Class Hours:  3.0  Credit Hours: 4.0
Laboratory Hours:  3.0  Date Revised:  Fall 2014

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

Textbook(s) and Other Course Materials:


I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Java Programming and Algorithms</td>
</tr>
<tr>
<td>2</td>
<td>Software Development Environment-Creating; Compiling; Executing a Java Program</td>
</tr>
<tr>
<td>3</td>
<td>Data Types, Variables, Operations; Software Development Process/ Programming Style, Documentation</td>
</tr>
<tr>
<td>4</td>
<td>Selection Algorithms; Conditional Statements; Switch statements</td>
</tr>
<tr>
<td>5</td>
<td>Mathematical Functions, Characters, String; Formatting Output</td>
</tr>
<tr>
<td>6</td>
<td>Repetition Statements and Algorithms; while/do-while/for Loops; Case Study: Checking Palindromes</td>
</tr>
<tr>
<td>7</td>
<td>Methods; Defining and Calling a Method; Passing Parameters by Values</td>
</tr>
<tr>
<td>8</td>
<td>Overloading Methods; The Scope of Variables; Case Study: Generating Random Characters</td>
</tr>
<tr>
<td>9</td>
<td>Objects and Classes; Constructors; Accessing Objects via Reference Variables</td>
</tr>
</tbody>
</table>
II. Course Goals*:

The course will:

A. Develop an awareness of syntax and semantics of the Java programming language. II, III, IV
B. Require students to practice elements of the work ethics. I
C. Provide students with a basic proficiency in an industry standard object-oriented programming language. I, II, III, IV, V
D. Develop students’ analytical and problem solving skills using object-oriented techniques. III, IV, V
E. Enhance students’ knowledge of professionally accepted methods and materials in completion of applications. I, II, III, IV, V

*Roman numerals after course objectives reference goals of the CSIT program.

III. Expected Student Learning Outcomes*:

Students will be able to:

1. Use a Java IDE. (A, B, C, D)
2. Use basic data types. (A, C, D)
3. Write algorithms to solve problems (C, D)
4. Use the following Java operators: arithmetic, logical, conditional, assignment. (A, C)
5. Create and use classes and objects. (A, B, C, D)
6. Create and use user-defined methods. (A, C, D)
7. Create and use arrays and strings. (A, C, D)
8. Use array sorting and searching algorithms. (A, C, D)
9. Use program control structures. (A, C)
10. Write constructors. (A, C, D)
11. Use the Java API (B, C, D)
12. Use class member access modifiers. (A, D)
13. Use encapsulation in creating objects. (A, C, D)
14. Design objects to solve problems. (C, D)
15. Create fundamental algorithms such as finding the minimum/maximum and computing a sum and average. (A, C, D)

*Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

IV. Evaluation:

A. Testing Procedure: at least 50% of grade

Tests and/or labs requiring students to solve problems in a proctored environment are at least 50% of the student grade described below.

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 two tests is recommended. Tests will cover material presented in class. Tests are not to be missed without a valid excuse.

B. Laboratory Expectations: At least 50% of grade

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 6 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:

\[
\begin{array}{c|c}
93 – 100 & A \\
88 – 92 & B+ \\
83 – 87 & B \\
78 – 82 & C+ \\
73 – 77 & C \\
65 – 72 & D \\
Below 65 & F \\
\end{array}
\]

V. Policies:

A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which
the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one’s own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

C. Accommodations for disabilities:

Students that 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 Disability Services (DS) in order to receive accommodations in this course. Disability Services may be contacted by sending email to disabilityservices@pstcc.edu, or by visiting Alexander 130. More information is available at http://www.pstcc.edu/sswd/.

D. Other Policies:

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.

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.