

# **PROGRAMMING I - Visual Basic**

## **Course Description:**

This hands-on Visual Basic training course provides a thorough introduction to programming including topics like variables, selection control structures, repetition control structures, logic and methods. The main goal of the course is to enable the students to create visual applications with Visual Basic by utilizing computer science strategies. Students will learn to build effective user interfaces with Visual Basic controls, forms, and other GUI components. Students will also receive an introductory understanding of the Visual Basic language. Students will learn the use of the debugging and testing tools available in Visual Studio. The course also includes an introduction to object-oriented programming techniques.

## **Chapter 1 - Form and Controls**

As evidenced based on classroom assessments, the student is able to:

- LT1.1            Use Visual Studio's form designer to create a user interface
- LT1.2a        Define the roles and distinctions between text boxes and labels
- LT1.2b        Write a program that demonstrates the effective use of text boxes for user input and labels for displaying information
- LT1.3a        Describe the conventions for naming form objects and their significance
- LT1.3b        Apply consistent naming conventions to form objects in a programming project
- LT1.4            Understand the difference between the "name" and "text" properties of objects
- LT1.5a        Define the purposes of checkboxes and option buttons
- LT1.5b        Create a program that utilizes checkboxes for selecting multiple options and option buttons for selecting a single option
- LT1.6            Program basic lines to start and end a program

## **Chapter 2 - Operations and Data Structures**

As evidenced based on classroom assessments, the student is able to:

- LT2.1a        Explain the concept of variables and their role in programming
- LT2.1b        Create variables and assign values to them in a program
- LT2.2a        Differentiate between different data types and explain their appropriate usage
- LT2.2b        Utilize different data types appropriately in a program
- LT2.3a        Describe how to obtain user input and its importance in programming
- LT2.3b        Capture user input and incorporate it into the program's logic
- LT2.4            Write a program that makes calculations from user input
- LT2.5a        Describe the purpose and importance of documenting a program
- LT2.5b        Include appropriate comments in my program to document its purpose and functionality

LT2.6            Correctly format decimal variables within a program

### **Unit 3 - Conditionals and Control Statements**

As evidenced based on classroom assessments, the student is able to:

- LT3.1a           Evaluate numerical logic statements in conditional statements
- LT3.1b           Use numerical logic statements in conditional statements in a program
- LT3.2           Utilize String logic statements effectively in conditional statements in a program
- LT3.3           Integrate logic statements from radios or checkboxes into conditional statements in a program
- LT3.4a           Explain the structure of all types of statements
- LT3.4b           Use if-else conditional statements in a program
- LT3.5           Use if-else-if conditional statements in a program
- LT3.6           Use nested conditional statements appropriately in a program
- LT3.7           Read and understand conditional statements in code

### **Chapter 4 - Loop Statements**

As evidenced based on classroom assessments, the student is able to:

- LT4.1a           Explain the syntax of a for loop
- LT4.1b           Implement for loops in a program
- LT4.2           Use definite loops to solve a problem
- LT4.3           Use indefinite loops to solve a problem
- LT4.4           Read and trace programs containing loops
- LT4.5           Use nested loops to solve problems

West Salem High School is a Target-Based Grading and Reporting School. The learning targets above appear in the Skyward gradebook. Teachers provide feedback on each learning target to parents and students via the Skyward gradebook using a score of 3 (Proficient), 2 (Approaching), 1 (Needs Support), or 0 (No Evidence).