Virginia CTE

Programming (6640)

Exploring Programming Concepts P.1	1	**Describe the development of computers and current industry trends in the programming field.** P.1.1
	2	**Describe the development of programming languages and applications.** P.1.2
	3	**Describe the functions of computer hardware, computer software, and computer system components.** P.1.3
	4	**Compare computer operating systems.** P.1.4
	5	**Identify the software development life cycle (SDLC).** P.1.5
	6	**Describe the integrated development environment (IDE) for a specific programming language.** P.1.6
	7	**Describe basic concepts of a programming language.** P.1.7
Using Algorithmic Procedures P.2	1	**Analyze the problem statement.** P.2.1
	2	**Create possible solutions to the problem.** P.2.2
	3	**Determine the best solution to the problem.** P.2.3
Implementing Programming Procedures P.3	1	**Design a program, using an algorithm, pseudocode, a flowchart, and/or a decision table.** P.3.1
	2	**Code the program, using a programming language.** P.3.2
	3	**Test the program with sample data.** P.3.3
	4	**Debug the program.** P.3.4
	5	**Document the program.** P.3.5
	6	**Implement the program.** P.3.6
	7	**Describe maintenance procedures.** P.3.7
Ma Fu		**dentify syntax errors of a given programming language.** P.4.1
		.dentify industry standards for a graphical user interface (GUI). P.4.2

Skip to main content

	3 **Create a graphical user interface that adheres to industry standards.** P.4.3
	4 **Code a program that will produce formatted output.** P.4.4
	5 **Code a program that uses mathematical operators and built-in functions.** P.4.5
	6 **Write a program that uses variables and constants.** P.4.6
	7 **Write a program that accepts user input.** P.4.7
	8 **(Optional) Write a program that uses arrays.** P.4.8
	9 **Write a modular program that uses functions or methods.** P.4.9
	10 **Write a program that uses conditional structures.** P.4.10
	11 **Write a program that uses looping structures.** P.4.11
	12 **Write a program that uses counters and accumulators.** P.4.12
Developing Interactive Multimedia Applications P.5	1 **Code a program to display graphics.** P.5.1
	2 **Code a program to incorporate multimedia.** P.5.2
	3 **Code a program to animate objects.** P.5.3
	4 **Examine the history of game design and development.** P.5.4
	5 **(Optional) Analyze the effect of intellectual property law on game design.** P.5.5
	6 **(Optional) Identify the target markets for game applications.** P.5.6
	7 **(Optional) Identify game genres.** P.5.7
	8 **Examine a variety of game programming platforms.** P.5.8
	9 **Create a storyboard.** P.5.9
	10 **Code a game program from the storyboard.** P.5.10
	11 **Create a game object.** P.5.11
	12 **Specify behaviors of a game object.** P.5.12
	13 **Develop a game program that uses a scoring method.** P.5.13
	14 **Create a game program with multiple levels.** P.5.14
Us Te	**xplain how to locate resources and references to aid program evelopment.** P.6.1

Skip to main content

	2 Evaluate sample code obtained from the Internet and/or other sources. P.6.2
	3 (Optional) Develop a web page, using hypertext markup language (HTML) and cascading style sheets (CSS) and/or JavaScript. P.6.3
Preparing for Industry Certification P.7	1 (Optional) Describe the process and requirements for obtaining industry certifications related to the Programming course. P.7.1
	2 (Optional) Identify testing skills/strategies for a certification examination. P.7.2
	3 (Optional) Demonstrate ability to successfully complete selected practice examinations (e.g., practice questions similar to those on certification exams). P.7.3
	4 (Optional) Successfully complete an industry certification examination representative of skills learned in this course (e.g., MCP, IC3). P.7.4
Developing Employability Skills P.8	1 Identify careers in the information technology industry. P.8.1
	2 Describe ways that computer programs can be used in business and industry. P.8.2
	3 Create or update a résumé. P.8.3
	4 Investigate information technology educational and job opportunities. P.8.4
	5 Assemble a professional portfolio. P.8.5
	6 Describe basic employment activities. P.8.6
	7 (Optional) Deliver an oral presentation of the professional portfolio. P.8.7
	8 Identify potential education and employment barriers for nontraditional groups and ways to overcome those barriers. P.8.8