

DEPARTMENT: COMPUTER INSTRUCTION	COURSE TITLE: BASIC PROGRAMMING COURSE NUMBER: 581
GRADE(S): 9-12	PRE-REQUISITES (IF ANY): CONCURRENT ENROLLMENT IN OR SUCCESSFUL COMPLETION OF ALGEBRA

UNIT	LENGTH	CONTENT	SKILLS	METHODS OF ASSESSMENT	FRAMEWORK STRAND(S) & STANDARD(S)
Introduction	1 week	<ul style="list-style-type: none"> Brief overview of the history of programming languages The Visual Basic startup screen The Main Window The Form Window The Toolbox Window The Project Explorer Window The Properties Window Writing Visual Basic code: the Code Window Making an executable file Industry standards for naming 	<p>Students will:</p> <ul style="list-style-type: none"> Memorize the various components of the VB work space. Set properties of objects by changing settings in the Properties window. Work with VB controls: access VB Help, add and delete controls to and from the VB form, move and size controls, select multiple controls, save files under a different name. Use the industry standards for naming objects. Write simple code. 	<ul style="list-style-type: none"> Exercises Programs Quizzes Note-taking 	
Designing Applications	2 weeks	<ul style="list-style-type: none"> Procedure-oriented programming languages vs. Object-oriented/event-driven languages (OOED) Planning an OOED Application: identifying the application's tasks, identifying the objects, identifying the events, sketching the user interface, layout and organization of the interface TOE Charts: Task, Object, Event Building the user interface: industry standards for design; including graphics, color; Setting form design properties; adding text boxes Controlling the focus with the TabIndex property Locking controls Assigning access keys Coding an application: pseudocode Assignment statements Visual Basic Methods Internal Documentation: Industry standard Writing Visual Basic equations Visual Basic Functions Testing and Debugging Assembling the documentation 	<p>Students will:</p> <ul style="list-style-type: none"> Appreciate the differences among programming languages. Work in the application design process: create TOE charts and sketches of an application. Use the industry standards for design of the Graphical User Interface, (GUI). Create a graphical user interface and adjust various properties. Work with the TabIndex property to understand how the user focus can be set. Lock the controls. Assign access keys. Write pseudocode to understand exactly what will be required of the application code. Use assignment statements to assign a value to the property of an object while the application is running. Use VB methods, which are predefined VB procedures. Use internal documentation as a way to write notes within the code so that other programmers may easily understand the purpose of the code. Write Visual Basic equations so that the program may perform. calculations; understand 	<ul style="list-style-type: none"> Exercises Programs Note-taking 	

			<p>the order of precedence.</p> <ul style="list-style-type: none"> • Use VB functions, predefined procedures that result in a value. • Work through the testing and debugging procedures. • Assemble all documentation so that the importance of all aspects of the application design and creation process are emphasized. 		
Using Variables and Constants	4 weeks	<ul style="list-style-type: none"> • Using variables to store information • Data types • Naming variables • Declaring variables • The scope of a variable • Option Explicit statement • Creating local, form-level and global variables • Code modules • Symbolic constants • Concatenating Strings • InputBox Function 	<p>Students will:</p> <ul style="list-style-type: none"> • Demonstrate an understanding of what types of data to use in variables to accomplish certain tasks. • Use industry standard naming conventions for variables. • Declare variables for local, form-level and global situations. • Declare symbolic constants. • Use the ampersand (&) to connect strings together. • Code the inputbox function. 	<ul style="list-style-type: none"> • Exercises • Programs • Quizzes • Note-taking • Projects 	
The Selection Structure	2.5 weeks	<ul style="list-style-type: none"> • If...Then...Else and Select Case Statements • Using a Flowchart • Coding the Selection Structure • Logical Operators • The Ucase Function • Nested Selection Structures • The Case Form of the Selection Structure • The Select Case Statement • Using To and Is in an Expressionlist • Option Buttons and Check Boxes • User Defined Sub Procedures • The Call Statement • Static Variables • MsgBox Function • SelStart and SelLength Properties 	<p>Students will:</p> <ul style="list-style-type: none"> • Demonstrate an understanding that selection structure makes a decision or comparison and then selects a path. • Read and create flowcharts, an industry standard form for planning code. • Write selection structure code. • Use logical operators in code to combine conditions into one compound condition. • Understand the case sensitivity in coding through the use of Ucase. • Work with nested selection structures to learn how to develop increasingly complex code. • Demonstrate an understanding that case form of the select case statement allows for varying results depending on which information is input. • Use To and Is to specify a range of values in an expression list. • Work with option buttons and check boxes to understand their differences and when each should be used. • Demonstrate an understanding of when to use user defined procedures. 	<ul style="list-style-type: none"> • Exercises • Programs • Note-taking • Projects 	

The Repetition Structure	2.5 weeks	<ul style="list-style-type: none">• Repetition Structure (Looping)• For Next Loop• Do While and Do Until Loops• Control Arrays	Students will: <ul style="list-style-type: none">• Understand that the repetition structure tells the computer to repeat program instructions a specified number of times or until some condition is met.• Code the for next, do while and do until loops.• Understand that a control array allows for assigning the same name to all of the controls within a group that perform the same tasks.	<ul style="list-style-type: none">• Exercises• Programs• Note-taking• Projects	
--------------------------	-----------	---	---	---	--