

CSI 1420: Introduction to C Programming and UNIX

Credits Hours: 4 credits, 3.57 contact hours/week.

Instructor: Anyi Liu, Ph.D.

Text book: How to Program, 8th edition by P. Deitel, H. Deitel, C, Pearson, 2016, ISBN-10: 0-13-397689-0, ISBN-13: 978-0-13-397689-2. [Note: A widely adopted textbook, which is approachable to the beginners.

Supplementary Text: The C Programming Language, 2nd edition by Brian W. Kernighan & Dennis M. Ritchie, Prentice-Hall, 1988. ISBN 0-13-110370-9 (hardback) or 0-13-110362-8 (paperback). [Note: #1 Best seller in C programming language from Amazon. The authors are the designers of C and UNIX.

Specific course information

Introduction to programming and problem solving using C and UNIX. The topics include fundamentals of C programming and basic UNIX commands including file organization, user commands, and utilities in Unix and creating, editing, executing, and debugging C programs.

Prerequisites: MTH 1554 (Calculus I) or equivalent as a prerequisite for this course.

Required course for CS major.

Course Objectives: Upon successful completion of this course, students should be able to

- Use Unix commands and utilities [ABET CS: (a, c)]
- Describe organization of Unix file systems [ABET CS: (a, c)]
- Write C programs that contain expressions, flow control, functions, arrays and input/output [ABET CS: (a, c, i)]
- Debug and run C programs under Unix [ABET CS: (a, c, i)]
- Write Linux/ Unix shell programs to perform tasks of moderate complexity [ABET CS: (a, c, i)]

List of Topics:

- Introduction to unix system and command
- More unix commands command and tools
- Variables, Operators, and basic I/O
- Control Flow
- Control Flow
- Functions
- Arrays

- Problem Solving in C
- Data types
- Pointers and Strings
- Structures
- Memory management, File I/O
- Shell Programming and Makefile