Master Course Syllabus
School of Engineering and Computer Science
Washington State University Vancouver
CS 224
Programming Tools
3 Semester hours
(3 lecture hours)

Catalog Description
Debugging tools, scripting languages, UNIX programming tools, introduction to graphical user interface programming.

Prerequisite Courses
- CS 122 with a C or better

Prerequisite Topics
- Some programming experiences
- Basic data structures

Measured Course Outcomes
Students taking this course will:
1. Utilize a source code control utility to support the implementation of a multi-file program (Contributes to performance criterion 2-b.)
2. Design, code, and debug scripts for the Unix shell or other languages (Contributes to performance criterion 6-d.)

Covered Course Outcomes
Students taking this course will also:
1. Design, code and debug a simple graphical user interface (Relevant to performance criterion 6-d.)

Required Textbooks
None

Reference Material
- One of the following: *Kernighan and Pike, The UNIX Programming Environment, Prentice Hall, 1984. Advanced Programming in the Unix Environment*, W. Richard Stevens, Addison-Wesley, 1992, ISBN 0-201-56317-7.
- Unix online documentation.
- Kernighan and Pike, *The Practice of Programming*, Addison-Wesley, 1999.
- Stones and Matthew, *Beginning Linux Programming*, 2nd. Ed., Wrox Press, 1999.

Major Topics Covered in the Course
1. UNIX/Linux concepts

2. Basic shell and Unix commands
3. Revision, configuration and source code control
4. Shell scripting
5. Other scripting languages (such as: awk, Perl, Python or Tcl)
6. Using a debugger and other debugging practices
7. Introduction to GUI programming
8. Event-driven programming
9. Interactive GUI design tools

Projects

Programming Project Area	Weeks
Shell scripting	2
Programming development using multiple source files	3
Graphical user interface programming	2

Design, Implementation, and Analysis

This course requires the student to design and implement solutions to problem descriptions as part of its projects. Other activities may include elements of design, implementation, or analysis.

CS2013

This course provides coverage of CS2013 knowledge areas. Values listed are minimum course hours dedicated to the topic, percentages indicate the fraction of CS2013 knowledge area topics covered (acceptable values are: <25%, 25-75%, >75%, or 100%).

Area	Tier 1	Tier 2	Elective
HCI/Foundations	2 (<25%)		
HCI/Designing Interaction		2 (<25%)	
HCI/Programming Interactive Systems			2 (25-75%)
PL/Event-Driven and Reactive Programming		1 (<25%)	
PL/Advanced Programming Constructs			1 (<25%)
SE/Tools and Environments		1 (25-75%)	
SE/Software Design		3 (25-75%)	1 (<25%)

Course Coordinator:	Paul Bonamy
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