DEPARTMENT OF COMPUTER SCIENCE				*CLASS: II B.Sc. Computer Science*				
Sem	**Course Type**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/week**	**CIA**	**Ext**	**Total**
III	SBE-1	20U3DSE1	Visual Programming	2	2	25	75	100

Nature of Course				
Knowledge and skill	✓		Employability oriented	
Skill oriented			Entrepreneurship oriented	

COURSE OBJECTIVES:

The course is designed

- To impart the knowledge of computer programming with Visual GUI approach
- To learn the concept and controls of a front-end tool.

Units	**TOPICS**	**Total Hours : 30**	**K-levels**
Unit -I	**Introduction** Overview of the IDE - Managing forms in Visual Basic - The Visual Basic Language: Declaring Constants, Variables – Selecting variable types- Converting between data types - setting variable scope- verifying data types – declaring arrays & Dynamic arrays – Declaring Subroutines – Declaring functions – Handling strings – Converting strings to numbers and back again – Handling operators & operator precedence – Using if-else statements- Using select case –Looping – Handling higher math-Handling Dates and Times.	6 hrs	Up to K2
Unit-2	**Controls** Text Boxes and Rich text Boxes- command buttons – checkboxes & option buttons – list boxes and combo boxes – picture boxes and image controls – The timer control – The frame control – the label control – the shape control.	6 hrs	Up to K3
Unit-3	**Menus & Toolbars** Visual Basic Menus: adding a menu to a form – modifying & deleting menu items – creating sub menus – using Visual Basic predefined menus-Handling MDI forms & MDI child menuscreating & displaying popup menus – Adding & deleting menu items at runtime-– Toolbars, status bars, progress bars and cool bars.	6 hrs	Up to K3
Unit-4	**Files & Data Base Concepts** File handling and File Controls – Using DAO,RDO and ADO : Creating and managing databases with the visual data manager – creating a table - Adding a Data control – opening a database with the data control, Remote data control, ADO data control – connecting a databases using controls-working with database objects in code.	6 hrs	Up to K4

Unit-5	**Active-x controls & Documents** Creating an Active-x control – Designing Active-x control- Adding controls to an Active-x control- Registering an Active-x control – Creating an Active-x Document – Active-x Document dll vs EXEs – Testing an Active-x Document.	6 hrs	Up to K4

Books for Study:

Steven Holzner – "Visual Basic 6 Programming Black Book" - 16th Reprint Edition –Dream tech Press Publications

Books for Reference :

1. Petroutsos.E – " Mastering Visual Basic 6" – Fifth edition, BPB Publications
2. Jerke .N - " Visual Basic 6.0 – The Complete reference" – Nineteenth Reprint 2004, TataMcGraw Hill Publishing.
3. Gary Cornell- "VB 6 from the Ground up" – Second Reprint 1999-Tata-McGraw Hill Private Ltd.

Web resources:

1. https://lecturenotes.in/m/17698-note-of-visual-basic-by-mageshkid?reading=true&continue=2&materialId=17698-note-of-visual-basic-by-magesh-kid
2. https://www.csus.edu/indiv/s/scanland/mis15/index_htm_files/ch1.pdf

Rationale for Nature of the course:

This language allows programmers to create software interface and codes in an easy to use graphical environment. Visual Basic is the combination of different components that are used on forms having various parameters or components. On the one hand it allows programmers to develop widows based applications. So, learning this type of GUI oriented language will be more useful while establishing an opportunity for employment.

Activities having direct bearing on Skill development / Employability /Entrepreneurship

- Seminar
- Assignment preparation
- Developing simple program segments
- Thinking and analysis on theoretical concepts

Pedagogy:

The teaching methods includes Chalk and talk, PowerPoint, demonstrations, assignments and group discussions.

Lecture schedule:

Unit	Topics	Hrs	Mode
Unit I	Overview of the IDE - Managing forms in Visual Basic - The Visual Basic Language: Declaring Constants, Variables – Selecting variable types-Converting between data types	1	Chalk and talk, Quiz and assignment
	setting variable scope- verifying data types – declaring arrays & Dynamic arrays – Declaring Subroutines – Declaring functions	2	
	Handling strings – Converting strings to numbers and back again – Handling operators & operator precedence	1	
	Using if-else statements- Using select case –Looping – Handling higher math- Handling Dates and Times.	2	
Unit II	Text Boxes and Rich text Boxes- command buttons – checkboxes & option buttons –	2	Chalk and talk, Group discussion
	– list boxes and combo boxes – picture boxes and image controls	2	
	The timer control – The frame control – the label control – the shape control.	2	
Unit III	Visual Basic Menus: adding a menu to a form – modifying & deleting menu items	2	Chalk and talk, Quiz and assignment
	– creating sub menus – using Visual Basic predefined menus-Handling MDI forms & MDI child menus	1	
	creating & displaying popup menus	1	
	Adding & deleting menu items at runtime-	1	
	Toolbars, status bars, progress bars and cool bars.	1	
Unit IV	File handling and File Controls – Using DAO,RDO and ADO : Creating and managing databases with the visual data manager –	2	PPT, Chalk and talk, Quiz and assignment
	creating a table - Adding a Data control – opening a database with the data control,	1	
	Remote data control, ADO data control	1	
	connecting a databases using controls- working with database objects in code.	2	
Unit V	Creating an Active-x control – Designing Active-x control- Adding controls to an Active-x control-	2	PPT, Chalk and talk, Quiz and assignment
	Registering an Active-x control – Creating an Active-x Document	2	
	Active-x Document dll vs EXEs – Testing an Active-x Document.	2	

Learning Outcome Based Education & Assessment (LOBE)
Blue Print – Visual programming
Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

BLUE PRINT FOR INTERNAL ASSESSMENT – I

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice)
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
1.	CLO 1	Up to K 2	2	K1 & K2	1	K1	2 (K1&K1)	1(K2)
2.	CLO 2	Up to K 3	2	K1 & K2	1	K2	2 (K2&K2)	1(K3)
No. of Questions to be asked			4		3		4	3
No. of Questions to be answered			4		3		2	2
Marks for each Question			1		2		5	10
Total Marks for each Section			4		6		10	30

BLUE PRINT FOR INTERNAL ASSESSMENT – II

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice)
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
3.	CLO 3	Up to K 4	2	K1 & K2	1	K2	2 (K3&K3)	1(K4)
4.	CLO 4	Up to K 3	2	K1 & K2	1	K1	2 (K3&K3)	1(K3)
No. of Questions to be asked			4		3		4	3
No. of Questions to be answered			4		3		2	2
Marks for each Question			1		2		5	10
Total Marks for each Section			4		6		10	30

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S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
1	CLO 1	Up to K-2	2	K1 & K2	1	K1	2 (K1&K1)	1(K2)
2	CLO 2	Up to K-3	2	K1 & K2	1	K2	2 (K2&K2)	1(K3)
3	CLO 3	Up to K-4	2	K1 & K2	1	K2	2 (K3&K3)	1(K4)
4	CLO 4	Up to K-3	2	K1 & K2	1	K1	2 (K3&K3)	1(K3)
5	CLO 5	Up to K-4	2	K1 & K2	1	K2	2 (K4&K4)	1(K3)
No. of Questions to be asked			10		5		10	5
No. of Questions to be answered			10		5		5	3
Marks for each Question			1		2		5	10
Total Marks for each Section			10		10		25	30

Distribution of Section-wise Marks with K Levels

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (Either/or)	Section D (Open Choice)	Total Marks	% of Marks without choice	Consolidated
K1	5	4	10	-	**19**	15.83	**42%**
K2	5	6	10	10	**31**	25.83	
K3	-	-	20	30	**50**	41.67	**42%**
K4	-	-	10	10	**20**	16.67	**16%**
Total Marks	10	10	50	50	**120**	100.00	**100%**

Distribution of Unit-wise questions with K Levels

Section A	Section B	Section C	Section D
2 Questions for each Unit (K1 & K2 Level)	1 Question from each Unit (K1 & K2 Level)	2 Questions from Unit-I (K1 Level)	1Question from Unit-I (K2 Level)
		2 Questions from Unit-II (K3 Level)	1Question from Unit-II (K3 Level)
		2 Questions from Unit-III (K3 Level)	1Question from Unit-III (K4 Level)
		2 Questions from Unit-IV (K2 Level)	1Question from Unit-IV (K3 Level)
		2 Questions from Unit-V (K4 Level)	1Question from Unit-V (K3 Level)

K1 –Remembering and recalling facts with specific answers
K2 – Basic understanding of facts and stating main ideas with general answers
K3 – Application oriented – Solving Problems
K4 – Examining, analyzing, presentation and make interferences with evidences

COURSE OUTCOMES:

On the completion of the course the students will be able to

CLOs	COURSE OUTCOME	Knowledge Level (basis of Bloom's Taxonomy)
CO-1	Understand the basic concept of visual and front-end tool application	Up to K2
CO-2	Understand the concepts of MDI forms , Menu and frame controls	Up to K2
CO-3	Acquire the knowledge and creation of tool bars and its properties.	Up to K4
CO-4	Demonstrate the design and management of tables with ADO – DAO data controls.	Up to K4
CO-5	Understand the concepts and usage of Active-X ,its controls and testing of Active-x documents.	Up to K3

MAPPING OF COs WITH PSOs:

	PSO 1 (Knowledge Base)	PSO 2 (Problem Analysis & Investigation)	PSO 3 (Communication Skills & Design)	PSO 4 (Individual and Team Work)	PSO 5 (Professionalism Ethics and equity)	PSO 6 (Life Long Learning)
CO-1	3	1	1	2	1	1
CO-2	2	3	2	1	1	1
CO-3	2	3	1	1	1	2
CO-4	3	2	2	1	2	1
CO-5	2	2	2	3	2	1

3- Advanced Application 2- Intermediate 1- Introductory

Course Designer(s):

1. **Prof. R.Umasankari**
2. **Prof. P.Sridevi**
3. **Prof. J.Mayajothi**