



**Catholic  
Memorial**  
HIGH SCHOOL

## Year Long Course Plan

**Department: Computer Science**

**Course: Visual Basic Programming 2 481**

**Essential Learning Outcomes:** After successfully completing this course, students will be able to:

1. Create well structured event-driven applications in Visual Basic 2005 IDE, run and debug
2. Add objects and menus to a form
3. Demonstrate logical problem solving strategies, both not using the computer and using the computer.
4. Demonstrate the use of decision structures to control the flow of a program
5. Generate random numbers and use them appropriately
6. Demonstrate the use of repetition control structures
7. Write sub procedures, functions and use built-in functions
8. Create and use one-dimensional arrays of objects
9. Create and use two-dimensional arrays of objects
10. Include color, sound and graphics in an event-driven program
11. Create applications with multiple forms and animation, MDI applications.
12. Demonstrate understanding of search and sort algorithms, writing the code in Visual Basic
13. Demonstrate an understanding of polymorphism, inheritance and encapsulation when creating a project
14. Demonstrate in coding an understanding of file input output

<i>Quarter 1</i>	<i>Quarter 2</i>
<p><b>Unit 1: Mathematical and business functions (ELO 1, 7)</b></p> <ul style="list-style-type: none"> <li>• Review functions and procedures</li> <li>• Built-in math functions</li> <li>• Built-in business functions</li> <li>• List boxes</li> <li>• Combo boxes</li> <li>• <b>ASSESSMENT: Written test/project</b></li> </ul> <p><b>Unit 2: Arrays and structures (ELO 1, 2, 3, 4, 6, 7, 12)</b></p> <ul style="list-style-type: none"> <li>• Need to group objects</li> <li>• One dimensional arrays</li> <li>• Two dimensional arrays</li> <li>• Array parameters</li> <li>• Implementing arrays</li> <li>• Search algorithms</li> <li>• Dynamic arrays</li> <li>• Control objects as array elements</li> <li>• Enumerated types</li> <li>• <b>ASSESSMENT: Written Test, projects</b></li> </ul>	<p><b>Unit 5: Using files (ELO 1, 2, 3, 4, 6, 14)</b></p> <ul style="list-style-type: none"> <li>• <b>Use files for data input</b></li> <li>• <b>Create, copy, delete files at run time</b></li> <li>• <b>File streams</b></li> <li>• <b>Text box to display file contents</b></li> <li>• <b>Keypress event procedure</b></li> <li>• <b>Open and save as dialog boxes in application</b></li> <li>• <b>ASSESSMENT: Written Test and project</b></li> </ul> <p><b>Unit 6: Sorting and Searching (ELO 1, 2, 3, 4, 6, 12, 14)</b></p> <ul style="list-style-type: none"> <li>• <b>Sorting</b></li> <li>• <b>Bubble sort algorithm</b></li> <li>• <b>Selection sort algorithm</b></li> <li>• <b>Insertion sort algorithm</b></li> <li>• <b>Binary search algorithm</b></li> <li>• <b>ASSESSMENT: Written Test and project</b></li> </ul>

<p><b>Unit 3: color, sound, and graphics (ELO 1, 2, 3, 4, 5, 10, 12)</b></p> <ul style="list-style-type: none"> <li>• Apply color to an interface</li> <li>• Color dialog box</li> <li>• Review Images in applications</li> <li>• Review Timer control</li> <li>• Adding sound</li> <li>• Use of Graphics class</li> <li>• Event procedures that respond to mouse events</li> <li>• <b>ASSESSMENT: Written Test and project</b></li> </ul> <p><b>Unit 4: Creating classes ELO(1, 2, 3, 7, 13)</b></p> <ul style="list-style-type: none"> <li>• Instantiate objects</li> <li>• Design and create a class</li> <li>• Naming conventions</li> <li>• Encapsulation</li> <li>• Write constructors</li> <li>• Overload methods</li> <li>• Extend class using inheritance</li> <li>• Demonstrate polymorphism</li> <li>• <b>ASSESSMENT: Written Test and project</b></li> </ul>	<p><b>Unit 7: MDI Applications expanded (ELO 1, 2, 3, 4, 10, 11)</b></p> <ul style="list-style-type: none"> <li>• MDI applications</li> <li>• Child - parent relationship</li> <li>• Standard Windows application menus</li> <li>• Dialog boxes</li> <li>• Large project with multiple forms</li> </ul> <p><b>ASSESSMENT: Written Test and major project</b></p>
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