

CSE 4251: The UNIX Programming Environment

Course Description

Introduction to the UNIX programming environment including: shell programming (csh); regular expressions; makefiles; grep, sed, and awk programming languages.

Prior Course Number: CSE 459.11

Transcript Abbreviation: UNIX Prgrmg Env

Grading Plan: Satisfactory/Unsatisfactory

Course Deliveries: Classroom

Course Levels: Undergrad

Student Ranks: Junior, Senior

Course Offerings: Autumn

Flex Scheduled Course: Never

Course Frequency: Every Year

Course Length: 14 Week

Credits: 1.0

Repeatable: No

Time Distribution: 1.0 hr Lec

Expected out-of-class hours per week: 2.0

Graded Component: Lecture

Credit by Examination: No

Admission Condition: No

Off Campus: Never

Campus Locations: Columbus

Prerequisites and Co-requisites: CSE 2231 or CSE 321

Exclusions: Not open to students with credit for CSE 459.11

Cross-Listings:

Course Rationale: Existing course.

The course is required for this unit's degrees, majors, and/or minors: No

The course is a GEC: No

The course is an elective (for this or other units) or is a service course for other units: Yes

Subject/CIP Code: 14.0901

Subsidy Level: Baccalaureate Course

Programs

Abbreviation	Description
BS CSE	BS Computer Science and Engineering

Course Goals

Be familiar with csh programming.
Be familiar with UNIX regular expressions.
Be familiar with using basic sed commands.
Be familiar with using awk commands to filter through data files.

Course Topics

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Introduction	1.0							
C Shell: filename metacharacters, i/o redirection, command history, building complex command, job/process control, directory control	3.0							
C Shell programming: script introduction, script examples, debugging scripts	4.0							
Regular expressions in Unix (grep)	3.0							
make, sed, awk	3.0							

Representative Assignments

Working with environment variables, command history
Simulating the "trash" basket of Windows/Mac
Cleaning up the "trash basket"
Use grep, sed and awk to process some text files
Lab using make

Grades

Aspect	Percent
Lab 1	20%
Lab 2	20%
Lab 3	20%
Lab 4	20%
Lab 5	20%

Representative Textbooks and Other Course Materials

Title	Author
<i>UNIX in a Nutshell, A Desktop Quick Reference for SVR4 and Solaris 7, 3rd Edition</i>	Arnold Robbins
<i>UNIX SHELLS by Example, 3rd Edition</i>	Ellie Quigley

ABET-EAC Criterion 3 Outcomes

Course Contribution		College Outcome
*	a	An ability to apply knowledge of mathematics, science, and engineering.
	b	An ability to design and conduct experiments, as well as to analyze and interpret data.
**	c	An ability to design a system, component, or process to meet desired needs.
	d	An ability to function on multi-disciplinary teams.
*	e	An ability to identify, formulate, and solve engineering problems.
	f	An understanding of professional and ethical responsibility.
	g	An ability to communicate effectively.
	h	The broad education necessary to understand the impact of engineering solutions in a global and societal context.
*	i	A recognition of the need for, and an ability to engage in life-long learning.
	j	A knowledge of contemporary issues.

Course Contribution		College Outcome
**	k	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

BS CSE Program Outcomes

Course Contribution		Program Outcome
*	a	an ability to apply knowledge of computing, mathematics including discrete mathematics as well as probability and statistics, science, and engineering;
	b	an ability to design and conduct experiments, as well as to analyze and interpret data;
**	c	an ability to design, implement, and evaluate a software or a software/hardware system, component, or process to meet desired needs within realistic constraints such as memory, runtime efficiency, as well as appropriate constraints related to economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability considerations;
	d	an ability to function on multi-disciplinary teams;
*	e	an ability to identify, formulate, and solve engineering problems;
	f	an understanding of professional, ethical, legal, security and social issues and responsibilities;
	g	an ability to communicate effectively with a range of audiences;
	h	an ability to analyze the local and global impact of computing on individuals, organizations, and society;
*	i	a recognition of the need for, and an ability to engage in life-long learning and continuing professional development;
	j	a knowledge of contemporary issues;
**	k	an ability to use the techniques, skills, and modern engineering tools necessary for practice as a CSE professional;
	l	an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution;
	m	an ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices;
	n	an ability to apply design and development principles in the construction of software systems of varying complexity.

Prepared by: Bruce Weide