

CMPS 315 - Course Syllabus

I. System Administration. Credit 3 hours. Prerequisite: Computer Science 285. This course teaches skills and concepts that are essential to the administration of operating systems, networks, software, various computing support systems, and system documentation, policies, and procedures. This also includes education and support of the users of these systems.

II. Instructor: Dr. Troy Kammerdiener
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Office Hours: 1:30 p.m. – 4:00 p.m. Tuesday, Wednesday, and Thursday, and by appointment. You are also welcome to just drop by during the day. If I'm here and I'm not on a deadline, I'd be happy to take some time with you.

III. Goals and Objectives:

- To learn how to install and configure a Unix operating system
- To learn how to install and update applications on a Unix operating system, including configuration of some important user services such as email and printing
- To learn how to manage users and groups, as well as best practices for supporting the users (customers) of an organization's computing infrastructure
- To understand how to create and use Unix file systems
- To appreciate the importance of ethics in system administration, and to understand and apply a set of ethical rules in management of a computer system
- To become familiar with a basic set of Unix operating commands and utilities
- To understand the importance of communication and documentation, and use software tools to keep active documentation of system changes and to track and manage customer requests
- To understand the importance of automation, and be able to create scripts and use other tools to automate system management procedures
- To know some basic security measures to take in system administration
- To prepare for possible disasters, including an understanding of backup and restoration of file systems
- To know how to manage system resources, including methods for tracking system metrics
- To apply these skills in the administration of an actual computer system with actual users (customers)

IV. Course Requirements:

A. Required Text and other materials:

Texts: *The Practice of System and Network Administration*, by T. Limoncelli, C. Hogan, and S. Chalup.

Essential System Administration, by Æ. Frisch.

Backup & Storage: Each student must have some storage device on which they can make regular backups of critical class project documentation, source code, and configurations.

Internet Access: Internet access is required for submission of assignments and class communication. Students are expected to check their SELU-provided email accounts, as well as the class web page, at least once every class day, more often if possible. Adequate on-campus labs are provided at SELU with the necessary Internet access, although necessary software may only be available on a limited schedule in special laboratories. If you wish to work on your own computer, consult the instructor for information about required software. If you wish to have Internet access from off-campus, you will have to provide for Internet service at your own expense.

B. Class Schedule and Place:

Tuesday and Thursday, 11:00 a.m. – 12:15 p.m. in Fayard 215.

C. Probable Test Dates:

Test #1 Tuesday, September 23, 2008.

Test #2 Thursday, October 30, 2008.

Final Exam Tuesday, December 9, 2008 from 10:15 a.m. – 12:15 p.m.

- Note: These are only estimated test dates. The actual dates will be dictated by convenient closure of topics, and should be very close to those listed, but this cannot be guaranteed. Any deviation from this schedule however, will be announced at least one week prior to the actual test date.
- D. Projects: There will be a number of projects. Exact requirements and due date will be given with each project assignment. Any deviations to this will be noted in the project specification. Projects which do not fulfill the specifications, whose associated scripts or executables do not execute, or which result in errors or incomplete deliverables, may be rejected, and thus result in a failing grade for the course. Projects which are excessively late (see "Late Assignments", below) may receive no credit. The grades will be averaged to form your project grade. If there are 5 required projects, each one will be worth 7 points of your final score.
- E. NetSAL SSAT Participation: Students will participate in a NetSAL Student System Administration Team to gain real experience providing services and support to real customers. Teams are supervised by the NetSAL Coordinator, and must meet with the NetSAL Coordinator outside of class as necessary to coordinate their service. Team members are expected to coordinate together outside of class to provide system administration services to the customers using their stable server. They should provide timely response to any reasonable customer requests, dividing the work load equitably between team members. Each student will receive a percentile score from the NetSAL Coordinator reflecting their assessed performance on the SSAT. This score will compose 20% of the final course grade.
- F. Group Work: Many of the projects in this class are implemented on your stable server, and thus will be done in groups, usually corresponding to your NetSAL Student Administration Team. All students are expected to participate equally in such group projects. You will be required to keep a work log to substantiate your participation in group projects, and all group members should make sure that they learn all the concepts in the project, since you will probably be tested on them.
- G. Required Reading: There is far too much detail in this course to cover explicitly during class time. Therefore it is important that you keep up with the required reading, indicated in the course outline. The reading should be done prior to the class indicated -- not after, and you will be required to take quizzes over this reading. You will also be responsible for the reading on exams. Unless you are told otherwise, read the entire chapter. The topics mentioned in the schedule are points of special interest -- not a limitation on the reading.
- H. Reading Quizzes: There will be a BlackBoard quiz on each chapter, covering the reading. These are short quizzes, which you may only take one time. Some will be taken in class, and some will be assigned to take on a particular day outside of class. In-class quizzes may only be taken at that time, and **may not be made up** (they function as a participation measure as well as a reading quiz). Chapter quizzes will be given on (or within one week of) the first class day of the week indicated in the course schedule for that chapter. If you have technical difficulties with an outside-of-class quiz, you are expected to notify the instructor the same day, and arrange for a supervised retake within 2 days. All quizzes are expected to be done individually and should not be discussed prior to taking the quiz. Reading quizzes are open book and open notes, but time limits will prevent any serious consultation of such materials. These quizzes all together are worth 15% of your grade in this class.
- I. Attendance Policy: Attendance will be taken each day, as required by the University Regulations. This policy may be found in the Undergraduate Catalog, and you should make yourself familiar with it. In particular, note that excessive unexcused absences are considered 10% of the total classes, which for this semester and class is three (3) classes. According to the University Regulations, this may result in your being withdrawn from class by the instructor. This is not automatic however, so you should consult the instructor if you think you may have been withdrawn from class. Do not assume that you will be automatically withdrawn from class for non-attendance. Even if you are allowed to continue, please understand that your grade will suffer from lack of attendance. You will miss material that is only available in class, and classroom participation is crucial to your success in this class. In the event of an excused absence, you are responsible for providing acceptable documentation and making arrangements for making up for the lack of participation. Every student is responsible for anything covered in class, even if it is not in the text. This includes announcements of assignments or test dates, so if forced to miss class, be sure to contact the instructor and ask to be informed of those announcements.
- J. Withdrawal from Class: The last day you may withdraw from this class without a grade penalty is Friday, October 24, 2008.
- K. Return of Rental Textbooks: The last day to return rental textbooks without a fine is Monday, December 15, 2008.

- L. Accommodation of Disabilities: If you are a qualified student with a disability seeking accommodations under the Americans with Disabilities Act, you are required to self-identify with the Office of Disability Services, Room 111, Student Union. No accommodations will be granted without documentation from the Office of Disability Services.
- M. Class Decorum: Free discussion, inquiry, and expression is encouraged in this class. Classroom behavior that interferes with either (a) the instructor's ability to conduct the class or (b) the ability of students to benefit from the instruction is not acceptable. Examples may include routinely entering class late or departing early; use of beepers, cellular telephones, or other electronic devices; repeatedly talking in class without being recognized; talking while others are speaking; or arguing in a way that is perceived as "crossing the civility line." In the event of a situation where a student legitimately needs to carry a beeper/cellular telephone to class, prior notice and approval of the instructor is required.
- N. Children in Class: It is the policy of the University that the classroom is not a place for children, and that students are not to bring their family members for day care or baby sitting.
- O. Email Communication: University e-mail policy reads (in part) as follows, "[Faculty] Uses of non-Southeastern e-mail addresses for communication with students regarding University business or educational matters are not acceptable...." In compliance with this policy, please use only your SLU e-mail address when contacting me about the course. I will not respond to non-SLU e-mail addresses in any professional capacity. Recall that your SLU e-mail accounts are accessible through the Internet via "Web-Mail" which can be reached from the SLU homepage: <http://www.selu.edu>.
- P. Turnitin.com: In the event that essays or papers are required as part of any assignment in this class, you should be aware that plagiarism will not be tolerated, and may be detected through the use of Turnitin.com. Students agree by taking this course that all required papers may be subject to submission for textual similarity to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Terms and Conditions of Use posted on the Turnitin.com website.
- Q. Cancellations: If you suspect a class cancellation due to weather or any other reason, call my office number at 549-5314. If there is a cancellation, my voice mail will reflect that fact within 2 hours of class time (sooner if possible). If no message, assume that class will be held. I will also try to put a notice on the class web page. I will normally be in class on time. If I am not, you should wait at least 15 minutes before leaving, and someone should check my office to make sure I am not there. If I am unavoidably detained, I will normally call and have the class instructed to either wait, or go home.
- R. Changes in Requirements: Due date changes, test postponements, etc. will be announced in class. In case of emergencies, I may attempt to contact you by phone, so please make sure that I have your phone number, and let me know if it changes. Notices may also be given by email, or on the class World Wide Web page. This syllabus will be posted on the class World Wide Web page, and that copy will always be the official copy, not the paper one received at the beginning of the semester.

V. **Course Outline and Reading Assignments**: Provided Separately.

VI. **Course Methodology**:

- This course will consist primarily of interactive lectures and demonstrations with periodic project assignments to reinforce major points of discussion. Projects will be implemented on a development server provided by the CSIT department.
- Students must learn to work together in groups to do many projects, and to perform regular system administration services for real customers.
- The Internet is used extensively as a communications tool in this class. Announcements, copies of assignments, a copy of this syllabus, and various examples and data files will be available on the class page on the World Wide Web. Announcements of a time critical nature may be emailed to class members. In addition, students will use an Internet-based Concurrent Versions System for management of source code and submission of programming assignments.
- There will be 3 tests to assess individual understanding of the material presented. These tests will be spaced evenly throughout the semester, with the last test functioning as the final exam. All tests will have equal weight.
- Reading assignments are indicated in the course outline. Students should be aware that they will be tested over the contents of their reading, as well as lecture topics. Some things will be in the text but not in the lecture, others will be in the lecture but not in the book. Both parts are necessary for success in this class.

VII. Evaluation Procedure

- A. Make-up Tests: You are expected to arrange your schedule around the dates indicated in this syllabus as much as is possible. Make-up tests arranged **at least one full week prior to the test date** can be obtained:
- to avoid direct conflict with participation in an unavoidable official school-sponsored activity, such as playing in an intercollegiate sporting event (documentation from the sponsor is required)
 - in the event that a test occurs on a day other than those given in this syllabus, for an unavoidable personal conflict (this is at my discretion, but I try to be reasonable)

Make-up tests will be arranged after the test date only:

- in the event of an unexpected and professionally documented medical condition which prevented attendance. If you are experiencing a long term illness, please keep me informed each week of your status.
 - with an excused absence authorization from the Vice President for Academic Affairs. Note that the basic courtesy of advance notification and arrangements are expected if you have advance knowledge of such an excused absence.
 - in the event of the death of an immediate family member (see the undergraduate catalog for specific details).
- B. Late Assignments: Unless specified otherwise, assignments are due at the beginning of class on the date due. Late penalties are 10% per day (including weekends and holidays), with a maximum penalty of 50% off. Assignments turned in more than 7 days late **will not be graded**. Most assignments in this class are projects done on your development server, which will have associated timestamps. Some assignments may be submitted online to a CVS server, and that timestamp will be used for determining appropriate penalties. Physical portions of late assignments must be given directly to the instructor, or to the CS&IT Department front desk worker or secretary for timestamping, and the timestamp should be within one school day of the electronic timestamp. Do **not** just slip them under or in the door, or in my departmental mailbox. No assignments of any sort will be accepted after 2:00 p.m. on the last official day of classes, even if this would result in a failing grade.

- C. Grade Calculation: Your grade will be calculated according to the following point distribution:

30%	Tests (10% each)
20%	NetSAL Student System Administration Team Participation
15%	Reading Quizzes
35%	Projects

Letter grades will probably be assigned by the following chart:

A	B	C	D	F
90-100	80-89	70-79	60-69	0-59

Some grades might be improved above that given in the chart if I feel that an anomalous statistical grouping requires it, but your letter grade will never be worse than that indicated by the chart.

VIII. Academic Integrity:

Learning is a social experience, and I wouldn't dream of trying to change that. Studying with friends, and talking among yourselves about how to attack a problem is important to success in this class. But if you don't do your own thinking -- if you only take from these discussions, and never give -- then you won't understand well enough to perform on tests. That's enough to ruin your grade in this class. Make sure that your work is your own, because you might have to pass a quiz over the content of your assignment to receive credit. **If a project is supposed to be done by a group, it will be specifically announced that way.** And if you need further help, please come see me. I try to be as accessible as I know how. If you can't make my office hours, drop by anyway -- if I'm not covered up with something, I'll be glad to work with you. And if we need to, we can make a special appointment. And if we need to, we can make a special appointment. And remember that you can always leave me a phone message or use email.

More formally, students are expected to maintain the highest standards of academic integrity. Behavior that violates these standards is not acceptable. Examples are the use of unauthorized material, communication with fellow students during an examination, attempting to benefit from the work of another student and similar behavior that defeats the intent of an examination or other class work. Cheating on examinations, plagiarism, and improper acknowledgement of sources in essays and the use of a single essay or paper in more than one course without permission are considered very serious offenses and shall be grounds for disciplinary action as outlined in the current General Catalogue.

IX. Learning Outcomes and Evaluation: A number of Learning Objectives and Program Objectives have been established for this class, and are documented in its official course specification (which should be attached to this syllabus). The success of learning outcomes is measured by surveying students on a random sample of the Learning Objectives in the course specification. In addition, many of these outcomes are also represented in the Program Objectives covered by this course, as detailed below:

e	An understanding of professional, ethical and social responsibilities
<i>Measure:</i> Students are tested over ethical issues for system administrators and users, and are required to write policy statements on ethics.	
d	An ability to function effectively on teams to accomplish a common goal
<i>Measure:</i> Students work in teams on projects and in support of a set of users on a production system, and their team performance is evaluated and assigned a grade.	
c	An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs
<i>Measure:</i> Students write scripts to automate system administration tasks. Some of these scripts are components of graded projects.	
h	Recognition of the need for, and an ability to engage in, continuing professional development
<i>Measure:</i> Students do graded projects which require using learning to use new systems or tools by finding and reading standard professional documentation not available in class texts.	
g	An ability to analyze the impact of computing on individuals, organizations and society, including ethical, legal, security and global policy issues
<i>Measure:</i> Students must write disaster recovery plans which require this sort of analysis. These plans are evaluated and assigned a grade.	
f	An ability to communicate effectively with a range of audiences
<i>Measure:</i> Students must interact with and help solve problems for a set of users who are real people with varying backgrounds outside the immediate classroom context. These users are asked to provide an evaluation of their support experience.	
i	An ability to use current techniques, skills, and tools necessary for computing practice
<i>Measure:</i> This class teaches current techniques, skills, and tools used in system administration, and student progress is evaluated through tests, quizzes, and projects.	