CMPT 383 - D100 Programming Langs.

Instructor(s): Gregory Baker

SFU Burnaby

Calendar Objective/Description:
Programming Langs.

Instructor's Objectives:
The objective of this course is to give the student a better understanding of non-imperative programming, and other important distinctions between languages. Various concepts and principles underlying the design and use of modern programming languages are considered. We will take a detailed look at a pure functional programming language, and a language that promotes concurrency.

Online offering notes: you will need a computer with a webcam and reliable Internet access. The computer should be powerful enough to run a virtual machine: at least 8 GB memory, 20 GB disk, and a reasonably decent processor. There will be 3-4 in-class activities during the semester which must be completed during the lecture time. Otherwise, lectures will be posted as a "watch party" where we can watch together (and ask questions in a forum), but they can also be viewed later.

Prerequisites:
see go.sfu.ca

Topics:
- Expressing algorithms functionally
- Functional programming in Haskell
- Type systems in programming languages
- Compilers, interpreters, and runtime environments
- Challenges and techniques in concurrent programming
- Safe & concurrent programming in Rust

Grading:
Weekly exercises 15%; assignments 35%; midterm exam 10%; final exam 40%. Will include weekly exercises, assignments, quizzes (in lecture time), and a project. Details will be discussed in the first week of class.

Students must attain an overall passing grade on the weighted average of exams in the course in order to obtain a clear pass (C- or better).

Recommended Books:
Programming in Haskell, Graham Hutton, Cambridge University Press, 9781316626221

Academic Honesty Statement:
Academic honesty plays a key role in our efforts to maintain a high standard of academic excellence and integrity. Students are advised that ALL acts of intellectual dishonesty will be handled in accordance with the SFU Academic Honesty and Student Conduct Policies ( http://www.sfu.ca/policies/gazette/student.html ).