Degree Applicable

Glendale Community college
January 2010

COURSE OUTLINE

**Computer Science/Information Systems 141**
**Advanced Java**

## I. Catalog Statement

Computer Science/Information Systems 141 is a hands-on course in which students work with advanced features of the Java programming language such as Java Database Connectivity, Servlets, Remote Method Invocation, and multimedia. Emphasis for the course is on creating a complete, distributable project incorporating these features.

Units – 3.0
Lecture Hours – 3.0

Recommended Preparation : Computer Science/Information Systems 139 or equivalent.

## II. Course Entry Expectations

Skill Level Ranges: Reading 5; Writing 4; Listening/Speaking 5; Math 2.

## III. Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:

1. create Java programs that connect to Structured Query Language (SQL) databases using Java Database Connectivity (JDBC);
2. create Java servlet programs – clients and servers and demonstrate these in a network environment;
3. demonstrate connections between Java programs using Java Remote Method Invocation (RMI) tools in a network environment;
4. incorporate images, sound, and animation in complete Java applications;
5. combine these tools to create a complete Java project.

## IV. Course Content

**Total Contact Hours = 48**

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|---|---|---|
| A. | Review of Java and Object Oriented Programming | 5 |
| B. | Laboratory Exercises | 5 |
| C. | Inheritance and polymorphism revisited. Design a class (programming unit) for reuse | 2 |
| D. | Laboratory Exercises | 2 |
| E. | Multithreaded classes and their applications | 5 |
| F. | Laboratory Exercises | 5 |
| G. | Introduction to JDBC | 5 |
| H. | Laboratory Exercises | 5 |
| I. | Connecting programs to data using JDBC | 5 |

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|---|---|---|
| J. | Laboratory Exercises | 5 |
| K. | Introduction to servlets and the servlet classes | 2 |
| L. | Laboratory Exercises | 2 |
| M. | Using servlets to connect programs across a network | 2 |
| N. | Laboratory Exercises | 2 |
| O. | Remote Method Invocation (RMI) classes and their use | 2 |
| P. | Laboratory Exercises | 2 |
| Q. | Combining Java tools to solve a commercial problem | 20 |
| R. | Laboratory Exercises | 20 |

## V. Methods of Presentation

The following instructional methodologies may be used in the course:

1. lecture/demonstration;
2. interactive discussion;
3. hands-on activities and exercises.

## VI. Assignments and Method of Evaluation

1. Java Programs demonstrating JDBC, servlets, RMI, and multimedia concepts.
2. Final project incorporating these tools into a complete Java application and/or applet.

## VII. Textbook

Deitel and Deitel, Java: How to Program, 3rd Edition.
Upper Saddle River, New Jersey: Prentice-Hall, 1999.
11th Grade Textbook Reading Level. ISBN: 0-13-012507-05

## VIII. Student Learning Objectives

Upon successful completion, the student will be able to:

1. design and create Java programs that connect to Structured Query Language (SQL) databases using Java Database Connectivity (JDBC);
2. design and create Java servlet programs (clients and servers) and demonstrate these in a network environment;
3. demonstrate connections between Java programs using Java Remote Method Invocation (RMI) tools in a network environment;
4. incorporate images, sound, and animation in complete Java applications.