

**Course Name : Computer Engineering Group**

**Course Code : CO/CD**

**Semester : Fifth for CO and Sixth for CD**

**Subject Title : Windows Programming Using VC++**

**Subject Code : 17076**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
01	--	02	--	--	25#	--	25@	100

**Rationale:**

Today's software developers are constantly adopting new technologies as target devices like PCs, Laptops, Mobile Phones, etc. support Internet and Windows based applications. Windows Operating System and its variants provides rich GUI environment for developing easy to use and consistent user interface. As most of the software developers mostly trust Visual C++ programming environment for its power, usage, rich of facilities and efficiency. Also, with regards to JAVA Windows development environment, Microsoft VC++.Net with its all versions have been widely used as the Windows Programming Tool.

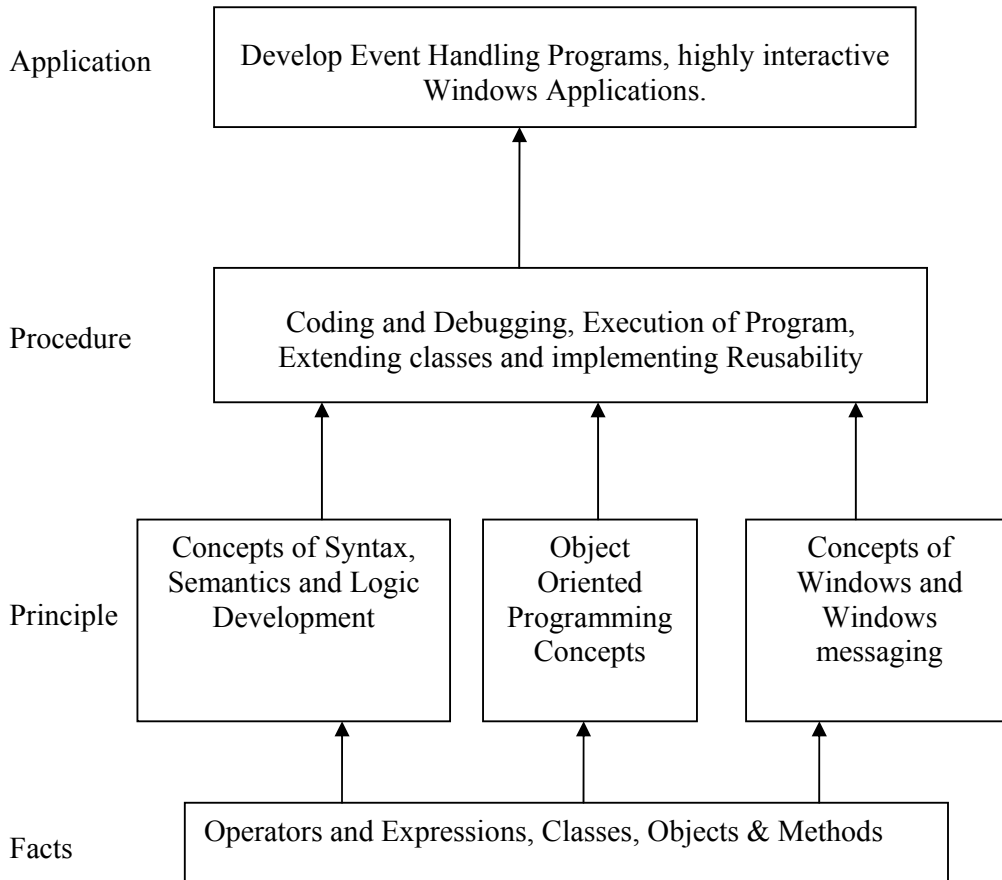
The Course is designed such that, Windows Programming Skills using VC++ as a tool will be enhanced. It addresses the issues in Windows Programming related to Basic Windows, its structure and operation, various utilities, built-in functions and methods, MFC utilities, etc. Students will be able to operate, use, create and build Windows based applications after completing the course.

**Objectives:**

Students will be able to

1. Study the GUI basics and Windows Programming basics.
2. Operate Windows Development Environment using VC++.Net Tool.
3. Create Write, Test, Compile and Implement Windows Programs.
4. Use MFC utilities for Keyboard interface, mouse interface, printer interface, etc.
5. Create and use checkboxes, Radio-Button, List Boxes, Scrollbars, etc.
6. Create and use Menus, Tool-Bars etc.
7. Create and handle Dialog Boxes and add various controls.

**Learning Structure:**



**Contents:**

Sr. No	Name of Topics / Subtopics	Hours
1	<b>Overview of MS-Windows</b> <b>Objectives:</b> <ul style="list-style-type: none"> <li>➤ <b>Learn Visual C++ Environment</b></li> <li>➤ <b>Understand Unicode concept</b></li> </ul> 1.1 The Windows Environment, Windows Programming Options, Your First Windows Program, 1.2 A brief History of Character Sets, Wide Characters And C, Wide Characters And Windows 1.3 MFC Class and Application framework 1.4 Application class and windows class	02
2	<b>Windows and Messages</b> <b>Objectives :</b> <ul style="list-style-type: none"> <li>➤ <b>Know Registering the window class</b></li> <li>➤ <b>Write simple program using VC++ environment</b></li> <li>➤ <b>Create , Compile and Implement Windows Program</b></li> </ul> 2.1 An Architectural Overview, Registering the Window class, Creating Window, Displaying the Window, The Message Loop, The Window Procedure, Processing the messages 2.2 The WM_PAINT message, The WM_DESTROY message, Queued and Non-queued messages 2.3 Painting and Repainting ,An Introduction to GDI , The Device Context, Getting a Device Context Handle, The Paint Information Structure, Scroll Bar, Building a Better Scroll 2.4 Pens, brushes, font etc.	03
3	<b>GDI and Basic Drawing</b> <b>Objectives :</b> <ul style="list-style-type: none"> <li>➤ <b>Know GDI Structure</b></li> <li>➤ <b>Understand GDI primitives</b></li> <li>➤ <b>Write program to draw Dots and Lines</b></li> </ul> 3.1 The Structure of GDI : The GDI philosophy, The GDI function calls, The GDI primitives 3.2 The Device Context : Getting the Device Context Handle, Getting Device Context information 3.3 Drawing Dots and Lines : Setting Pixels, The Bounding Box functions, Drawing Filled Areas	04
4	<b>The Keyboard</b> <b>Objectives :</b> <ul style="list-style-type: none"> <li>➤ <b>Understand keyboard events</b></li> <li>➤ <b>Know virtual key codes</b></li> <li>➤ <b>Understand Character Messages</b></li> </ul> 4.1 Keyboard Basics, Keystroke Messages, System and Nonsystem Keystrokes, Virtual Key codes, Using Keystroke Messages 4.2 Character Messages : The Four Character Messages , Message Ordering, Control Character Processing ,Dead Character Messages 4.3 Keyboard Messages and Character Sets : The Keyview1 Program, The foreign Language Keyboard Problem, Character Sets and Fonts 4.4 Handling Keyboard Messages	04

Sr. No	Name of Topics / Subtopics	Hours
5	<b>The Mouse</b> <b>Objectives:</b> <ul style="list-style-type: none"> <li>➤ Know Mouse basics</li> <li>➤ Know Client area &amp; Non Client Area Mouse Messages</li> </ul> 5.1 Mouse Basics, Client Area Mouse Messages, Simple Mouse Processing 5.2 Non-Client Area Mouse Messages: The Hit-test Message, Message Beget Messages 5.3 Emulating the Mouse with the Keyboard ,Using child windows for Hit Testing , Child Windows and the Keyboard 5.4 Capturing the Mouse: Blocking out a Rectangle, The capture Solution, The BLOKOUT2 program. 5.5 Handling Mouse Messages	03
<b>Total</b>		<b>16</b>

**List of Practical:**

1. Demonstrate the Visual C++ environment, installation of the software and getting familiar with various elements of VC++ IDE
2. Understand parts of VC++ program and know the steps for writing, compiling and executing VC++ program
3. Write a program to draw dots and lines using GDI in VC++.
4. Write a program to draw dots and lines using GDI in VC++.
5. Write a program to draw filled areas and rectangles using GDI in VC++.
6. Demonstrate how to read keystrokes from the keyboard in VC++.
7. Write a program to display text at a desired window using VC++.
8. Write a program to find size of a window in VC++.
9. Write a program for resizing of a window in VC++.
10. Write a program for handling mouse events such as click and double click.

**Learning Resources:****Books:**

Sr. No.	Author	Title	Publisher
1	Charles Petzold	Programming Windows	Wiley Publications
2	Steven Holzner	Microsoft Visual C++ 5	TMH
3	Brent E. Rector JosephM. Newcomer	Win32 Programming	Addison Wesley

**Web Sites:**

<http://www.functionx.com/win32/index.htm>

<http://www.onesmartclick.com/programming/visual-cpp.html>