

# Common Course Outline

CINS 242

Linux / UNIX Shell Scripting

4 Semester Hours

## The Community College of Baltimore County

### **Description**

Linux / UNIX Shell Scripting explores advanced concepts of Linux / UNIX shell scripting languages. Various versions of Linux / UNIX shells will be discussed, including the Bourne, Korn, and bash shells as well as an introduction to Perl, Tk/Tcl, and CGI. Students will write shell programs in AIX and Linux environments. Emphasis will be placed on writing scripts to support system and network configuration, interfaces for system utilities, and user programs. This course is taught in a combination of lecture and hands-on environment.

Prerequisite: CINS 142 or consent of Program Director

### **Overall Course Objectives**

Upon completion of this course the student will be able to:

- A. Design, code, and debug Bourne, Korn, and bash shell scripts of moderate complexity
- B. Design and code, simple Perl and Tk/Tcl programs
- C. Write programs to perform Linux / UNIX system and network configuration
- D. Create user interfaces for system utilities
- E. Write programs that use the Common Gateway Interface (CGI) to process data collected from World Wide Web page forms
- F. Utilize Linux / UNIX text processing programs such as grep, sed, and awk in shell scripts

### **Major Topics**

- I. Introduction to Linux / UNIX Shells
- II. Review of basic UNIX utilities
- III. Quoting Mechanisms
- IV. Command Grouping and Substitution
- V. System Startup, Environment, Processes, and Inheritance
- VI. Forking and Executing

- VII. The Bourne Shell – Interactive
- VIII. Bourne Shell Programming
- IX. Program Structure and Flow Control – Loops and Decisions
- X. The Linux / UNIX Toolbox and Regular Expressions
- XI. The Grep Family
- XII. SED – The Stream Editor
- XIII. The AWK Utility and AWK Programming Constructs
- XIV. The Korn and bash Shells - Interactive
- XV. Aliases, Functions
- XVI. Korn and bash Shell Programming
- XVII. Introduction to Perl, Tk/Tcl
- XVIII. Common Gateway Interface

### **Course Requirements**

Grading: Grading procedures will be determined by the faculty member, will be provided the first week of class, and will include:

1. Minimum of 6 programming projects
2. Minimum of 6 tests or quizzes.
3. Comprehensive final exam.

### **Other Course Information**

This is a CIS elective and is a requirement in the Linux / UNIX Operatin Systems Certificate.

This course is taught in a combination lecture and computerized environment.

This course is one of four Linux / UNIX courses.

Date Revised: 03/01/2003 by Bob Ayella