Brief Course Description

Hands-on course designed for those with no previous programming experience and is also appropriate for developers with experience in different languages who want to learn object-oriented programming (OOP) to build applications. Using an "early-objects" approach, students receive an intensive introduction to OOP concepts. Topics include classes, objects and their relationship, data types, constructors, methods, flow control, collections, data abstraction, modularity, object-oriented programming concepts (encapsulation, inheritance, polymorphism), testing and debugging.

Course Prerequisites

Admission to the WMAD program

Learning Objectives*

Upon completion of this course the successful student will have reliably demonstrated the ability to:

- Explain object-oriented programming concepts: object, class, method, encapsulation, inheritance, polymorphism, abstraction and modularization.
- Explain data types, variables and constants in Java programming.
- Explain the basics of the Model-View-Controller architecture.
- Explain the basics of Test Driven Development (TDD).
- Identify and use control structures.
- Use correct syntax and documentation standards.
- Demonstrate skills in problem solving.
- Demonstrate fundamental programming skills using conditionals and iteration.
- Demonstrate object-oriented programming skills by designing and writing Java programs that use multiple interacting classes, inheritance and polymorphism.
- Design robust, easily-maintained programs using Java.
- Test and debug Java programs using a variety of testing techniques.
- Prepare program documentation.

Required course materials*

Textbook:
Java How To Program Tenth Edition (Early Objects)
Paul Deitel, Harvey Deitel

Software:
Java SE Development Kit (JDK) 8 and Eclipse Java IDE

Hardware:

	Windows PC, Linux or Mac, with Internet access, capable of running the Java 8 Platform
Course Duration	160 hours
Homework Hours	2-3 hours per day
Delivery Methods	*Indicate how the course is delivered:* ☒ *In-class instruction* ☐ *Distance education* ☐ *Combined delivery (both in-class and distance)*
Teaching Methods*	*Describe the teaching method. For example: seminar format, laboratory , lecture format (list all methods used)*
Method(s) of Student Evaluation*	*Describe the method(s) of evaluation used to assess a student's performance in the course.*
Completion Requirements*	*Indicate the requirements a student must meet to complete the course.*