

<b>Module Title:</b>	Computer Applications
<b>Language of Instruction:</b>	English
<b>Credits:</b>	5
<b>NFQ Level:</b>	6
<b>Module Delivered In</b>	No Programmes
<b>Teaching &amp; Learning Strategies:</b>	A combination of lectures using powerpoints, demonstrations, practical assignments, and a programming project will be used.
<b>Module Aim:</b>	To give students an understanding of the concepts of programming, problem solving and programming logic, as well as the design techniques of an event-driven language.
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Demonstrate an understanding of the program development cycle and the fundamental building blocks of programming languages: Data types, decisions, sequence, selection and repetition
LO2	Load, run and debug a project in the Visual Basic Integrated Development Environment
LO3	Code a Windows application by creating event driven and general procedures
LO4	Create graphics and animations within a form
LO5	Given a brief, design and code the forms to create an application that runs under Windows
<b>Pre-requisite learning</b>	
<b>Module Recommendations</b> <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
<b>Incompatible Modules</b> <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Requirements</b> <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

## Module Content & Assessment

### Indicative Content

#### Introduction to Visual Basic

Understand general computer terminology and operate the college network. Navigate The Windows Operating system and Visual Basic Environment. Describe the process of visual program design and development. Explain the term event-driven programming. Explain the concepts of objects, properties, and methods. List and describe the three steps for writing a Visual Basic project. Describe the various files that make up a Visual Basic project. Identify the elements in the Visual Basic environment. Define design time, run time, and break time. Write, run, save, print, and modify your first Visual Basic project. Identify compile errors, run-time errors, and logic errors. Look up Visual Basic topics in Help

#### Controls

Use text boxes, frames, check boxes, option buttons, images, shapes, and lines effectively. Set the Appearance property to make controls appear flat or three-dimensional. Select multiple controls and move them, align them, and set common properties. Make your projects easy for the user to understand and operate by defining access keys, setting a default and a cancel button, controlling the tab sequence, resetting the focus during program execution, and causing ToolTips to appear. Clear the contents of text boxes and labels. Change font attributes, such as bold, italic, underline, size, and colour, during program execution. Code multiple statements for one control using the With and End With statements. Concatenate (join) strings of text. Make a control visible or invisible by setting its Visible property

#### Variables, Constants and Calculations

Distinguish between variables, constants, and controls. Differentiate among the various data types. Apply naming conventions incorporating standards and indicating scope and data type. Declare variables using the Dim statement. Select the appropriate scope for a variable. Convert text input to numeric values using the Val function. Perform calculations using variables and constants. Format values for output using the formatting functions. Accumulate sums and generate counts. Format data for output. Modify the environment to require Option Explicit.

#### Decisions and Conditions

Use block Ifs to control the flow of logic. Understand and use nested Ifs. Read and create flowcharts indicating the logic in a selection process. Evaluate conditions using the relational operators. Combine conditions using And and Or. Test the Value property of option buttons and check boxes. Perform validation on numeric fields. Call event procedures from other procedures. Create message boxes to display error conditions. Apply the message box constants. Debug projects using breakpoints, stepping program execution, and displaying intermediate results.

#### Menus, Sub Procedures and Sub Functions

Create menus and submenus for program control Display and use the Windows common dialog boxes. Write reusable code in sub procedures and function procedures and call the procedures from other locations. Create an executable file that can be run from the Windows environment

#### Graphics

Understand the graphics coordinate system. Create graphics using graphics methods to create lines, rectangles, circles and segments. Use of the Timer control to create simple animations.

Assessment Breakdown	%
Continuous Assessment	60.00%
Practical	40.00%

### Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Other	Students will sit a final practical examination at the end of the module.	1,2,3,4,5	60.00	n/a

No Project

### Practical

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	The student will complete a number of practical assignments during the module .	1,2,3,4,5	40.00	Sem 1 End

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

**Module Workload**

<b>Workload: Full Time</b>		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Independent Learning	Every Week	1.00
Practicals	Every Week	1.00
Total Hours		2.00

