CompuScholar, Inc.

Alignment to South Carolina **Computer Programming 1 with JAVA** Standards

9th - 12th grades

South Carolina Course Details:

Course Title:	5052 - Computer Programming 1 with JAVA
Grade Level:	9th - 12th grades
Standards Link:	CompProg1withJAVA.pdf

CompuScholar Course Details:

Course Title:	CompuScholar: Java Programming (Abridged)
Course ISBN:	978-0-9887070-4-7
Course Year:	2018

Note 1: Citation(s) listed may represent a subset of the instances where objectives are met throughout the course.

Note 2: Citation(s) for a "Lesson" refer to the "Lesson Text" elements and associated "Activities" within the course, unless otherwise noted. The "Instructional Video" components are supplements designed to introduce or re-enforce the main lesson concepts, and the Lesson Text contains full details.

Course Description

This course of study is designed to emphasize the fundamentals of computer programming. Topics include computer software, program design and development, and practical experience in programming, using modern, object-oriented languages.

Course Standards

A. SAFETY AND ETHICS	CITATION(S)
1. Identify major causes of work-related accidents in offices.	N/A
2. Describe the threats to a computer network, methods of avoiding attacks, and options in dealing with virus attacks.	Chapter 1, Lesson 5
3. Identify potential abuse and unethical uses of computers and networks.	Chapter 1, Lessons 4-5 Suppl. Chapter 3, Lesson 1
4. Explain the consequences of illegal, social, and unethical uses of information technologies, e.g., piracy; illegal downloading; licensing infringement; and inappropriate uses of software, hardware, and mobile devices.	Chapter 1, Lessons 4-5 Suppl. Chapter 3, Lesson 1
5. Differentiate between freeware, shareware, and public domain software copyrights.	Chapter 1, Lesson 4

6. Discuss computer crimes, terms of use, and legal issues such as copyright laws, fair use laws, and ethics pertaining to scanned and downloaded clip art images, photographs, documents, video, recorded sounds and music, trademarks, and other elements for use in Web publications.	Chapter 1, Lessons 4-5
7. Identify netiquette including the use of email, social networking, blogs, texting, and chatting.	Chapter 1, Lesson 4

B. EMPLOYABILITY SKILLS	**CITATION(S)**
1. Identify positive work practices, e.g., appropriate dress code for the workplace, personal grooming, punctuality, time management, and organization.	Chapter 18 (Team Project) Suppl. Chapter 2, Lesson 2
2. Demonstrate positive interpersonal skills, e.g., communication, respect, and teamwork.	Chapter 18 (Team Project) Suppl. Chapter 2, Lesson 2

C. STUDENT ORGANIZATIONS	**CITATION(S)**
1. Explain how related student organizations are integral parts of career and technology education courses.	Suppl. Chapter 2, Lesson 3
2. Explain the goals and objectives of related student organizations.	Suppl. Chapter 2, Lesson 3
3. List opportunities available to students through participation in related student organization conferences/competitions, community service, philanthropy, and other activities.	Suppl. Chapter 2, Lesson 3
4. Explain how participation in career and technology education student organizations can promote lifelong responsibility for community service and professional development.	Suppl. Chapter 2, Lesson 3

D. COMPUTER SYSTEMS	**CITATION(S)**
1. Define what a computer is and its purpose.	Chapter 1, Lessons 1 - 2
2. Define basic computer terminology.	Chapter 1, Lessons 1 - 2
3. Define basic programming terminology.	Chapters 2 - 4 and throughout the course
4. Identify basic hardware and software components.	Chapter 1, Lessons 1 - 2
5. Explain the flow of data and instructions through the computer system.	Chapter 7
6. Identify components of the programming development environment.	Chapter 2, Lessons 1 - 2 Chapter 3
7. Describe the concept of OOP (object-oriented programming).	Chapters 10, 11, 15, 16

E. PROGRAM DOCUMENTATION	CITATION(S)
1. Describe the purpose and value of the program.	Chapter 21 (Team Project) Suppl. Chapter 2, Lesson 1
2. Define the input for the program.	Chapter 21 (Team Project) Suppl. Chapter 2, Lesson 1
3. Define the output of the program.	Chapter 21 (Team Project) Suppl. Chapter 2, Lesson 1
4. Define variables and constants associated with the program using descriptive names and appropriate data types associated with the program.	Chapter 21 (Team Project) Suppl. Chapter 2, Lesson 1
5. Describe the scope of variables.	Chapter 8, Lesson 2 Chapter 10, Lesson 2
F. PROGRAMMING DESIGN	**CITATION(S)**
1. List in sequence the steps for developing a program.	Suppl. Chapter 2, Lesson 1
2. Develop an algorithm (pseudocode) for a program.	Chapter 17, Lesson 4
3. Key the program.	Every chapter activity within the course
4. Save the program.	Every chapter activity within the course
5. Execute the program.	Every chapter activity within the course
6. Debug the program for errors (e.g., syntax, run-time, and logic).	Chapter 9
7. Run the program to test the logical validity of an application program given appropriate data.	Chapter 9 and throughout the course

G. PROGRAMMING	CITATION(S)
1. Describe the purpose/function of different objects.	Chapter 10
2. Describe the purpose/function of an event procedure.	Chapter 12, Lesson 3
3. Identify correctly written Property assignment statements.	Chapter 4, Lesson 2 Chapter 10, Lesson 2
4. Demonstrate proper code commenting/documentation techniques.	Chapter 2, Lesson 2 and throughout the course
5. List and define arithmetic, relational, and logical/boolean operators.	Chapter 4, Lesson 2 Chapter 7, Lesson 1
6. Explain operator precedence.	Chapter 7, Lesson 1
7. Differentiate between commands and statements.	N/A

8. Write valid variable and constant declaration statements using appropriate data types.	Chapter 4, Lessons 1-2
9. Write valid variable and constant declaration statements using appropriate scope (e.g., local, global, static).	Chapter 4, Lesson 2 Chapter 10, Lesson 2
10. Write a program that will perform calculations on given data.	Chapter 6 Activity Chapter 17 Suppl. Chapter 1, Lessons 1, 5
11. Write an interactive program that includes features to get input and provide feedback/information (e.g, alerts, messages, input boxes).	Chapters 6, 12, 13
12. Identify different decision structures that control program flow.	Chapter 7, Lessons 2-5
13. Use built-in functions to generate random numbers.	Chapter 17, Lesson 1 Chapter 20, Lesson 1
14. Write a program using accumulators and counters.	Chapter 7, Lesson 4 Chapter 7 Activity Chapter 17, Lesson 4
15. Identify different looping/iteration structures that control program flow.	Chapter 7, Lessons 2-5
16. Use built-in properties and functions to manipulate classes and structures (e.g., String, Math).	Chapter 5 Chapter 17, Lesson 1
17. Describe the conversion from ASCII/Unicode to Hexadecimal and Binary.	Chapter 17, Lesson 2 Suppl. Chapter 1, Lesson 1
18. Describe the purpose/function of general sub procedures.	Chapter 8, Lesson 1
19. Describe the purpose/function of arguments and parameters.	Chapter 8, Lesson 2
20. Describe the purpose/function of function procedures.	Chapter 8, Lesson 1
21. Write a program using one or more general sub procedures and/or functions.	Chapter 8 and throughout the course
22. Write a program that passes arguments to another general sub procedure and/or function.	Chapter 8 and throughout the course