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**Office Hours:** Rice Campus: Monday 3:00-5:00pm  
Main Campus: Friday 1:00-3:00pm  
Online: Via GoogleTalk (username trygstad) or by telephone to 630.447.9009 or by text message to 630.666.7348

**Teaching Assistant:** Vasilios “Billy” Pappademriou  
**Email:** vpappade@hawk.iit.edu  
**Office:** Main Campus - Perlstein Hall 10 W 33rd St, Room 223  
**Office Hours:** Main Campus: Friday 2:00-3:00pm

**Lecture/Lab Day, Time & Place:**  
Lecture: Tues/Thurs 8:35am to 9:25am, Stuart Building 238, IIT Main Campus, or online via IIT Online.  
Lab Section 01: Thurs 1:50pm to 3:30pm, Stuart Building 112E, IIT Main Campus  
Lab Section 02: Thurs 3:40pm to 5:20pm, Stuart Building 112E, IIT Main Campus

**Course 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:** None  
**Credit:** 2-2-3 Semester Hours

**Course Objectives:**  
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; and be prepared to pass the Linux+ certification exams from CompTIA. The course will be taught to the 2010 Linux+ objectives which are now the same as the Linux Professional Institute LPIC-1 level.

**Course Outcomes:**  
Students completing this course will be able to:  
- Describe the origins of Open Source Software  
- Explain the philosophy of 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  
- Use and administer Linux as both a server and desktop operating system

**Required Textbooks:**  

**Course Materials:**  
- Fedora Virtual Machine on IIT's Virtual Computer Lab (VCL) accessible from MyIIT  
- Fedora Virtual Machine for Oracle VM VirtualBox on 1 DVD (supplied by instructor)  
- Ubuntu Linux 10.04 LTE Virtual Machine for Oracle VM VirtualBox on 1 DVD (supplied by instructor)  
- Fedora DVD (supplied by instructor)  
- Ubuntu Linux 10.04 LTE DVD (supplied by instructor)  
- Miscellaneous Bootable Linux Distributions (supplied by instructor)  
- Oracle VM VirtualBox software @ http://www.oracle.com/technetwork/server-storage/virtualbox/downloads/
**Other Class Resources:** Online readings and other class resources are on [http://blackboard.iit.edu](http://blackboard.iit.edu).

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

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic/Lab</th>
<th>Reading</th>
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<tbody>
<tr>
<td>1</td>
<td>January 13 &amp; 15</td>
<td>Introduction to Free and Open Source Software: Concepts &amp; Philosophy No Lab</td>
<td>Raymond full text</td>
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<tr>
<td>2</td>
<td>January 20 &amp; 22</td>
<td>FOSS Licensing, Strategies, Enterprise Utilization and Development Methodologies No Lab</td>
<td>Online</td>
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<tr>
<td>3</td>
<td>January 27 &amp; 29</td>
<td>Introduction to Linux Lab Intro and Using boot-from-CD distributions of Linux</td>
<td>Eckert Chapter 1</td>
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<tr>
<td>3</td>
<td>February 3 &amp; 5</td>
<td>Installing Linux Installing Linux &amp; Using the BASH Shell</td>
<td>Eckert Chapter 2</td>
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<tr>
<td>4</td>
<td>February 10 &amp; 12</td>
<td>The Linux Filesystems Filesystem Navigation, Commands, &amp; Using vi</td>
<td>Eckert Chapter 3</td>
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<tr>
<td>5</td>
<td>February 17 &amp; 19</td>
<td>Managing Filesystems Directories, Links, File Search &amp; Permissions</td>
<td>Eckert Chapter 4</td>
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<tr>
<td>7</td>
<td>February 24 &amp; 26</td>
<td>Administering Filesystems Device Files, Mounting, Usage &amp; Error</td>
<td>Eckert Chapter 5</td>
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<td>9</td>
<td>March 10 &amp; 12</td>
<td>Advanced Installation Issues Kickstart and System Rescue</td>
<td>Eckert Chapter 6 &amp; Online</td>
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<tr>
<td>8</td>
<td>March 3 &amp; 5</td>
<td>Linux Command Line: the BASH Shell Working with the BASH shell &amp; Shell Scripts</td>
<td>Eckert Chapter 7</td>
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<tr>
<td>10</td>
<td>March 17 &amp; 19</td>
<td>NO CLASS – Spring Break</td>
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<tr>
<td>11</td>
<td>March 24 &amp; 26</td>
<td>System Initialization and X Windows System Boot and Configuring Desktops</td>
<td>Eckert Chapter 8 &amp; Online</td>
</tr>
<tr>
<td>12</td>
<td>March 31 &amp; April 2</td>
<td>Managing Linux Services and Processes Start, Stop, PS, Top and Kill: managing processes and services</td>
<td>Eckert Chapter 9</td>
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<tr>
<td>13</td>
<td>April 7 &amp; 9</td>
<td>Linux System Administration: root Common Administrative Tasks</td>
<td>Eckert Chapter 10</td>
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<tr>
<td>14</td>
<td>April 14 &amp; 16</td>
<td>Software Installation and System Backup Archives &amp; Installing and Managing Packages</td>
<td>Eckert Chapter 11</td>
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<tr>
<td>15</td>
<td>April 21 &amp; 23</td>
<td>Networking Linux Configuring Networking and Network Services; Remote Access</td>
<td>Eckert Chapter 12 &amp; 13</td>
</tr>
<tr>
<td>16</td>
<td>April 28 &amp; 30</td>
<td>Linux Troubleshooting &amp; Security Monitoring and Securing Linux</td>
<td>Eckert Chapter 14</td>
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**Readings:** Readings for the class will be assigned from the textbooks and 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 is 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. Live section students who miss a class should always watch the lecture online.

**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.

**Homework:** Homework may be assigned in the form of questions or problems from the textbook or other assignments as published on Blackboard. All homework will be due at the date specified in the Blackboard Assignment and will be submitted via the Blackboard assignments page.
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 after week 3; all labs must be completed to receive full credit. Labs may be completed in the classroom environment during an assigned lab period using the Virtual Computing Lab (VCL) supplied by IIT's Office of Technology Services, or students may elect to install and configure Linux on a personally-owned notebook/desktop PC or on a virtual machine on a personally-owned PC. Live labs will be held in an OTS-administered computer lab. Students are strongly encouraged to make use of their personally owned computers to access VCL or run Linux instances in Oracle VM VirtualBox. Laboratory reports, which will be brief and will normally only include responses to any assigned laboratory questions, will be due at the second class following the assignment. Attendance at assigned lab periods is not mandatory but submission of completed laboratory reports is required. Lab reports will be submitted via the Blackboard assignments page.

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.

Live Access to Remote Labs: During the lab period scheduled Thursdays 1:50pm to 3:30pm, the instructor will be available to assist in laboratory exercises for online students remotely using Blackboard Connect.

Quizzes: Quizzes are given at the instructor's discretion and will verify that assigned reading has been completed. As they are discretionary, weight of quizzes in grading is also left to the instructor's discretion and will be included in the class participation grade. Quizzes will be announced and will normally be given in the first ten minutes of class time or in a ten minute time slot for online students following posting of the current quiz. You can safely expect that there will be quizzes.

Examination: The final examination will consist of multiple choice, fill-in-the-blank, short answer, and short essay 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 final exam is closed-book/closed-notes and must be completed live in class during the scheduled final exam period or for online students only, in a live exam session proctored by IIT Online.

Academic Honesty: All work you submit in this course must be your own. If it is not, a grade of zero will be assigned 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.

Plagiarism: 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 you will be assigned a grade of zero for the assignment.

Collaboration: 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 for the assignment. 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 for the assignment.

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

A: Outstanding work reflecting substantial effort........................................90-100%
B: Satisfactory work fully meeting meeting expectations........................80-89.99%
C: Substandard work not meeting expectations........................................65-79.99%
E: Unsatisfactory work ...........................................................................0-64.99%

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

Labs...........................................................................................................30%
Final Exam...............................................................................................30%
Homework...............................................................................................20%
Quizzes and Class Participation...............................................................20%

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.

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.