|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Name:** | | | | | | | | Bachelor of Computer Applications | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | |  | | | | | |
|  | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | |  | | | | | |
| **Subject Name:** | | | | | | | | Programming with .NET C# | | | | | | | | | | | | | | | | | | | | | | | | | **Subject Code:** | | | | | | TBC-502 | | | | | |
|  | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | |  | | | | | | |
| **1** | | **Contact Hours:** | | | | | | | | 42 | | | | |  | | | | | | | | | | | | | | | | | | | **L** | | 2 | | | | **T** | 1 | **P** | 2 |
|  | |  | | | | | | | |  | | | | |  | | | | | | | | | | | | | | | | | | |  | |  | | | |  |  |  |  |
| **2** | | **Examination Duration(Hrs.):** | | | | | | | | | | | | | | | | | | |  | **Theory** | | | | | 0 | 3 |  | **Practical** | | | | | 0 | | 2 | | |  | | | | |
|  | |  | | | | | | | | | | | | | | | | | | |  |  | | | | |  |  |  |  | | | | |  | |  | | |  | | | | |
| **3** | | **Relative Weightage:** | | | | | | | | | | |  | | | | | **CWE:** | | | | | | | 25 | | **MTE:** | | | 25 | | **ETE:** | | | | 50 | |  | | | | | | |
|  | |  | | | | | | | | | | |  | | | | |  | | | | | |  | | |  | | |  | |  | | | |  | |  | | | | | | |
| **4** | | **Credits:** | | | | 0 | | | 3 |  | | | | | | | | | | | | | |  | | |  | | |  | |  | | | |  | |  | | | | | | |
|  | |  | | | |  | | |  |  | | | | | | | | | | | | | |  | | |  | | |  | |  | | | |  | |  | | | | | | |
| **5** | | **Semester:** | | | | | **🗸** | | |  | | | |  | | |  | | |  | | |  | | | | | | | | | | | | | | | | | | | | | |
|  | |  | | | **Autumn** | | | | | | **Spring** | | | | | | | | **Both** | | | | | | |  | | | | | | | | | | | | | | | | | | |
|  | |  | | |  | | | | | |  | | | | | | | |  | | | | | | |  | | | | | | | | | | | | | | | | | | |
| **6** | | **Pre-Requisite:** | | | | | | | | | | Object oriented programming overview is expected for the course. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | |  | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **7** | | **Subject Area:** | | | | | | | | | | Computer Applications with Dot Net. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | |  | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **8** | | **Objective:** | | | | | | | | | | To provide the students with the knowledge and skills needed to develop web based Microsoft .NET products by using C#. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | |  | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **9** | | **Course Outcome:** | | | | | | | | | | A student who successfully fulfills the course requirements will be able to- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | **a.** | | Design and implement applications and distributed systems on the .NET platform. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | **b.** | | Describe and apply the advanced techniques of object-oriented programming in web application development. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | **c.** | | Investigate and create solutions to programming problems using the C# programming language that contain an analysis, solution design and documented code. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | **d.** | | Development of web applications using .Net Technology. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | **e.** | | Programming Web Applications with ASP.NET. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | |  | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **10** | | | **Details of the Course:** | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Unit No.** | **CONTENT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **CONTACT HOURS** | | | | |
| **1** | **Overview of the Microsoft .NET Platform:**  Future of computing and the Microsoft’s vision, Understanding the motivation behind the .NET platform, Constituents of the .NET platform, CLR, Forces behind the fame, CTS, CLS, Know the role of CIL, Platform independence in .NET, .NET [R]Evolution, advantages, & prospects, Understanding the core: Assemblies (DLL HELL, Metadata, Namespace & Versioning), Deploying the .NET runtime. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | |
| **2** | **C# Language Syntax:**  **Working with data types & conversions**: Strings, Dates & Time, Integers, performing calculations with mathematical operators, Converting between data types  **Controlling program execution:** IF statements, CASE (SWITCH) statements, FOR, FOREACH Loops, WHILE, DO-WHILE Loops, Storing multiple values with arrays. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | |
| **3** | **C# .NET Object Oriented Programming:**  Coding object oriented applications: Dividing code into classes, adding fields, method properties, events and constructors to classes, defining scope & visibility, Garbage collector, Inheritance & polymorphism, overloading methods, Handling errors: Throwing exceptions, Try…. Catch….Finally, Simplifying maintenance through inheritance: Implementing a base class, Defining virtual and abstract methods, Overriding methods in derived classes,  **Building applications with Visual Studio:** Managing projects with the solution explorer, setting project properties and adding references, adding files, folders and code, Compiling, debugging and testing programs,  **Automating testing with Visual Studio:** Creating Visual Studio test projects, Writing Unit tests, Testing classes, properties, method and exceptions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | |
| **4** | **Programming Web Applications with ASP.NET:**  **Constructing ASP.NET Web Sites with Visual Studio:** Writing HTML pages and forms, maintaining consistency with Master pages, Designing pages with ASP.NET controls, Styling sites with ASP.NET themes.  **Processing ASP.NET Web Forms:** Initializing Web Forms controls, Activating Web Forms with events, ASP.NET AJAX, Working with XML, ASP.NET MVC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | |
| **5** | **Incorporating Relational Databases:**  **Relational database concepts:** Selecting, inserting, updating and deleting query syntax.  **Creating a SQL Server Database:** Defining primary & foreign key relationships.  **Accessing the database with ADO.NET:** Connecting to the database and running SQL commands, storing user information, Retrieving existing records.  **Deploying .NET Applications:** Installing the .NET Framework, Moving ASP.NET applications to the Web. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | |
|  | **TOTAL** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **42** | | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | |
| **11** | | | **Suggested Books:** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | |
| **Sl. NO.** | **NAME OF AUTHERS/BOOKS/PUBLISHERS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **YEAR OF PUBLICATION** | | | | |
| **1** | ASP.NET MVC 4 Jamie Kurtz, Apress | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2013 | | | | |
| **2** | Pro C# 5.0 and the .NET 4.5 Framework Sixth Edition, Andrew Troelsen | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2012 | | | | |
| **3** | C# Programming Language (C# 4.0), 4th Edition, Anders Hejlsberg, Mads Torgersen, Scott Wiltamuth, and Peter Golde | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2010 | | | | |
| **4** | C# 4.0 in a Nutshell: The Definitive Reference by Joseph Albahari and Ben Albahari | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2010 | | | | |
| **5** | Designing Microsoft ASP.NET Applications Microsoft Press, Douglas J. Reilly | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2010 | | | | |
| **6** | Head First C#, 2E: A Learner’s Guide to Real-World Programming with Visual C# and .NET (Head First Guides) by Andrew Stallman and Jennifer Greene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2009 | | | | |