COSC326

This paper aims to improve and develop your programming skills by setting a series of exercises, called études, which require an analytical and creative approach to problem solving. Most, but not all, of them will involve programming tasks. Some will not use computers at all, while others will use computers only for ancillary tasks. Each solution will be assessed against the requirements and you will be expected to go back and rework each étude until it is completed satisfactorily. You will be required to fully test and debug your programs as well as learn to identify inefficiencies.

The main objectives of this course are to develop and foster general skills relating to computer related techniques, understanding a problem, problem solving strategies and working with people. Most of the études will require working in pairs or in groups, although some exercises are individual work. There are no lectures, but weekly town hall meetings will be used to discuss or propose solutions, give hints, and reflect on the things you've learned.

Structure of the course

COSC326 consists of two main components. The primary component is a number of exercises, called études. Along with these there will also be Town-hall meetings, during which the class will discuss various topics related to programming and problem solving.

Etudes

These études will give you opportunities to develop a broad range of skills, especially in problem solving and programming. Some of the études will be group exercises, others will require you to work alone or in pairs. To facilitate your completion of the études there will be 2-hour lab sessions (two per week during regular semester, every day during the summer) during which you can collaborate with group members and seek assistance from the instructor.

Town halls

The town hall meetings will offer the class a chance to discuss various topics related to programming, typically related to the études you are currently working on. These will be 1-hour sessions, happening once a week (two times per week in the summer). The town hall meetings are not lectures, and the students are expected to make contributions.

Marking

COSC326 is 100% internally assessed, and is pass/fail. In order to complete the paper you must pass all of the études. However, you can re-submit your études as many times as necessary to complete the task. In contrast to most papers you will take, the expectation is that every task is completed, achieving all of the objectives for the étude. There are no 'part-marks'. This is intended to mirror 'real-life'

scenarios where the only acceptable solution is a complete solution. Code must run and accomplish the task at hand.

Objectives

Besides simply giving you a chance to practice you programming skills, COSC326 is intended to help you build skills in:

- understanding problems
- problem solving
- programming techniques and understanding of how computers work
- working with people

Topics

The études and town halls will cover a broad range of topics. Town halls and études change from semester to semester, but typically will cover:

- recursion
- parsing
- optimization
- data structures
- floating point numbers
- searching parameter spaces
- testing and debugging
- efficiency