

Course Code: 404
Course Title: .NET Programming

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Credits	4
Course Category	Major Course
Level of Course	300-399 (Higher Level)
Teaching per Week	4 Hrs. (2 Hours Theory + 4 Hours Practical work)
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Review / Revision	2023-2024
Implementation Year:	A.Y. 2024-2025
Purpose of Course	This syllabus has been prepared for the beginners to help them understand basic .Net programming. After completing this, students will get a moderate level of expertise in .Net programming from where, they can take themselves to next levels.
Course Objective	<ul style="list-style-type: none"> - To make students understand .Net as simple, modern, object- oriented computer programming language developed by Microsoft to combine the power of .NET Framework and the CLR with the productivity benefits. - To make students understand basic .Net programming and will also take through various advanced concepts related to .Net programming language.
Pre-requisite	Students are expected have concepts related to Programming techniques using Object Oriented.
Course Outcomes	<p>CO1: Understand the fundamentals of .NET framework: Students will gain a solid understanding of the .NET framework, including its architecture, components, and how it supports various programming languages such as C# and Visual Basic.NET.</p> <p>CO2: Develop basic programming skills in C#: Students will learn the syntax, data types, control structures, and object-oriented programming concepts in C#, one of the primary languages used in .NET development.</p> <p>CO3: Create and manipulate .NET applications: Students will be able to create, compile, debug, and run basic .NET applications using Visual Studio IDE, including console applications, Windows Forms applications, and simple web applications.</p> <p>CO4: Utilize .NET framework libraries and APIs: Students will learn to leverage the vast array of libraries and APIs provided by the .NET framework for tasks such as file I/O, database access, error handling, and networking.</p> <p>CO5: Gain familiarity with modern software development practices: Students will be introduced to essential software development practices, including version control with Git, debugging techniques, unit testing, and documentation, to build robust and maintainable .NET applications.</p> <p>These outcomes aim to provide beginners with a foundational understanding of .NET programming technology and equip them with the skills needed to start developing simple applications using the .NET framework.</p>

Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
	CO1							
	CO2							
	CO3							
	CO4							
	CO5							

Course Content	<p>Unit 1. Overview of Microsoft .NET Framework</p> <p>1.1. The .NET Framework</p> <p>1.1.1. Managed Code MSIL, Metadata and JIT Compilation - Automatic Memory Management.</p> <p>1.2. The Common Language Runtime (CLR)</p> <p>1.3. The .NET Framework class Library</p> <p>Unit 2. Programming in Visual basic .net</p> <p>2.1. IDE</p> <p>2.2. Variables and Data Types</p> <p>2.2.1. Boxing and Unboxing</p> <p>2.2.2. Enumerations</p> <p>2.2.3. Data Type Conversion Functions</p> <p>2.2.4. Statements</p> <p>2.3. String & Date Functions and Methods</p> <p>2.4. Modules, Procedures and Functions</p> <p>2.4.1. Passing variable number of arguments</p> <p>2.4.2. Optional arguments</p> <p>2.5. Using Arrays and Collections</p> <p>2.6. Control Flow Statements</p> <p>2.6.1. Conditional Statements</p> <p>2.6.2. Loop Statements</p> <p>2.6.3. MsgBox and InputBox</p> <p>Unit 3. Introduction to Windows controls</p> <p>3.1. Working with Tool Box Controls</p> <p>3.1.1. Common controls - Label, Text Box, Button, Check Box, Radio Button, Date Time Picker, List Box, Combo box, Picture Box, Rich Text Box, Tree View, Tool Tip, Progress bar, Masked Text box, Notify Icon, Link Label, Checked List box</p> <p>3.1.2. Container Controls</p> <p>3.1.3. Data - Data Set, Data Grid</p> <p>3.1.4. Component - Image list, error provider, Help provider, Timer</p> <p>3.2. Working with Menus and Dialogue Boxes</p> <p>3.3. Exception Handling</p> <p>3.3.1. Structured Error Handling</p> <p>3.3.2. Unstructured Error Handling</p> <p>Unit 4. Object Oriented Programming</p> <p>4.1. Creating Classes, Object Construction & Destruction</p> <p>4.1.1. Properties, Methods, Events</p> <p>4.1.2. Access Specifiers: Public, Private, Protected, ProtectedFriend</p> <p>4.1.3. Me, MyBase and MyClass keywords</p> <p>4.2 Abstraction, Encapsulation & Polymorphism</p> <p>4.3 Interfaces & Inheritance</p> <p>Unit 5. Database access using ADO.NET</p> <p>5.1. Visual Database Tools</p> <p>5.2. ADO .NET Object Model</p> <p>5.3. ADO .NET Programming</p>
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Reference Books	<ol style="list-style-type: none"> 1. Visual Basic .NET Programming (Black Book) - By Steven Son Holzner, DreamTech Publication 2. Mastering Visual Basic.NET by Evangelos Petroustos BPB Publication 3. Moving to VB.NET: Strategies, Concepts, and Code - by Dan Appleman – Apress Publication 4. Microsoft Visual Basic .NET Step by Step - by Michael Halvorson, PHI Publication 5. Database Programming with Visual Basic.NET and ADO.NET - by F. Scott Barker – Sams Publication 6. Beginning .NET Web Services Using Visual Basic .NET - by Joe Bustos and Karlli Watson, Wrox Publication 7. .NET – Complete Development Cycle - by G. Lenz, T. Moeller, Pearson Education. 8. Professional VB.NET, 2nd Edition - by Fred Barwell, et al – Wrox Publication
Teaching Methodology	Class Work, Discussion, Lab work, Self-Study, Seminars and/or Assignments
Evaluation Method	<p>50% Internal assessment.</p> <p>50% External assessment.</p>