

COSC 4327 UNIX Shell Programming – Summer 2025

General Information

Instructor	Leonard Brown
Office Location	COB 315.01
Office Hours	MW 2:00 pm 5:00 pm, Tu 10:00am-2:00pm (or by appointment)
Phone	(903) 566-7403
Email	lbrown@uttyler.edu
Class Time/Location	MW 12:15 pm – 1:50 pm / Soules 255

Grading: There are several components to the course grade totaling 1000 points. The point distribution is as follows:

Exam I	150 points
Exam II	150 points
Homework Assignments/Quizzes	400 points
Final Examination	300 points

Course grades will be assigned based on the following scale.

900-1000	A
800-899	B
700-799	C
600-699	D
599 and below	F

Exams: There will be two midterm exams and one final exam given for this class. All exams will be held in the class lecture room. The midterm exams will be held during the regular class time. The final exam will be held during the regular class time as well. The **tentative** dates of the exams are:

Exam I	June 18, 2025
Exam II	July 23, 2025
Final Exam	August 6, 2025

You will be notified in advance of any change in the above dates.

Course Syllabi

1. *Course number and name*

COSC 4327: UNIX Shell Programming

2. *Credits and contact hours*

3 Credit Hours

3. *Instructor's or course coordinator's name*

Instructor: Leonard Brown

4. *Textbook, title, author, and year*

- *Shell Programming in Unix, Linux, and OS X*, Kochan & Wood, 4th Edition, 2017, ISBN 0-13-449600-0

5. *Specific course information*

a. *A brief description of the content of the course (catalog description)*

Introduction to programming in the UNIX shell; directory structure and manipulating files, built-in functions, control structures, utilities, and sublanguages.

b. *Prerequisites or co-requisites*

COSC 1336

c. *Indicate whether a required, elective, or selected elective course in the program*

Elective course

6. *Specific goals of the course*

a. *Specific outcomes of instruction, the student will be able to:*

- Understand the concepts and features that characterize UNIX
- Understand general features of UNIX commands
- Break up a command into arguments and options
- Know how to use the man command and understand the organization of the documentation, especially the way the syntax is explained
- Know general purpose utilities in UNIX systems (passwd, who, w, tty, stty, script, uname, date, cal, calendar, bc)
- Be able to create and edit files using vi/vim or emacs
- Understand UNIX file system and know how file and directory manipulation commands (such as pwd, cd, mkdir, rmdir, cp, rm)

- Understand file attributes and know commands to list or change them (ls, chmod, umask, chown, chgrp, touch, find)
- Understand the concept of UNIX shell
- Understand the meaning of wild-card characters in UNIX commands
- Understand the difference between single, double, and back quotes in a UNIX command
- Understand streams and be able to redirect standard input/output/error stream to a file
- Be able to set up a pipeline for connecting two or more commands
- Use command substitution
- Understand the properties of shell and environmental variables and be able to use both types of variables
- Be able to use simple filters of the system
- Understand the concept of a process and its creation
- Be able to run jobs in the background
- Understand the general environment-related features of popular UNIX shells and be able to customize user environment in their favorite shell by configuring the startup files
- Be able to create and execute shell scripts
- Be able to describe general duties of UNIX system administrator

b. *Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course*

Course address ABET Student Outcome(s):

7. *Brief list of topics to be covered*

- Introduction to UNIX
- General purpose utilities
- UNIX editors
- UNIX file system and file attributes
- The shell
- Simple filters
- The process
- Filters using regular expressions
- Customizing the environment
- Shell programming
- System and network administration

Submitting Assignments:

Assignments are submitted through the university's course management software, Canvas. Handwritten assignments will not be accepted. This includes writing an assignment by hand and scanning or photographing it.

Source code or scripts must be submitted in text files. Note, these are files that contain only text and no special formatting. Neither MS Word nor Adobe PDF files are text files.

It is your responsibility to check your files before submitting them. Check your files to ensure that they are non-empty, non-corrupted, and represent the correct version of your homework.

All homework assignments are due at 11:59 p.m. on the date specified in the assignment. Assignments submitted after the due date (even if it is by one minute) are considered late. There is a 10% penalty for assignments submitted late. Assignments will not be accepted after 48 hours.

Unless otherwise specified, all work submitted for a grade must be completed by yourself. You are not to submit another person's work and claim it as your own. Plagiarism will result in disciplinary actions. To spare yourself accusations of plagiarism-

1. Do not show another student a copy of your work before it has been graded. The penalties for permitting your work to be copied are the same as the penalties for copying someone else's work.
2. Do not leave copies of your work where other students may access them.

Additional Policies:

<https://www.utt Tyler.edu/offices/academic-affairs/files/syllabus-information.pdf>

Academic Calendar

<https://www.utt Tyler.edu/schedule/files/2024-2025/academic-calendar-2024-2025-main-2025-01-10.pdf>

1. *Course number and name*
COSC 5326: UNIX Programming Environment
2. *Credits and contact hours*
3 Credit Hours
3. *Instructor's or course coordinator's name*
Instructor: Leonard Brown
4. *Textbook, title, author, and year*
 - *Shell Programming in Unix, Linux, and OS X*, Kochan & Wood, 4th Edition, 2017, ISBN 0-13-449600-0
 - a. *Other supplemental materials*
None
5. *Specific course information*
 - a. *A brief description of the content of the course (catalog description)*
This course will cover shell programming, filters, I/O programming, program development, and document preparation. Special attention will be given to UNIX systems programming.
 - b. *Prerequisites or co-requisites*
COSC 2336, COSC 2315
 - c. *Indicate whether a required, elective, or selected elective course in the program*
Elective course for MSCS program
6. *Specific goals of the course*
 - a. *Specific outcomes of instruction, the student will be able to:*
 - Describe UNIX operating system components such as process management, file system, and memory management, and Input/output system
 - Recognize various shell commands
 - Describe UNIX file system
 - Demonstrate usage of shell variables
 - Develop shell scripts with alternate decisions
 - Develop shell scripts with using loop commands
 - Develop shell scripts to with sub-shells

- Develop and test C programs in UNIX programming Environment

b. *Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course*

Course address ABET Student Outcome(s):

7. *Brief list of topics to be covered*

- Introduction to UNIX
- UNIX commands
- UNIX file system
- UNIX shells
- Pipes and filters
- Shell scripts or Perl scripts
- Program development
- System administration

COSC 5326 Unix Programming Environment Summer 2025

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