

# Linux System Administration

## ITP377 (3 units)

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**Objective** Students who complete this class will be able to conduct, automate, and schedule basic system administration tasks for a linux system. Gaining a clear understanding of the underlying workings being maintained, they will also be able to evaluate alternatives to the the particular methods and point solutions used in class.

**Concepts** This course covers local and network system administration functions. Configuration files, the foundation of operation and control, are emphasized. The critical ones are studied. Then, local and web-based interfaces to the power of these files will be demonstrated. The most basic functions are user, process, and filesystem administration. Beyond that are specialized responsibilities like one-time and recurrent task scheduling, local and remote logging, trans-network backup and filesystem synchronization, and network time control. The network servers that implement these features and their clients are introduced, as are general management and startup control of these servers. Students will recompile linux itself, the ultimate form of system control in linux. Security aspects of all maintenance activities are considered.

**Prerequisites/ Recommended Preparation** familiarity with a unix or linux environment, ability to use a unix command-line editor

**Instructor** David Morgan  
**Contacting the Instructor** dmorgan1@dslextreme.com

**Office Hours** by prearrangement on request, before or after class meetings

**Lab Assistants** none

**Lecture** a 3-hour lecture meeting per week, incorporating prescribed lab activities

**Lab** guided, prescribed lab activities incorporated in class meetings

**Course** assignments will be made individually with due dates announced at the time

**Structure Required Textbooks** Linux Administration Handbook Evi Nemeth, Trent H. Hein, Garth Snyder  
Prentice Hall, 2nd edition, 2007, ISBN 0131480049.

**Optional Books** Automating Unix and Linux Administration, Kirk Bauer, Apress, 2003

Practical Guide to Red Hat Linux: Fedora Core and Red Hat Enterprise Linux, Mark Sobell, Prentice Hall, 2006

Fedora 7 and Red Hat Enterprise Linux Bible, Christopher Negus, Wiley, Paperback, January 2007

Learning Red Hat Enterprise Linux & Fedora, Bill McCarty, O'Reilly & Associates, April 2004

UNIX Unbounded: A Beginning Approach (5th Edition), Amir Afzal, Prentice Hall, April 2007

Beginning Linux Programming (3rd Edition), Neil Matthew and Richard Stones, Wrox Press, December 2003

Understanding Unix/Linux Programming: A Guide To Theory and Practice, Bruce Molay, Prentice Hall, 2003

UNIX Shells by Example, Ellie Quigley, Prentice Hall, Paperback, September 2004

**Web Site** a resource CD containing course information as an on-disk website is provided. It has been copied online at <http://dmorgan.us/linadmin/>

**Grading** Grading is as a weighted average of homework assignments and tests. Formally, letter grades are defined at 10-point intervals but are at instructor discretion.

**Policies** Attendance is not tracked as a grading factor  
Submission instructions are given per-assignment  
Late submissions and make-up are on a case-by-case basis

**Academic Integrity** 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 is unacceptable to the University. It is often difficult to distinguish between a culpable act and inadvertent behaviour resulting from the nervous tension accompanying examinations. When the professor determines that a violation has occurred, appropriate action, as determined by the instructor, will be taken.

Although working together is encouraged, all work claimed as yours must in fact be your own effort. Students who plagiarize the work of other students will receive zero points and possibly be referred to Student Judicial Affairs and Community Standards (SJACS).

All students should read, understand, and abide by the University Student Conduct Code listed in SCampus, and available at:

<http://www.usc.edu/student-affairs/SJACS/nonacademicreview.html>

**Students with Disabilities** Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to your TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.