Shanghai University of Finance & Economics

2019 Summer Program

CPM 101 Introduction to Programming

Course Outline

Term: June 3 – June 28, 2019

Class Hours: 12:00-13:50 (Monday through Friday)

Course Code: CPM 101

Instructor: Mo Sha

Home Institution: State University of New York at Binghamton

Office Hours: TBA and by appointment

Email: msha@binghamton.edu

Credit: 4

Class Hours: This course will have 52 class hours, including 32 lecture hours, professor 8 office hours, 8-hour TA discussion sessions, 4-hour review sessions.

Course Description:

Review of programming concepts, programming environments, debugging tools, large program management and design.

Course Objectives:

This course is designed to provide a solid foundation and background in basic programming techniques and concepts, as well as an overview of programming in the C language:
- review basic programming concepts and problem solving techniques
- programming in a Linux environment without the help of an IDE
- programming and problem solving in the C language
- overview of simple data structures
- implement algorithms efficiently and correctly
- system tools useful for debugging

Required Textbooks
Brian W. Kernighan and Dennis M. Ritchie. The C Programming Language. 2rd edition, Prentice Hall, 1988

Grading & Evaluation:

There will be one midterm exam and one final exam, 30 points each. Exams test basic programming concepts. Homework accounts 40 points. Homework tests the skill of programming and problem solving. Homework accounts 40 points. There is 15 extra points for attendance.

The grade distribution (90-100%=A, 80-89%=B, 70-79%=C, 60-69%=D; and below 60% = F)

Course Schedule (tentative):

The course outline is tentative and I will modify accordingly depending on the pace of the class.

Week 1: Basic Programming Concepts
Session 1: Introduction to C Programming Language
Session 2: C Programming Environment
Session 3: Variables and Conditionals
Session 4: Bitwise Logical Operations

Week 2: Preprocessing and User-defined Data Types
Session 1: The Preprocessor and Preprocessing
Session 2: Function Concepts and Programming
Session 3: Programming with Structs, Unions, and Enums
Session 4: Midterm Exam

Week 3: Pointers and Input/Output Programming
Session 1: Programming with Arrays
Session 2: Basic Concepts about Pointers
Session 3: Programming with Pointers
Session 4: I/O Concepts and I/O Programming

Week 4: Advanced Topics and Data Structures
Session 1: Dynamic Memory Concepts and Programming
Session 2: Programming with Linked Lists and Stacks
Session 3: Programming with Trees and Graphs
Session 4: Final Exam