

MODULE 13

Windows Programming

SEMESTER	I (Fall)
STAGE	II
Number of Credits:	4 semester credits/6 quarter units
THEME	Software Development
ASSESSMENT	Continuous Assessment 60%
	Examination 40%

Aims

To develop the students' ability to write effective Visual Basic programs within the Windows environment and to enable them to manage data in a client server framework by integrating their Visual Basic programs to a database.

Learning Outcomes

Upon completion of this module, a student will be able to:

- Create small scale applications using Visual Basic;
- Integrate Visual Basic programs with databases;
- Display a knowledge of how programs interact with the Windows environment;
- Critically evaluate the need for and use of custom controls;
- Recognise the different aspects of good interface design in a Windows application.

Indicative Content

Topic	Description
Development Environment	Controls: Text boxes, list boxes, command buttons, option buttons, check boxes, scroll bars, file list boxes, drive list boxes, menus and forms;
Programming	VB programming language: Event driven programming; procedure types; data types and data structures; arrays and array processing; object variables; programming with object variables; responding to mouse events; multiple document interfaces;
Interacting with the Windows Environment	Selecting text; Using the clipboard; using timer controls;
Form Handling	Forms: Single Document Interface (SDI) and Multiple Document Interface (MDI); Form methods: hide, show, resize, load and unload; Form properties: modal, non-modal, and other standard properties;

	Enumerating through forms.
Database Connectivity	Connecting Visual Basic programs to a database using a database control; Perform search, add, and delete operations on a recordset;

Error Handling and Debugging	Debugger: Debug menu/toolbar, Locals, Watch and Call Stack Windows. Inserting Break points. Debugging strategies: Break points, Stepping Into/Over/Out, Run to cursor. Incorporate On Error statements to enhance program reliability.
ActiveX Controls	Introduce some additional ActiveX controls, which may be added to the standard Visual Basic control set. Explore ways to develop custom controls.

Teaching and Learning Methods

Students will be taught using a combination of lectures, tutorials and practicals. Practical sessions will be based on lab workbooks. These will contain many small programming assignments to help the students understand the numerous programming constructs being introduced. A graded project will also be given as part of the course.

Assessment Methods

Assessment will include both a continuous component and an end of semester examination. The continuous assessment component is used to develop practical skills of programming techniques and will be based both on the lab workbooks and a graded project. Students will be expected to develop efficient, well-documented code, meeting accepted quality standards.

Primary Reading List

Title	Author	Publisher
Visual Basic 6 How to program	Dietel H. Dietel P. Nieto T.	Prentice Hall
Visual Basic How to Use	Mordynski S. Mauer L.	Sams

Recommended Reading List

Visual Basic in Easy Steps	Anderson T.	Computer Step
Visual Basic Programmer's Guide	Microsoft	Microsoft Press
Visual Basic Language Reference	Microsoft	Microsoft Press