

ITT Technical Institute
IT219
Programming in Java II
Onsite Course

SYLLABUS

Credit hours: 4

Contact/Instructional hours: 50 (30 Theory Hours, 20 Lab Hours)

Prerequisite(s) and/or Corequisite(s):

Prerequisites: IT203 Database Development or equivalent, IT218 Programming in Java I or equivalent

Course Description:

This course covers advanced programming concepts critical to the development of enterprise applications, including working with collections, multithreading, serialization, database access, internationalization, networking, and security features. It also covers commonly used Java features, such as Java Beans and Swing.

Syllabus: Programming in Java II

Instructor:	_____
Office hours:	_____
Class hours:	_____

Major Instructional Areas

1. Exception handling in Java
2. Working with text and binary files in Java
3. Java programming with multithreading
4. Networking in Java
5. Java programming with JavaBeans
6. Java programming with internationalization features.
7. Programming Swing components with containers, layout managers, and borders
8. Programming Swing components with menus, toolbars, dialog boxes, and internal frames
9. Java database programming
10. Java programming with remote method invocation

Course Objectives

1. Use exceptions and assertions to handle errors in Java programs.
2. Use text and binary files to write Java programs.
3. Write Java programs using threads.
4. Write client/server programs in Java.
5. Use JavaBeans to write Java programs.
6. Create Swing graphical user interfaces (GUIs) using containers, layout managers, and borders.
7. Create a Swing GUI using menus, toolbars, and dialog boxes.
8. Develop a database-driven application.
9. Use the advanced features of JDBC to develop a database application.
10. Use Remote Method Invocations (RMI) to create a distributed Java application.
11. Write Java programs with internationalization features.

SCANS Objectives

SCANS is an acronym for Secretary's Commission on Achieving Necessary Skills. The committee, created by the National Secretary of Labor in the early 1990s, created a list of skills and competencies that the committee feels are necessary for employees to function in a high-tech job market.

1. Acquire information.
2. Know how technological systems work and function effectively.
3. Demonstrate competence in understanding systems.
4. Know how the structures of a system relate to goals.
5. Demonstrate competence in selecting technology, including determining desired outcomes and applicable constraints.
6. Demonstrate competence in applying technology to task.
7. Design and implement applications to solve business problems.
8. Identify appropriate technology to solve business problems.

Course Outline

Note: All graded activities, except the projects and final exam, are listed below in the pattern of <Unit Number>.<Assignment Number>. For example, Labs: 4.1 refers to the 1st lab activity in Unit 4.

Unit	Activities
1— Exception Handling	<ul style="list-style-type: none"> • Content Covered: <ul style="list-style-type: none"> ◦ <i>Introduction to Java Programming:</i> ◦ Chapter 18, “Exception Handling” • Assignments 1.1, 1.2, 1.3 • Labs: 1.1, 1.2
2— Working with Text and Binary Files	<ul style="list-style-type: none"> • Read from <i>Introduction to Java Programming:</i> <ul style="list-style-type: none"> ◦ Chapter 19, “Binary I/O” • Assignments: 2.1, 2.2, 2.3 • Labs: 2.1, 2.2
3— Multithreading	<ul style="list-style-type: none"> • Read from <i>Introduction to Java Programming:</i> <ul style="list-style-type: none"> ◦ Chapter 29, “Multithreading” • Assignments: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 • Labs: 3.1, 3.2
4— Networking	<ul style="list-style-type: none"> • Read from <i>Introduction to Java Programming:</i> <ul style="list-style-type: none"> ◦ Chapter 30, “Networking” • Assignments: 4.1, 4.2, 4.3, 4.4, 4.5 • Labs: 4.1, 4.2
5— Internationalization and JavaBeans	<ul style="list-style-type: none"> • Read from <i>Introduction to Java Programming:</i> <ul style="list-style-type: none"> ◦ Chapter 31, “Internationalization” ◦ Chapter 32, “JavaBeans and Bean Events” • Assignments: 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 • Projects: Project 1 (Start) • Labs: 5.1, 5.2
6— Containers, Layout Managers, and Borders	<ul style="list-style-type: none"> • Read from <i>Introduction to Java Programming:</i> <ul style="list-style-type: none"> ◦ Chapter 33, “Containers, Layout Managers, and Borders” • Assignments: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7 • Projects: Project 1 (Submit) • Labs: 6.1, 6.2
7— Menus, Toolbars, Dialogs, and Internal Frames	<ul style="list-style-type: none"> • Read from <i>Introduction to Java Programming:</i> <ul style="list-style-type: none"> ◦ Chapter 34, “Menus, Toolbars, and Dialogs” • Assignments: 7.1, 7.2 • Projects: Project 2 (Start) • Labs: 7.1, 7.2
8— Java Database Programming	<ul style="list-style-type: none"> • Read from <i>Introduction to Java Programming:</i> <ul style="list-style-type: none"> ◦ Chapter 37, “Java Database Programming” • Assignments: 8.1, 8.2 • Projects: Project 2 (Submit) • Labs: 8.1, 8.2
9— Advanced Java Database Programming	<ul style="list-style-type: none"> • Read from <i>Programming in Java II Student CD for ITT Technical Institute:</i> <ul style="list-style-type: none"> ◦ Chapter 38, “Advanced Java Database Programming” • Assignments: 9.1, 9.2 • Projects: Project 3 (Start) • Labs: 9.1, 9.2
10— Remote	<ul style="list-style-type: none"> • Read from <i>Programming in Java II Student CD for ITT Technical Institute:</i>

Unit	Activities
Method Invocation	<ul style="list-style-type: none"> ○ Chapter 43, “Remote Method Invocation” ● Assignments: 10.1, 10,2 ● Projects: Project 3 (Submit) ● Labs: 10.1, 10.2
11— Review and Final Exam	<ul style="list-style-type: none"> ● Final Exam

Instructional Methods

In this course, you will write Java programs to create simple applications. This will help you examine the basic Java language concepts and the Java environment and create applets.

The following are some of the strategies used in the course:

- Code demonstrations
- Open-ended questions used to initiate discussions in class
- Labs and projects that offer significant hands-on practice
- Each unit includes at least two lab exercises that reinforce the content specific to that unit. Programming requires the application of concepts presented earlier in the course to later units.
- Each unit includes a homework assignment that requires you to submit answers to multiple-choice questions or to perform research using the ITT Tech Virtual Library.

Instructional Materials and References

Student Textbook Package

- Liang, Y. D. (2011). *Introduction to java programming comprehensive version* (Custom 7th ed.). Boston, MA: Pearson Custom.
- Liang, Y. D. (2011). *Introduction to java programming VideoNotes website* (Custom 7th ed.). Boston, MA: Pearson Custom.
- Liang, Y. D. (2010). *Programming in java student CD* (Custom ed.). Boston, MA: Pearson Custom.
- Liang, Y. D. (2010). *Programming in java II student CD* (Custom ed.). Boston, MA: Pearson Custom.

References

ITT Tech Virtual Library

Log on to the ITT Tech Virtual Library at <http://library.itt-tech.edu/> to access online books, journals, and other reference resources selected to support ITT Tech curricula.

Books

You may click “Books” or use the “Search” function on the home page to find the following books.

- Books 24x7
 - Horton, Ivor. *Ivor Horton’s Beginning Java 2, JDK*. 5th ed. Indianapolis, IN: Wiley Publishing, Inc., 2005.
 - Jarc, Duane. *Learning Java Through Applications: A Graphical Approach*. Hingham, MA: Cengage Charles River Media, 2005.

- Kurniawan, Budi. *Java 5: A Beginner's Tutorial*. Vancouver, BC, Canada: BrainySoftware.com, 2006.
- Levenick, James. *Simply Java: An Introduction to Java Programming*. Hingham, MA: Cengage Charles River Media, 2006.
- Schildt, Herbert. *Java: The Complete Reference, J2SE*. 5th ed. Emeryville, CA: McGraw-Hill/Osborne, 2005.
- Sestoft, Peter. *Java Precisely*. 2nd ed. Cambridge, MA: MIT Press, 2005.

Program Links

You may click "Program Links" or use the "Search" function on the home page to find the following program links.

- School of Information Technology> Recommended Links> Introduction to Programming Using Java
- Tutorial Links> Tutorialized> Java> Miscellaneous

Other References

The following resources may be found **outside** of the ITT Tech Virtual Library.

Web sites

- Java Programming Notes
This Web page provides a collection of Java lessons categorized by topic. <http://www.leepoint.net/notes-java/index.html>
- Java Tutorial
This tutorial, Introduction to Containers, is on the official Java Web site maintained by Sun Microsystems. <http://java.sun.com/docs/books/tutorial/collections/intro/index.html>
- RoseIndia Java Tutorial
This Web site provides a comprehensive collection of Java tutorials from beginning to advanced levels. <http://www.roseindia.net/java/jdk6/index.shtml>

All links to Web references outside of the ITT Tech Virtual Library are always subject to change without prior notice.

Course Evaluation and Grading

Evaluation Criteria Table

The final grades will be based on the following categories:

CATEGORY	WEIGHT
Assignments	20%
Labs	35%
Project 1	8%
Project 2	8%
Project 3	9%
Final Exam	20%
Total	100%

Note: Students are responsible for abiding by the Plagiarism Policy.

Grade Conversion Table

The final grades will be calculated from the percentages earned in the course, as follows:

A	90–100%	4.0
B+	85–89%	3.5
B	80–84%	3.0
C+	75–79%	2.5
C	70–74%	2.0
D+	65–69%	1.5
D	60–64%	1.0
F	<60%	0.0