COMP 2150 - Object Orientation

**Calendar Description:** Design and development of object-oriented software. Topics will include inheritance, polymorphism, data abstraction and encapsulation. Examples will be drawn from several programming languages (Lab required).

**Prerequisite:** COMP 2140 and 2160

**This course is a prerequisite for:** COMP 3010, COMP 3350 and COMP 4290

**Outline**

1) Review of basic object-orientation concepts from previous courses (3 weeks)
   - Objects, classes, methods, messages (language independent), objects and abstract data types, encapsulation and modularity; messages and methods, object-orientation facilities in Java and in other languages, constructors and destructors

2) Inheritance and Object Hierarchies (3 weeks)
   - Inheritance of data and methods, class versus instance variables and methods, polymorphism, partial inheritance using several methods for a message, referring to data in superclasses, object self-reference, multiple inheritance

3) Abstract Classes and Information Hiding (3 weeks)
   - Facilities for hiding information, abstract classes and interfaces, techniques for proper information hiding, non-hierarchical relationships between objects

4) Object-Oriented Software Design (4 weeks)
   - Design from a behavioural, structural, information perspective, representations for object-oriented design (class diagrams, design patterns), designing hierarchies of classes, evaluating designs, in terms of abstraction, consistency, separation of interface and implementation, incremental testing