Degree Applicable

Glendale Community College
January 2010

COURSE OUTLINE

COMPUTER SCIENCE/INFORMATION SYSTEMS 172
UNIX/LINUX Operating System

I. Catalog Statement

Computer Science/Information Systems 172 discusses the various features of the UNIX operating system. This operating system was developed by Bell Labs and is becoming an industry standard in modern computer systems. This course will be taught using UNIX on Glendale Community College Sun computers and LINUX on student home computers.

Units – 4.0
Lecture Hours – 4.0

Recommended Preparation: CS/IS 135 or 139, or equivalent.

II. Course Entry Expectations

Skills Level Ranges: Reading 5; Writing 5; Listening/Speaking 5; Math 4.

III. Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:

1. create and maintain individual file systems and shell programs within UNIX;
2. set up and maintain file systems for high-level UNIX system administration;
3. evaluate the UNIX operating system for business and production programming applications;
4. design software using UNIX runtime facilities; write Bourne shell and Cshell applications.

IV. Course Content — Total Contact Hours = 64

A. Introduction — 8 hours
   1. Hardware environment
   2. Overall perspective of UNIX
   3. Summary of features
   4. History of UNIX
   5. The UNIX philosophy

B. Using UNIX — 10 hours
   1. Accessing the computer
   2. Logging on and off
   3. Passwords
   4. Basic units
   5. The shell

C. Basic Command and Files — 11 hours
   1. File types
   2. Related file commands
   3. File system commands
   4. Pathnames
   5. File editing with VI
   6. I/O connections and command lines
   7. File access permission

D. Shell Procedures — 15 hours

1. What are they and why use them
2. Shell variables and commands
3. The alias mechanism
4. Conditional constructs
5. Internation constructs
6. Expressions and branching
7. Inheritance of environment
8. Interrupt processing

E. Background Processes 8 hours

1. Process ID
2. Foreground/background constructions
3. Commands for background processing
4. Special process ID variables

F. Miscellaneous 12 hours

1. History substitutions and variables
2. Advanced editing with VI
3. File name generation
4. Command substitution
5. Set up files
6. Other commands
7. Efficiency considerations

V. Methods of Presentation

The following instructional methodologies may be used in the course:
1. lecture/demonstration;
2. computer examples;
3. multimedia;
4. online.

VI. Assignments and Methods of Evaluation

1. Projects (e.g. creating and maintaining individual file systems and shell programs within UNIX).
2. Midterm.
3. Final examination.

VII. Textbook

Kochan, S., and Wood, P., UNIX Shell Programming, Current edition.
Indianapolis: SAMS Publication, 2003.
10th Grade Reading Level. ISBN: 0-672-32490-3.

VIII. Student Learning Outcomes

Upon successful completion of the required coursework, the student will be able to:
1. create and maintain individual file systems and shell programs within UNIX;
2. set up and maintain file systems for high-level UNIX system administration;
3. evaluate the UNIX Operating System for business and production programming applications;
4. design software using UNIX runtime facilities and write Bourne shell and Cshell applications.