# GANPAT UNIVERSITY

## FACULTY OF COMPUTER APPLICATIONS

| | | | |
|---|---|---|---|
| **Programme** | Master of Computer Applications | **Branch/Spec.** | Computer Application |
| **Semester** | II | **Version** | 1.0.0.0 |
| **Effective from Academic Year** | 2022-23 | **Effective for the batch Admitted in** | June 2022 |
| **Subject Code** | P12A2WTD | **Subject Name** | Web Technology Using .NET |

| **Teaching scheme** | | | | | | **Examination scheme (Marks)** | | | |
|---|---|---|---|---|---|---|---|---|---|
| **(Per week)** | **Lecture (DT)** | | **Practical (Lab.)** | | **Total** | | **CE** | **SEE** | **Total** |
| | L | TU | P | TW | | | | | |
| Credit | 2 | 1 | 2 | 0 | 5 | Theory | 40 | 60 | 100 |
| Hours | 2 | 1 | 4 | 0 | 7 | Practical | 20 | 30 | 50 |

**Objective:**

- This course provides a practical hands-on to C# Language and Web applications using ASP.NET Core MVC.

**Pre-requisites:**

- The student should have a basic knowledge of High-Level Programming Language concepts.

**Course Outcomes :**

- **1 = Slight (Low); 2 = Moderate (Medium); 3 = Substantial (High); "-" = No Correlation**

| **Name of CO** | **Description** |
|---|---|
| CO1 | Apply C# language fundamentals to develop console-based programs using control |
| CO2 | statements, arrays, strings, and console I/O operations. |
| CO3 | Implement object-oriented programming concepts and LINQ to build modular, reusable, and exception-handled C# applications. |
| CO4 | Develop web applications using ASP.NET Core MVC by integrating Models, Views, and Controllers with data binding and action methods. |

**Mapping of CO and PO**

| Cos | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 |
|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 2 | 1 | 2 | – | – | – | – |
| CO2 | 3 | 3 | 2 | 2 | 1 | – | – | – |
| CO3 | 2 | 3 | 3 | 3 | 2 | 1 | – | – |
| CO4 | 2 | 3 | 3 | 3 | 2 | 1 | 1 | 1 |

**Content:**

| **Unit** | **SECTION-I** | **Hrs** |
|---|---|---|

| | | |
|---|---|---|
| 01 | **C# Language:**<br>Fundamental of Core C#, Installing Visual Studio, The Anatomy of a core C# Program, Declaring variables, Data types, Rules for Identifiers, Enumeration type.<br>**Console I/O:** Reading Console Input, Writing Console Output, Using ReadKey ().<br>**Program Control Statements:** Conditional Statements (if, switch), Looping Statements (for, while, do-while, foreach), Jump Statements (break, continue, goto, return).<br>**Understanding Arrays and Strings:** One Dimensional Arrays, Multi-Dimensional Arrays, Jagged Array, Using Strings. | 11 |
| 02 | **OOP's Concepts:** Define Classes and Objects, Methods, Access Modifiers, Constructor, Destructor, Inheritance, Polymorphism (Overloading and Overriding), Collections (ArrayList and Hash Table), Exception Handling.<br>**Language Integrated Query:** Introduction to LINQ, LINQ Query Syntax, LINQ Query Operators, LINQ Query Methods. | 11 |
| | **SECTION-II** | |
| 03 | **Introduction ASP.NET Core MVC:**<br>Introduction to ASP.NET Core MVC, Understand MVC Pattern.<br>**Introduction to View, Controller and Model:**<br>**The View:** The Purpose of views, ViewData, Viewbag and TempData, Strongly typed view, Adding View, Working with HTML and Tag Helpers, Layout.<br>**Controller**: The Purpose of Controller, Creating New Controllers, Write Action Methods, Parameters in Controller Actions, types of Action Results & Return Type.<br>**Model:** Understanding Model, Creating the Model, Model Binding. | 12 |
| 04 | **The Razor View Engines:** Introduction Razor View Engines, Razor Syntax: Implicit Razor expressions, Explicit Razor expressions, Expression encoding, Razor code blocks, Implicit transitions, Explicit delimited transition, Explicit line transition, Control structures: Conditionals: if, else if, and switch; Looping: for, foreach, while, and do while; Comments, functions.<br>**URL Routing:** Introducing URL Patterns, Defining Default Values, Using Static URL Segments, Attribute Routes;<br>**Creating a web application of ASP.NET Core MVC Using Entity Framework:**<br>Introduction to Entity Framework**,** Create, Read, Update, and Delete operations. | 11 |

| **Practical Content:** | |
|---|---|
| List of programs specified by the subject teacher based on above mentioned topics. | |
| **Text Books:** | |
| 1 | Professional C# 7 and .NET Core 2.0 by Christian Nagel, Wrox publication 7th Edition 2018 |
| 2 | Pro ASP.NET Core MVC Sixth Edition by Adam Freeman, Apress Publication 7th Edition 2017 |
| **Reference Books:** | |
| 1 | Pro C# 7: With .NET and .NET Core by Andrew Troelsen, Philip Japikse, Apress Publication |
| 2 | The Complete Reference C# 4.0, Herbert Schildt, Tata McGraw Hill Edition 1st Edition 2017 |
| 3 | ASP.NET Core 2.0 MVC and Razor Pages for Beginners Atlantic Publishers and Distributors 2017 |
| 4 | Pro Entity Framework Core 2 for ASP.NET Core MVC, Adam Freeman, Apress 1st Edition 2018. |
| 5 | https://docs.microsoft.com/en-us/aspnet/core/mvc/overview?view=aspnetcore-5.0 |
| **MOOC/Certification Courses:** | |
| 1 | https://www.udemy.com/ |

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| 2 | https://www.coursera.org |
| 3 | Microsoft Course 20486-D: Developing ASP.NET Core MVC Web Applications |
| 4. | https://dotnet.microsoft.com/en-us/learn |

**Question Paper Scheme:**

**University Examination Duration: 3 Hours**

Note for Examiner: -

(I) Questions 1 and 4 are compulsory with no options.

(II) Internal options should be given in questions 2, 3, 5 and 6.

**SECTION – I**

Q.1 –8 Marks

Q.2 –11 Marks

Q.3 –11 Marks

**SECTION - II**

Q.4 –8 Marks

Q.5 –11 Marks

Q.6 –11 Marks