4th/ED* Cengage,

ISBN-10: 1305107160; ISBN-13: 9781305107168; eBook Available at: http://www.coursesmart.com/9781305107168

**Course Materials:**

* Fedora 26
* Ubuntu 14.04
* Oracle VirtualBox (https://www.virtualbox.org/)

**Course Objectives:**

Each successful student will be able to demonstrate foundation knowledge of the Linux operating system and will be familiar with knowledge required to pass the Linux+ certification exams from CompTIA. The course will be taught to the current Linux+ objectives (Exams LX0-103 and LX0-104) which are the same as the Linux Professional Institute LPIC-1 level. Exam objectives that are covered in other courses in the ITM curriculum, such as ITMD 440/540 will not be covered in this course. While this course is taught to publish exam standards, it is not an exam preparation course and there is no guarantee or expectation that students completing the course will be able to pass the Linux+/LPIC-1 exams.

**Course Outcomes:**

Students completing this course will be able to:

* Describe the origins of and explain the philosophy 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
* Use and administer Linux as both a server and desktop operating system

**Course Notes:** Copies of the course lecture notes in the form of a PDF of the PowerPoint presentation accompanying each lecture will be provided for each student on Blackboard. 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.

**Readings:** Readings for the class will be assigned from the textbooks; there may be additional reading assigned in the form of online reading. All readings should be done before coming to class on the assigned date, and are *mandatory* and *expected*. Generally, if you do the readings you will *excel* in the course, as the lectures serve as a clarification and explanation of material you should already be familiar with. Completion of reading may be verified by quizzes. Specific readings are assigned by topic above.

**Attendance**: As this is a live laboratory class and demonstrations of operating system configuration and functions are a key part of the class, attendance is critical. If you will not be able to attend class, please notify the instructor via email prior to class time. It is possible to arrange for absences in advance but they must be arranged by discussion with the instructor in advance.

**Labs:** Labs for this class will be guided learning experiences; each lab may include questions to ensure that the necessary skills have been mastered. Specific laboratory problems may be assigned from the textbook. There will be a lab with each lesson; all labs must be completed to receive full credit. Due to the nature of the class, labs must generally be completed in the classroom environment, unless students elect to install and configure Linux on a personally-owned notebook/desktop PC or on a virtual machine on a personally-owned PC. Lab reports will contain answers to any questions and screenshots and will be due at the second class following the assignment. Lab reports will be submitted via the Blackboard assignments page.

**Homework:** Homework may be assigned in the form of questions or problems from the textbook or published on Blackboard. Homework will be submitted via the Blackboard assignments page.

**Late Assignments:** Late submissions are at my discretion and must be requested via email or in person. Any late assignments that are not approved by myself will result in a 0 for that assignment.

**Examination:** The midterm and final examination will consist of multiple choice and true/false questions to demonstrate mastery of the material covered and to reflect preparation to pass a certification exam on this material. Questions will be based on the learning objectives for each topic. The midterm exam is open book on blackboard. The final exam will be closed book in-class.

**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. 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.

**Collaboration**: Students may only collaborate on assignments or projects that are explicitly designated as group assignments or projects. Students submitting work that is identical or in some cases even substantively the same will be asked to discuss the assignment with me. If one student admits to having copied the work, or if there is clear evidence who is guilty, the guilty student will be assigned a grade of zero. If no one admits to the offense or a reasonable determination of guilt cannot be made, each student involved will be assigned a grade of zero. In either case, 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.

**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](mailto:disabilities@iit.edu).

**Grading:** Grading criteria for ITMO/IT-O 456 students will be as follows:

**A** *Outstanding work reflecting substantial effort* 90-100%

**B** *Excellent work reflecting good effort* 80-89.99%

**C** *Satisfactory work* *meeting minimum expectations* 70-79.99%

**D** *Substandard work not meeting expectations* 60-69.99%

**E** *Unsatisfactory work* 0-59.99%

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

Labs **40%**

Chapter Review **10%**

Class Participation **10%**

Midterm Exam…………………………………………………………………………………………………..**20%**

Final Exam **20%**

**Other Class Resources:** Online readings and other class resources are on **http://blackboard.iit.edu.**

**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. Areas with changes will be indicated by a black bar in the right-hand margin of the page.

**Computer Labs:** Class will be held in Technology South Room 2033 at IIT's Main Campus, a lab administered by the IIT School of Applied Technology Technical Services. Each student will be assigned to a particular PC and will use the same system for the duration of the course. Your operating system will be on a removable hard drive which may be available for checkout from the instructor for lab use outside of class meeting times.

**PC Shutdowns:** Please turn off the monitor and properly shut down the computer at the end of each class.

**Computer Use Policies:** Please ensure that you have read and understand the IIT and ITM Network and Computer Use Policies found at **http://www.itm.iit.edu/data/ITMComputerUsePolicies.pdf.**