



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**INTRODUCTION TO LINUX/UNIX
CIS1908 3 Credit Hours**

Student Level:

This course is open to students on the college level in either the freshman or sophomore year.

Catalog Description:

CIS1908 – INTRODUCTION TO LINUX/UNIX (3 hrs)

An introduction to the Unix/Linux operating system concepts, utilities, and basic shell scripts.

Prerequisites:

None

Controlling Purpose:

This course is designed to meet the needs of students majoring in information technology in explaining how to use the Unix/Linux operating system including file, directory, user, system, and process management along with programming concepts.

Learner Outcomes:

Upon completion of the course, the student will gain knowledge of the Unix/Linux operating system including fundamental concepts/ideas, system and file utilities, system management, and basic programming in shell scripts.

Units Outcomes and Criterion Based Evaluation Key for Core Content:

The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.

Evaluation Key:

- A = All major and minor goals have been achieved and the achievement level is considerably above the minimum required for doing more advanced work in the same field.
- B = All major goals have been achieved, but the student has failed to achieve some of the less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.
- C = All major goals have been achieved, but many of the minor goals have not been achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.

- D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.
- F = Failing, will be computed in GPA and hours attempted.
- N = No instruction or training in this area.

UNIT 1: INTRODUCTION TO LINUX						
Outcomes: Understand the history, basic functionality and uses of Linux						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the history of UNIX and Linux
						Explain the benefits of Linux
						List the main components of Linux
						List the desktop components
						Explain how to update, install, and remove software
						Explain where to find help and documentation
						Explain the logging in procedures
						Use the command line
						Change window options

UNIT 2: THE LINUX UTILITIES

Outcomes: Understand and use the core utilities of Linux

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Use the basic utilities such as ls, cat, rm, less, and hostname
						Use file utilities such as cp, mv, lpr, grep, head, tail, sort, uniq, diff, and file
						Understand and use the pipe
						Use the utilities: echo, date, script, and todos
						Compress and archive files
						Use the locate commands such as which, whereis, and miocate
						Obtain user and system information using who, finger, and w
						Communicate with other users using write, mesg, and email

UNIT 3: THE LINUX FILESYSTEM

Outcomes: Understand how the filesystem is setup in Linux

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the hierarchiacal filesystem
						Explain directory files and ordinary files
						Explain pathnames
						Work with directories using mkdir, cd, rmdir, mv, and cp
						Explain and use access permissions using is -1, chmod, setuid, and stegid
						Explain and work with Access control Lists
						Explain and work with links

UNIT 4: THE SHELL

Outcomes: Understand how the shell works in Linux

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain and use the command line
						Explain and use the standard input and standard output
						Run a command in the background
						Explain filename generation/pathname expansion
						Explain builtins

UNIT 5: LINUX GUI: X AND GNOME

Outcomes: Understand how to use various utilities in the GUI

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain and use the X Window System
						Use the Nautilus File Browser window
						Use GNOME utilities

UNIT 6: THE BOURNE SHELL

Outcomes: Understand the basics of working with the Bourne Shell

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain and use Shell Basics
						Use Parameters and variables
						Use processes
						Explain the history feature
						Use aliases
						Use functions
						Control bash
						Use the command line for processing

UNIT 7: NETWORKING AND THE INTERNET

Outcomes: Understand the basic concepts of networking and how to use network utilities

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the types of networks and how they work
						Explain how to communicate over a network
						Use network utilities
						Explain distributed computing
						Give an overview of Usenet and the World Wide Webb

UNIT 8: SYSTEM ADMINISTRATION: CORE CONCEPTS

Outcomes: Understand the basics of system administration

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Run commands with root privileges
						Explain the upstart event-based init daemon
						Explain system operations
						Use textual system administration utilities

UNIT 9: FILES, DIRECTORIES, AND FILESYSTEMS

Outcomes: Understand the basics of files, directories and filesystems

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						List and explain important files and directories
						Explain file types
						Explain filesystems

UNIT 10: DOWNLOADING AND INSTALLING SOFTWARE

Outcomes: Understand the need for updates and installing software

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Install and remove packages using aptitude
						Find the package that holds a needed file
						Explain and use APT
						Explain and use dpkg
						Install non-dpkg software

UNIT 11: OPENSSSH: SECURE NETWORK COMMUNICATION AND FTP

Outcomes: Understand and use utilities for network communication and file transfers

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain OpenSSH
						Run ssh, scp and sftp OpenSSH clients
						Explain FTP
						Run ftp and sftp FTP clients

UNIT 12: PROGRAMMING THE BOURNE SHELL

Outcomes: Understand how to program shell scripts

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Use control structures
						Use parameters and variables
						Use builtin commands
						Use expressions

UNIT 13: THE PERL SCRIPTING LANGUAGE

Outcomes: Understand how to program perl scripts

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Use the perl help and run a perl program
						Use variables
						Use control structures
						Work with files programmatically
						Sort Data
						Use subroutines
						Use regular expressions
						Use CPAN modules

Projects Required:

None

Textbook:

Contact Bookstore for current textbook.

Materials/Equipment Required:

Student will need to have the ability to install various software packages.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy

Course Timeframe:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability, which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.