A Correlation and Narrative Brief of

Introduction to Java Programming
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To the

Tennessee Learning Expectations for Computer Programming
Overview
Comprehensive coverage for an introductory computer science course.

Features

- Unified Modeling Language graphical notations throughout — Describes classes and their relationships; teaches students design and development of Java programs using the industry standard modeling technique.
- Practical examples on gaming (simulating lottery, interactive quiz, Sudoku), business/financial (computing loan payments, taxes, and printing payroll statements), science (body mass index, wind chill temperature) — Replaces pure mathematical examples such as computing deviations and matrix multiplications.
- Reinforces key concepts with objectives lists, introduction and chapter overviews, easy-to-follow examples, chapter summaries, review questions, programming exercises, and interactive self-tests.
- Online instructor support package includes interactive and animated slides (Java code can be compiled within the PowerPoint slide), TestGen Test Bank (with over 2000 multiple-choice questions), solutions to all programming exercises, sample exams and supplemental exercises.
- Case studies offer additional examples for learning the fundamentals of programming, such as writing loops.
- Notes and tips throughout offer valuable advice and insight on important aspects of program development.

Table of Contents
Chapter 1  Introduction to Computers, Programs, and Java
Chapter 2  Elementary Programming
Chapter 3  Selections
Chapter 4  Loops
Chapter 5  Methods
Chapter 6  Single-Dimensional Arrays
Chapter 7  Multidimensional Arrays
Chapter 8  Objects and Classes
Chapter 9  Strings and Text I/O
Chapter 10  Thinking in Objects
Chapter 11  Inheritance and Polymorphism
Chapter 12  GUI Basics
Chapter 13  Exception Handling
Chapter 14  Abstract Classes and Interfaces
Chapter 15  Graphics
Chapter 16  Event-Driven Programming
Chapter 17  Creating Graphical User Interfaces
Chapter 18  Applets and Multimedia
Chapter 19  Binary I/O
Chapter 20  Recursion
Chapter 21  Generics
Chapter 22  Java Collections Framework
Chapter 23  Algorithm Efficiency
Chapter 24  Sorting
Chapter 25  Lists, Stacks, and Queues, and Priority Queues
Chapter 26  Binary Search Trees
Chapter 27  Graphs and Applications
Chapter 28  Weighted Graphs and Applications
Chapter 29  Multithreading
Chapter 30  Networking
Chapter 31  Internationalization
Chapter 32  JavaBeans and Bean Events
Chapter 33  Containers, Layout Managers, and Borders
Chapter 34 Menus, Toolbars, and Dialogs
Chapter 35  MVC and Swing Models
Chapter 36  JTable and JTree
Chapter 37  Java Database Programming

Chapter 38-48 are bonus chapters on the Web
Chapter 38  Advanced Java Database Programming
Chapter 39  Servlets
Chapter 40  JavaServer Pages
Chapter 41  JSF and Visual Web Development
Chapter 42  Web Services
Chapter 43  Remote Method Invocation
Chapter 44  Java 2D
Chapter 45  AVL Trees and Splay Trees
Chapter 46  2-4 Trees and B-Trees
Chapter 47  Red-Black Trees
Chapter 48  Hashing
**Computer Programming**

**Course Description:**
This course is designed to develop object-oriented programming language skills using high level languages such as Java, C++, BASIC. The student will utilize the commands, statements, and procedures of this language to develop computer programs. This first-level course leads to game programming. *(This course requires a computerized workstation for each student with appropriate program development tools and compiler software.)*

**Standard 1:0**

The student will develop and apply concepts related to human relations, safety, career development, communications, and leadership skills for a global workplace.

**Learning Expectations**

The student will:

<table>
<thead>
<tr>
<th>Standard</th>
<th>Expectation</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Demonstrate sensitivity to personal, societal, corporate, and governmental responsibility to community and global issues.</td>
<td>This standard falls outside of the program scope and sequence.</td>
</tr>
<tr>
<td>1.2</td>
<td>Demonstrate the interpersonal, teamwork, and leadership skills needed to function in diverse business settings, including the global marketplace.</td>
<td>This standard falls outside of the program scope and sequence.</td>
</tr>
<tr>
<td>1.3</td>
<td>Communicate effectively as writers, listeners, and speakers in diverse social and business settings.</td>
<td>This standard falls outside of the program scope and sequence.</td>
</tr>
<tr>
<td>1.4</td>
<td>Apply the critical-thinking and soft skills needed to function in students’ multiple roles as citizens, consumers, workers, managers, business owners, and directors of their own futures.</td>
<td>This standard falls outside of the program scope and sequence.</td>
</tr>
<tr>
<td>1.5</td>
<td>Analyze and follow policies for managing legal and ethical issues in organizations and in a technology-based society.</td>
<td>This standard falls outside of the program scope and sequence.</td>
</tr>
<tr>
<td>1.6</td>
<td>Investigate the life-long learning skills that foster flexible career paths and confidence in adapting to a workplace that demands constant retooling.</td>
<td>This standard falls outside of the program scope and sequence.</td>
</tr>
</tbody>
</table>
Tennessee Learning Expectations for Computer Programming

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<tr>
<td>1.7</td>
<td>Assess personal skills, abilities, aptitudes, and personal strengths and weaknesses as they relate to career exploration and apply knowledge gained from individual assessment to research and develop an individual career plan.</td>
</tr>
<tr>
<td>1.8</td>
<td>Examine the goals and principles of a professional organization. (Ex. Computer Science Club, BETA Club, FBLA)</td>
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<tr>
<td>1.9</td>
<td>Investigates online and office safety procedures and passes a written safety examination with 100% accuracy.</td>
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<tr>
<td>1.10</td>
<td>Demonstrates parliamentary procedure through office staff/chapter organizational meetings.</td>
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<tr>
<td>1.11</td>
<td>Apply appropriate typography concepts to industry documents.</td>
</tr>
</tbody>
</table>

This standard falls outside of the program scope and sequence.

Standard 2.0

The student will demonstrate proficiency in the background knowledge of computers and programming.

Learning Expectations

The student will:

2.1 Discuss the history of computers and programming languages. **SE:** 2-11, 18-22

2.2 Discuss the components of the computer. **SE:** 2-5, 18

2.3 Summarize the distinguishable characteristics of the **high level languages** such as **Java**, **C++**, and **BASIC**. **SE:** 5-22

2.4 Critique the role of computer programming in society. **Opportunities to address this standard appear on the following SE pages:** 5-22

*SE = Student Edition*
<table>
<thead>
<tr>
<th>Standard 3.0</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The students will use Program Development Tools as they relate to the programming development cycle. (CLE 3102.1.7, CLE 3102.2.1, CLE 3102.3.6, CLE 3102.3.1, CLE 3102.3.5, CLE 3102.3.6, CLE 3102.3.9, CLE 3103.1.7, CLE 3103.2.3, CLE 3108.1.7)</td>
<td></td>
</tr>
<tr>
<td>Learning Expectations:</td>
<td></td>
</tr>
<tr>
<td>The student will</td>
<td></td>
</tr>
<tr>
<td>3.1 Develop a detailed logic plan using a flowchart.</td>
<td>SE: 74, 79, 93, 94, 117, 125, 126</td>
</tr>
<tr>
<td>3.2 Demonstrate the use of Pseudocode.</td>
<td>SE: 24, 106</td>
</tr>
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<tr>
<th>Standard 4.0</th>
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<tbody>
<tr>
<td>The student will write and document an executable program in high level languages such as Java, C++, and BASIC using best coding practices</td>
<td></td>
</tr>
<tr>
<td>Learning Expectations</td>
<td></td>
</tr>
<tr>
<td>The student will:</td>
<td></td>
</tr>
<tr>
<td>4.1 Identify names for variables and their data types.</td>
<td>SE: 29-31, 58, 171, 271, 278, 280-281, 345-346</td>
</tr>
<tr>
<td>4.2 Recognize and apply the symbols for mathematical operations.</td>
<td>SE: 33-37, 39-41, 59, 72-73</td>
</tr>
<tr>
<td>4.3 Demonstrate the various methods of obtaining input/output and formatting output.</td>
<td>SE: 2, 4-5, 26-29, 55-58, 1167-1168, 1182</td>
</tr>
<tr>
<td>4.4 Analyze the task and implement a detailed logic plan.</td>
<td>SE: 24-26, 74, 79, 93, 94, 117, 125, 126</td>
</tr>
</tbody>
</table>

Opportunities to address this standard may also appear on the following pages:


<p>| 4.5 Demonstrate the use of control statements. | SE: 74-88, 93-94, 101-113, 116-140, 141-154, 157 |
| 4.6 Identify, illustrate, and perform operations using arrays. | SE: 198-223, 224-233, 236-250, 251-261, 825-830 |</p>
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<tr>
<td>4.8 Read and/or write data files for input/output purposes.</td>
<td><strong>SE:</strong> 650-668, 669-675</td>
</tr>
<tr>
<td>4.9 Debug the program and verify the output of the program.</td>
<td><strong>SE:</strong> 54-55, 59, 63</td>
</tr>
<tr>
<td>4.10 Show proper documentation, formatting, and commenting of source code.</td>
<td><strong>SE:</strong> 11, 51-53, 62</td>
</tr>
</tbody>
</table>

**Standard 5.0**

The student will work as a team member to develop integrated application using high level languages such as *Java, C++, and BASIC.*

**Learning Expectations**

The student team will:

5.1 Define the roles of each team members.  

**SE:** This standard falls outside of the program scope and sequence.

5.2 Solve a complex task using high level languages such as *Java, C++, and BASIC.*  

*Opportunities to address this standard appear on the following pages:*


5.3 Compare and contrast the advantages of working as a group.  

**SE:** This standard falls outside of the program scope and sequence.