Options EHS Introduction to Coding		Scope and Sequence
Unit	**Lesson**	**Objectives**
Course Software Installation		
	Getting Started	
Introduction to Programming		
	Introduction	
	Programming Overview	
		Define computer program, programming, and programming language.
		Discuss the history and development of programming languages.
		Identify persons who contributed significantly to the field of computer programming.
	Algorithms	
		Define and describe the purpose of algorithms.
		Identify examples of algorithmic problem solving in everyday life.
	Programming Design	
		Define and discuss the significance of programming design.
		Identify three types of programming design.
		Define and discuss top-down programming design.
		Define and discuss structured programming design.
		Define and discuss object-oriented programming design.
	Logic Problems	
		Define logic and logic problems in relation to computer programming.
		Give examples of logic problems in relation to computer programming.
		Identify and discuss strategies for solving logic problems.
	Writing a Problem Statement	

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		Define problem statement.
		Describe the importance of writing problem statements when designing software.
		Identify characteristics of effective problem statements.
		Analyze writing a problem statement.
	Exploring a Problem and Communicating a Solution	
		Describe strategies used to explore a problem.
		Explain how to communicate the design of an algorithm and the flow of data.
	Using Flowcharts and Pseudocode	
		Communicate the design of a program in a flowchart.
		Communicate the design of a program in pseudocode.
		Analyze the use of flowcharts and pseudocode in designing a computer program.
	Summary	
	Unit Test	
Writing and Testing Code		
	Introduction	
	Variables and Data Types	
		Define and discuss the use of variables.
		Define and discuss the use of data types.
		Identify common data types used in programming.
	Functions, Procedures, Arguments and Parameters	
		Define and discuss the use of procedures and functions.
		Analyze the similarities and differences between procedures and functions.

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		Define and discuss the use of parameters and arguments.
	Conditional Statements	
		Define and discuss the use of conditional statements in computer programming.
		Analyze the use of if statements.
		Analyze the use of else and elif statements.
	Iteration	
		Define and describe the use of iteration in computer programming.
		Identify the use of iteration to repeat a set of programming instructions.
	Internal Data Representation	
		Describe computer numbering systems and internal data representation.
		Identify binary, octal, decimal, and hexadecimal number systems.
		Describe how to convert between binary and decimal number systems.
	Integrated Development Environments	
		Define integrated development environment (IDE).
		Identify the components of an IDE and the purpose of each.
		Describe and differentiate between compilers and interpreters.
		Identify popular IDEs.
	Resources for Programmers	
		Identify reference materials for computer programming.
		Identify other resources for computer programming.
	Program with Variables	
		Describe naming conventions for variables.

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Unit	**Lesson**	**Objectives**
		Describe the importance of using correct syntax.
		Create variables of different data types and use them in code.
	Program with Functions and Arguments	
		Analyze the use of syntax when using functions and arguments.
		Write a function, with and without an argument.
	Testing and Fixing Code	
		Describe the process of testing code.
		Describe the process of fixing and verifying code.
	Summary	
	Unit Test	
Programming with Lists and Loops		
	Introduction	
	Use Conditional Statements	
		Use if-then statements in a program.
		Use else-if statements in a program.
	Use Data Structures	
		Define and give examples of ordered data structures.
		Use a list and list methods in a program.
		Describe an array and how it differs from a list.
	Use Iteration	
		Use iteration to repeat a set of programming instructions.
		Use iteration to change an ordered data structure.

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Unit	**Lesson**	**Objectives**
	Readable Code	
		Define readable code.
		Identify the characteristics of readable code.
		Discuss the importance of writing code that is readable.
		Analyze how code formatting improves readability.
	Encode and Decode Text	
		Define and discuss the use of character encoding.
		Define and differentiate between ASCII and Unicode character encoding.
		Write a program to encode a text string in Unicode.
		Write a program to decode a Unicode character encoding into text.
	Types of Errors	
		Define errors in the context of computer programming.
		Identify three types of errors.
		Define and discuss syntax errors.
		Define and discuss run-time errors.
		Define and discuss logic errors.
	Debugging a Program	
		Define bugs and debugging.
		Define and differentiate between diagnosing and troubleshooting.
		Debug a program.
	Summary	
	Unit Test	

Options EHS Introduction to Coding		Scope and Sequence
Unit	**Lesson**	**Objectives**
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	