Introduction to Object Oriented Programming

Course type: lecture + recitation
Extent: 2+2 hours per week
Website: MOODLE


The course will introduce the following topics, not necessarily in this order:

- Introduction to Java
- Classes and Objects
- The Java Collection Hierarchy
- Encapsulation
- Interfaces, APIs and Interface Design
- Test Driven Development / Design by Contract
- Polymorphism
- Generics
- Exception Handling
- Object Creation
- Inheritance and Composition
- Immutability
- Design Patterns
- Iteration
- Serialization and I/O
- OO other languages (python)
Requirements:

Prerequisites: first year courses, database systems (89-851) or databases (89-281) or in parallel

Assignments and other duties: final exam + programming exercises

Grade: 60% final exam, 40% assignments. A passing grade in both is required to pass the course.

Bibliography:

Recommended reading:
The Java™ Tutorials https://docs.oracle.com/javase/tutorial/, Specifically https://docs.oracle.com/javase/tutorial/java/index.html

Design Patterns: Elements of Reusable Object-Oriented Software
by Erich Gamma, John Vlissides, Ralph Johnson, and Richard Helm