

Virginia Western Community College
ITP 220
Java Programming II

Prerequisites

ITP 120 Co-requisite: ITD 130 or instructor's permission

Course Description

Imparts instruction in application of advanced object-oriented techniques to application development using Java. Emphasizes database connectivity, inner classes, collection classes, networking, and threads.

Semester Credits: 4 Lecture Hours: 4 Lab/Clinical/Internship Hours: 0

Required Materials**Textbook:**

Java, How to Program, 11th edition, Paul and Harvey Deitel, Pearson Publishing. There are three versions.
ISBN with eBook 978-0134752129 ISBN with loose leaf printed text 978-0134800301 ISBN with
printed version of text 978-0134800271 Make certain it is the code for Deitel 11th Java Early Objects.

OCP Oracle Certified Professional Java SE11 Programmer Study Guide: Exams 1Z0-815 Jeanne Boyarsky and
Scott Selikoff, Sybex, 978-1119584704, 2019

Other Required Materials:

Eclipse (latest version) supplied in class

Course Outcomes

At the completion of this course, the student should be able to:

1. Be able to review and program using the introductory topics from the Java programming language.
(those from ITP120)
2. Be able to program with advanced language constructs
3. Understand the advanced concepts of inheritance and polymorphism
4. Understand flat file and serializable file I/O concepts
5. Be able to work with inner classes
6. Be able to create fat client graphical user interface-based applications
7. Understand how to connect Java to databases with both raw code and tools such as Hibernate
8. Understand Java threading concepts and programming aspects
9. Prepare for the first Java certification test.
10. Expand your **knowledge of object-oriented programming techniques** by introducing advanced

- principles of computer programming and problem solving;
11. Introduce **fundamental object-oriented design strategies**;
 12. Increase **object-oriented problem-solving abilities**, through the use of real-world practical problems;
 13. Evaluate various forms of **data abstraction** based on metrics such as maintainability and efficiency;
 14. Introduce algorithms, program development, and construction techniques that use **abstraction, encapsulation, information hiding, and advanced data structures**;
 15. Provide a foundation for **further studies in computer science and information technology**.

Topical Description

Module	Topics	Deitel Chapters
1	Introduction, Programming, Selections and Loops, Classes, Objects, Methods, Arrays, ArrayLists, Strings, Inheritance, Polymorphism, Abstract Classes, Interfaces	1-10 plus 14
2	More Mod 1, Exception handling and filing, New APIS for JDK7, Collections	11,15,16
3	Java Database, Intro to GUI	12,24
4	Recursion, Search Sort	18,19
5	Generics, Lambdas, and Streams	Ch 17,20
6	Linked Lists, Stacks, Queues	Ch 21
7	Data Structures (cont)	Ch 21, handouts

Notes to Instructors

1. Each module is two weeks long and requires both a quiz and a laboratory assignment submitted through Canvas
2. A midterm (optional) and final exam (required)
3. Preparation for the Java certification is included