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

Text: Timothy Budd, *An Introduction to Object Oriented Programming, Third Edition,* Addison Wesley.