

Pellissippi State Community College
Master Syllabus

**INTRODUCTION TO PROGRAMMING USING JAVA
CSIT 1510**

Class Hours: 3.0

Laboratory Hours: 3.0

Credit Hours: 4.0

Revised: July 28, 2010

Instructor:

Office:

Phone:

E-mail:

Catalog Course Description:

A study of the Java programming language, object-oriented programming, design and algorithm development. Topics include language structure and syntax, methods, program control statements, classes, strings, arrays and applets.

Entry Level Standards:

The entering student should have a familiarity with computers. The student should be able to keyboard at least 28 words per minute. The student must have math, writing, verbal and English language skills at the college level.

Co-requisites: CSIT 1110

Textbooks and Other Related Material Basic to the Course:

Textbook: Introduction to Java Programming, Comprehensive Version, 7th Ed., by Y. Daniel Liang, Pearson/Prentice-Hall.

I. WEEK/CHAPTER/TOPIC BASIS:

<u>Week</u>	<u>Topic(s)</u>
1	Introduction to Java Programming and Algorithms
2	Software Development Environment-Creating; Compiling; Executing a Java Program
3	Data Types, Variables, Operations; Interactive I/O, The String Type, Programming Style, Documentation
4	Selection Algorithms; Conditional Statements; Switch Statements
5	Formatting Output
6	Repetition Statements and Algorithms; While/Do-While/For Loops; Case Study: (GUI) Controlling a Loop with a Confirmation Dialog
7	Methods; Defining and Calling a Method; Passing Parameters by Values
8	Overloading Methods; The Scope of Variables; The Math Class; The Random Class; Case Study: Generating Random Characters

<u>Week</u>	<u>Topic(s)</u>
9	Array Basics
10	Passing Arrays to Methods; Variable-Length Argument Lists; Two-Dim Arrays
11	The Arrays Class; Search and Sort
12	Objects and Classes; Constructors; Accessing Objects via Reference Variables
13	Static Variables; Visibility Modifiers; The This Reference; Class Abstraction and Encapsulation; Array of Objects
14	OOD; UML Class Diagram
15	Final Exam

II. **COURSE OBJECTIVES:**

- A. Understand the syntax and semantics of the Java programming language. II, III, IV, VI, VII, VIII, IX, XI, XII
- B. Write Java applications to solve a wide variety of problems. II, III, IV, VI, VII, VIII, IX, XI, XII
- C. Understand and use structured programming concepts. I, III, V, VI, VII, IX, X, XI

III. **INSTRUCTIONAL PROCESSES:** Students will

1. Gain a basic proficiency in a Java IDE. *Technological Literacy, Active Learning*
2. Gain a basic proficiency in an industry standard object-oriented programming language. *Technological Literacy, Mathematics Outcome, Active Learning, Communication*
3. Learn to analyze and solve problems using structured and object-oriented techniques. *Technological Literacy, Mathematics Outcome, Active Learning*
4. Use professionally accepted methods and materials in completion of applications. *Technological Literacy, Transitional Strategy, Active Learning*
5. Use professional tools to produce software components and documentation. *Technological Literacy, Transitional Strategy, Active Learning*
6. Design software solutions to problems. *Technological Literacy, Mathematics Outcome, Active Learning, Communication*

IV. **EXPECTATIONS FOR STUDENT PERFORMANCE:** *The student should be able to*

1. Recognize basic data types. A, B
2. Use the following Java operators: arithmetic, logical, conditional, assignment. A, B, C
3. Create and use classes and objects. A, B, D, E, G
4. Write and use user-defined methods. A, B, C, D
5. Use arrays and strings. A, B, C, D
6. Understand array sorting and searching algorithms. C, F

7. Use program control structures. A, B, C
8. Write constructors and destructors. A, B, C, D
9. Use some Java classes and their properties and methods. A, B, C, D
10. Understand and use class member access modifiers. A, B, D
11. Understand and use inheritance. A, B, D
12. Understand and use abstract classes. A, B, D
13. Understand encapsulation. A, B, D
14. Design objects to solve problems. E, F, G, H
15. Write algorithms to implement object behavior. E, F, G, H
16. Learn fundamental algorithms. B, C, F
17. Write well-structured objects and programs. A, B, C, D, E, F, G, H
18. Use the Java string class. A, B, D

V. EVALUATION:

A. **Testing Procedure:**

Students are evaluated primarily on the basis of tests and laboratory assignments. Each instructor must provide full details the first week of class via a syllabus supplement. A minimum of three tests is recommended. Tests will cover material presented in class. Tests are not to be missed without a valid excuse.

B. **Laboratory Expectations:**

Lab attendance is required. Assignments will be given and must be completed and handed in at the designated date. The student is expected to turn in all required documentation for each lab. At least 7 labs are recommended.

C. **Field Work:** N/A

D. **Other Evaluation Methods:**

Class participation, quizzes and homework will also comprise the final grade for the course.

E. **Grading Scale:**

93 – 100	A
88 – 92	B+
83 – 87	B
78 – 82	C+
73 – 77	C
65 – 72	D
Below 65	F

VI. POLICIES:

A. Attendance Policy:

Pellissippi State Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. [NOTE: No differentiation is noted for excused/unexcused absences. These will be treated as an absence.]

B. Academic Dishonesty:

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions which may be imposed through the regular Pellissippi State procedures as a result of academic misconduct, the instructor has the authority to assign an F or a zero for the exercise or examination or to assign an F in the course.

C. Computer Usage Guidelines:

College-owned or –operated computing resources are provided for use by students of Pellissippi State. All students are responsible for the usage of Pellissippi State’s computing resources in an effective, efficient, ethical and lawful manner.

D. Accommodation for Disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 134 or 126 or by phone: 694-6751(Voice/TTY) or 539-7153. More information is available at www.pstcc.edu/departments/swd/

E. Other:

Students are expected to promptly attend all lecture and lab classes as assigned. If a class is missed, student must make up all work and get notes and/or handouts.