**Introduction to Object Oriented Programming**

**Course type:** lecture + recitation  
**Extent:** 2+2 hours per week  
**Website:** [MOODLE](https://moodle.biu.ac.il/)

**Course Goals:**
Introduction to Object Oriented Programming

**Course Content:**
- Introduction to Java
- Classes and Objects
- Code Monolithic
- Test Driven Development / Design by Contract
- The Java Collection Hierarchy
- Encapsulation
- Interfaces, APIs and Interface Design
- Polymorphism
- Generics
- Exception Handling
- Inheritance versus composition and delegation
- Immutability
- Design Patterns
- Iteration
- Serialization and I/O
- OO in other languages (python)

**Course Requirements:**
- Previous knowledge in programming

**Outcomes:**
Fundamentals of programming and design of object-oriented code. Practicing the Java programming language.
Requirements:

Prerequisites: course 89-110

Assignments and other duties: final exam + programming exercises

Grade: 80% final exam, 20% 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