

**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.

**Other Required Materials:**

MyProgrammingLab (comes with new textbook). Can purchase just the access code for the  
MyProgrammingLab with ISBN 978-0134752105.  
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	Analysis of Algorithms, Recursion, Searching, Sorting and Big O, Generic Collections, Lists and Stacks, Queues, Priority Queues, Trees	17-21
5	Other Topics: GUI, Java FX, Annotations, Functional Programming and Unit Testing	Sec 10.10 + Ch 17 Ch 12, 25

## Notes to Instructors

1. Each module is three weeks long and requires both a quiz and a laboratory assignment submitted through Blackboard
2. A midterm and final exam are required
3. Preparation for the Java certification is included