

**COMPUTER PROGRAMMING 1 with JAVA
Standards
COURSE CODE: 5052**

correlated to

A Guide to Programming Java: For Java SE 5 and SE 6

A. SAFETY AND ETHICS	Note: This section of the state standards appears in both Course 1 and 2.
1. Identify major causes of work-related accidents in offices.	See pages 20, 33
2. Describe the threats to a computer network, methods of avoiding attacks, and options in dealing with virus attacks.	See pages 18-19, 21-22, 34
3. Identify potential abuse and unethical uses of computers and networks.	See pages 18-19, 21-22
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.	See pages 18-19, 21-22
5. Differentiate between freeware, shareware, and public domain software copyrights.	See pages 21-22
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.	See pages 21-22, 23-24
7. Identify netiquette including the use of email, social networking, blogs, texting, and chatting.	See page 9
8. Describe ethical and legal practices in business professions such as safeguarding the confidentiality of business-related information.	See pages 21-22

B. EMPLOYABILITY SKILLS	Note: This section of the state standards appears in both Course 1 and 2.
1. Identify positive work practices, e.g., appropriate dress code for the workplace, personal grooming, punctuality, time management, and organization.	See pages 19-20
2. Demonstrate positive interpersonal skills, e.g., communication, respect, and teamwork.	See page 22
C. STUDENT ORGANIZATIONS	Note: This section of the state standards appears in both Course 1 and 2.
Explain how related student organizations are integral parts of career and technology education courses.	See the Lawrenceville Press website for free supplemental materials. LawrencevillePress.com
Explain the goals and objectives of related student organizations.	See the Lawrenceville Press website for free supplemental materials. LawrencevillePress.com
List opportunities available to students through participation in related student organization conferences/competitions, community service, philanthropy, and other activities.	See the Lawrenceville Press website for free supplemental materials. LawrencevillePress.com
Explain how participation in career and technology education student organizations can promote lifelong responsibility for community service and professional development.	See the Lawrenceville Press website for free supplemental materials. LawrencevillePress.com
D. COMPUTER SYSTEMS	Note: This section of the state standards appears in both Course 1 and 2.
Define what a computer is and its purpose.	See pages 1-4
Define basic computer terminology.	See pages 1-4

Define basic programming terminology.	See pages 5-6
Identify basic hardware and software components.	See pages 2-4
Explain the flow of data and instructions through the computer system.	See pages 6-9
Identify components of the programming development environment.	See pages 5-6
Describe the concept of OOP (object-oriented programming).	See pages 5-6
E. PROGRAM DOCUMENTATION	Note: This section of the state standards appears in both Course 1 and 2.
Describe the purpose and value of the program.	See page 35-39, 59
Define the input for the program.	See pages 40-41, 59-60
Define the output of the program.	See pages 41-42, 63
Define variables and constants associated with the program using descriptive names and appropriate data types associated with the program.	See pages 77, 87
Describe the scope of variables.	See page 77, 135
F. PROGRAMMING DESIGN	Note: This section of the state standards appears in both Course 1 and 2.
List in sequence the steps for developing a program.	See pages 96-98
Develop an algorithm (pseudocode) for a program.	See pages 66, 71-76
Key the program.	See pages 71-76
Save the program.	See pages 71-76
Execute the program.	See pages 71-76
Debug the program for errors (e.g., syntax, run-time, and logic).	See pages 136-137
Run the program to test the logical validity of an application program given appropriate data.	See pages 62, 89

G. PROGRAMMING	Note: This section of the state standards differs in Course 1 and in Course 2. The following standards are in the Course 1 document.
1. Describe the purpose/function of different objects.	See pages 59-60, 67-68, 80
2. Describe the purpose/function of an event procedure.	See pages 273, 277-278, 293-296
3. Identify correctly written Property assignment statements.	See pages 78, 83-84, 86, 88-89, 97-98
4. Demonstrate proper code commenting/documentation techniques.	See pages 61-62, 65, 77-78, 164-165
5. List and define arithmetic, relational, and logical/boolean operators.	See pages 17-18, 83-84, 105-106
6. Explain operator precedence.	See pages 112, 121
7. Differentiate between commands and statements.	See pages 61, 67-68, 71
8. Write valid variable and constant declaration statements using appropriate data types.	See pages 78-80, 87, 98
Write valid variable and constant declaration statements using appropriate scope (e.g., local, global, static).	See pages 77-78, 87, 99-103
Write a program that will perform calculations on given data.	See pages 99-103
Write an interactive program that includes features to get input and provide feedback/information (e.g, alerts, messages, input boxes).	See pages 99-103
Identify different decision structures that control program flow.	See pages 105-108, 118-119, 121, 122, 125
Use built-in functions to generate random numbers.	See pages 109-111, 125
Write a program using accumulators and counters.	See pages 108, 127, 131, 133, 136
Identify different looping/iteration structures that control program flow.	See pages 129-130, 136-137, 153
Use built-in properties and functions to manipulate classes and structures (e.g., String, Math).	See pages 113, 131-132, 138-139, 150-156

Describe the conversion from ASCII/Unicode to Hexadecimal and Binary.	See pages 9-10, 50
Describe the purpose/function of general sub procedures.	See pages 157-159, 164-165, 174
Describe the purpose/function of arguments and parameters.	See pages 44, 63, 160-161, 183
Describe the purpose/function of function procedures.	See pages 159-161, 162, 163, 164
Write a program using one or more general sub procedures and/or functions.	See pages 165-171, 175-178
Write a program that passes arguments to another general sub procedure and/or function.	See pages 160-161, 175-178
H. PROGRAMMING	Note: This section of the state standards differs in Course 1 and in Course 2. The following standards are in the Course 2 document.
Write a program that uses built-in functions to perform calculations on mathematical, business, and/or advanced mathematical data.	See pages 181-182, 187-189
Write a program that incorporates current Windows Application Standards (e.g. access keys, tab order, focus).	See pages 159-161, 165-171
Describe the purpose/function of an array (e.g., single, multidimensional).	See pages 237-241, 245-249, 265
Describe the purpose/function of a structure.	See pages 180-182, 184-185
Write a program that uses arrays/structures to store data.	See pages 238-239, 240-243, 245-249, 254-262
Write a program that uses color, graphics, animation, and/or sound.	See pages 296-301, 307
Describe the purpose/function of a class.	See pages 179-180
Write a program that uses a class.	See pages 180-182, 187-195, 196-202, 207-210
Write a program that creates an external file for data storage and manipulation.	See pages 317-320, 321-327, 331-335
Differentiate between various	See pages 337-350

types of sorting algorithms (e.g., linear, bubble, selection, insert, binary).	
Write a program that uses appropriate sorting algorithms.	See pages 352-356, 361-364
Write a program using advanced features (e.g., multiple windows, splash screens, menus, dialogs).	See pages 337-364
Write a program that integrates a spreadsheet.	See pages 317-335
Write a program that integrates a database.	See pages 317-335
Write a program that integrates a word processing document.	See pages 317-335
Write an advanced macro for application software.	See pages 317-335
Describe the purpose/function of Web controls.	See pages 121, 174, 305
Write a Web application program that includes appropriate input validation.	See pages 149, 150-156