Uka Tarsadia University

B.Tech.

Semester V

WEB TECHNOLOGY WITH .NET

IT5039

EFFECTIVE FROM June-2023

Syllabus version: 1.00

Subject Code	Subject Title	Teaching Scheme			
		Hours		Credits	
		Theory	Practical	Theory	Practical
IT5039	Web Technology with .NET	4	4	4	2

Subject Code	Subject Title	Theory Examination Marks		Practical Examination Marks	Total Marks
		Internal	External	CIE	
IT5039	Web Technology with .NET	40	60	100	200

Objectives of the course:

- To enhance programming skill using C# programming language.
- Develop and consume Web Services.
- Design and develop Web applications using ASP.NET Core MVC.

Course Outcomes:

Upon completion of the course, the student will be able to:

CO1: Comprehend basic concepts of Web and ASP.NET.
CO2: Design and develop Web applications including state management.
CO3: Manage persistent data with Web applications.
CO4: Develop and consume Web Services.
CO5: Use controllers with views in single page application.
CO6: Work with models and forms and collaborate with other Web applications.

Sr. No.	Topics	Hours
	Unit – I	
1	**Introduction** Introduction to ASP.NET Core, Creating an ASP.NET Core Project, Running the ASP.NET Core Application, Adding a Data Model, Creating a Second Action and View, Linking Action Methods, Building the Form, Receiving Form Data, Displaying the Responses, Adding Validation, Styling the Content	8
	Unit – II	
2	**Web Application Development Basics** Essential C# Features, Cookies and Sessions, HTTPS Connections, Exceptions and Errors	8

Unit – III		
3	**Working with Data** Caching Data, Caching Responses, Using Entity Framework Core, Adding a Data Model, Adding CSS Framework, Configuring the Request Pipeline	8
Unit – IV		
4	**Web Services** RESTful Web Services, Creating a Web Service Using the Minimal API, Creating a Web Service Using a Controller, Improving the Web Service, Supporting the HTTP PATCH Method, Understanding Content Formatting, Documenting and Exploring Web Services	8
Unit – V		
5	**Using Controllers with Views** Working with Razor Views, Understanding the Razor Syntax, Using the View Bag, Using Temp Data, Working with Layouts, Using Partial Views, Understanding Content-Encoding	8
Unit – VI		
6	**Working with Model, Form and Other Web Applications** Using Model Binding, Using Model Validation, Creating Form Applications, Online Payment, Sending Emails, Login with Social Media	8

Text book:

1. Adam Freeman, "Pro ASP.NET Core 6", Apress.

Reference books:

1. Mary Delamater, Joel Murach, "murach's ASP.NET CORE MVC", Mike Murach & Associates.
2. John Ciliberti, "ASP.NET Core Recipes: A Problem-Solution Approach", Apress.
3. MAndrea Tosato, Marco Minerva, Emanuele Bartolesi, "Mastering Minimal APIs in ASP.NET Core", Packt Publishing.
4. Bipin Joshi, "Beginning Database Programming Using ASP.NET Core 3", Apress.
5. Razvan Alexandru Mezei, "Introduction to the Development of Web Applications Using ASP .Net (Core) MVC", Springer.

Course objectives and Course outcomes mapping:

- To enhance programming skill using C# programming language. – CO2
- Develop and consume Web Services. – CO4
- Design and develop Web applications using ASP.NET Core MVC. – CO1, CO3, CO5, CO6

Course units and Course outcome mapping:

Unit No.	Unit Name	Course Outcomes					
		CO1	CO2	CO3	CO4	CO5	CO6
1	Introduction	✓					
2	Web Application Development Basics		✓				
3	Working with Data			✓			
4	Web Services				✓		
5	Using Controllers with Views					✓	
6	Working with Model, Form and Other Web Applications						✓

Programme Outcomes:

PO 1: Engineering knowledge: An ability to apply knowledge of mathematics, science, and engineering.

PO 2: Problem analysis: An ability to identify, formulates, and solves engineering problems.

PO 3: Design/development of solutions: An ability to design a system, component, or process to meet desired needs within realistic constraints.

PO 4: Conduct investigations of complex problems: An ability to use the techniques, skills, and modern engineering tools necessary for solving engineering problems.

PO 5: Modern tool usage: The broad education and understanding of new engineering techniques necessary to solve engineering problems.

PO 6: The engineer and society: Achieve professional success with an understanding and appreciation of ethical behavior, social responsibility, and diversity, both as individuals and in team environments.

PO 7: Environment and sustainability: Articulate a comprehensive world view that integrates diverse approaches to sustainability.

PO 8: Ethics: Identify and demonstrate knowledge of ethical values in non-classroom activities, such as service learning, internships, and field work.

PO 9: Individual and team work: An ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO 10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give/receive clear instructions.

PO 11: Project management and finance: An ability to demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO 12: Life-long learning: A recognition of the need for, and an ability to engage in life-long learning.

Programme Outcomes and Course Outcomes mapping:

Programme Outcomes	Course Outcomes					
	CO1	CO2	CO3	CO4	CO5	CO6
PO1	✓	✓	✓	✓		
PO2	✓	✓	✓	✓	✓	✓
PO3		✓	✓	✓	✓	✓
PO4				✓	✓	✓
PO5				✓	✓	✓
PO6						
PO7						
PO8						
PO9						
PO10						
PO11						
PO12						