CMPT 383 - D200 Comparative Programming Languages

Instructor(s): Toby Donaldson
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Calendar Objective/Description:
Various concepts and principles underlying the design and use of modern programming languages are considered in the context of procedural, object-oriented, functional and logic programming languages. Topics include data and control structuring constructs, facilities for modularity and data abstraction, polymorphism, syntax, and formal semantics.

Instructor's Objectives:
This course explores the various concepts and principles underlying the design and use of modern programming languages. We will take a detailed look at core programming techniques of procedural languages, and also examine alternative programming models such as object-oriented programming, functional programming, declarative programming, and concurrency.

Prerequisites:
CMPT 225, and (MACM 101 or (ENSC 251 and ENSC 252)).

Topics:
- Basic syntax and semantics
- Control flow
- Type systems
- Composite types
- Subroutines
- Objects
- Functional programming
- Declarative programming
- Concurrency

Grading:
The course will contain a number of programming exercises and projects, plus a midterm and final exam. The exact marking scheme will be provided in the first week of class.

Recommended Books:
Concepts of Programming Languages (11th Edition), Robert Sebesta, Addison-Wesley, 2015, 9780133943023, It is okay to use the 10th edition, if you prefer.

Reference Books:
Programming Language Pragmatics, Michael L. Scott, Morgan Kaufmann, 2015, 9780124104099

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).