

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

COURSE CURRICULUM
COURSE TITLE: WEB PROGRAMMING USING ASP.NET
(COURSE CODE: 3351603)

Diploma Program in which this course is offered	Semester in which offered
Information Technology	5 th Semester

1. RATIONALE

The .NET has become a platform of choice for the development of web based data driven pages among webpage developer community due to its potential and strong features available to develop virtually all kind of dynamic web sites. It is a popular platform for development of robust desktop and web based applications. In this course Diploma in Information Technology students will be able to use ASP.NET platform for developing web based application with database support. Aim of this course is to enable students to develop dynamic and data driven web applications utilizing the power of .NET Technology.

2. LIST OF COMPETENCY

The course content should be taught and implemented with an aim to develop required skills in students to enable them to acquire following competency:

- **Design, develop and deploy Web based applications using ASP.net**

3. COURSE OUTCOMES:

The theory should be taught and practical should be carried out in such a manner that students are able to acquire different learning out comes in cognitive, psychomotor and affective domain to demonstrate following course outcomes.

- Explain the architecture of Dot Net platform
- Develop Simple Web form using various controls and implement the concept of master page
- Develop interaction of front end with database using facilities of .NET platform
- Deploy .Net Web Applications

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
L	T	P		Theory Marks		Practical Marks		Total Marks
L	T	P	C	ESE	PA	ESE	PA	
3	0	4	7	70	30	40	60	200

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit; ESE - End Semester Examination; PA - Progressive Assessment

5. COURSE CONTENT DETAILS

Unit	Major Learning Outcomes (in cognitive domain)	Topics and Sub-topics
Unit – I Introduction to .NET Framework and ASP.NET	1a. State the components of Framework and describe CLR	1.1 Microsoft .NET framework Overview 1.1.1. .Net framework Architecture 1.1.2. .Net Framework components: (CLR, CLS, CTS, MSIL, NameSpace, JIT, Metadata, FCL, Assembly, GAC, GC, Memory Management)
	1b.Explain benefits of ASP.NET over Classic ASP and also the Client-Server architecture.	1.2 Basics of ASP.NET 1.2.1 Features of ASP.NET 1.2.2 Differences between ASP.NET and Classic ASP 1.2.3 Web Applications and Webpage 1.2.4 Client Server Architecture 1.2.5 Parts Of website (HTML, XHTML, CSS, Client side and Server Side Scripting, Database)
	1c. Develop applications using ASP.NET IDE	1.3 Creating simple Web Application in ASP.NET 1.3.1 Introduction to Visual Studio 2008 1.3.2 Creating a New Web Project (ASP.NET) 1.3.3 Opening an Existing Web Site 1.3.4 Building Web Sites 1.3.5 Set up of work environment, start page, the menu system, toolbars, the new project dialog box, graphical designer, code designer.
Unit – II ASP.NET Web Forms	2. Develop simple web page using built in Objects	2.1. Adding Controls to the Web Page 2.2. Types of ASP.NET Files 2.3. Page Life Cycle 2.4. Web Form Processing Stages(Roundtrip) 2.5. ASP.Net In-Built Objects (Response, Request, Server, Trace Objects)
Unit – III ASP.NET	3. Use controls available with the IDE platform of ASP.NET for given purpose.	3.1 Web Server Controls (Button, Check Box, Check Box List, Drop Down List, HyperLink, Image,

Unit	Major Learning Outcomes (in cognitive domain)	Topics and Sub-topics
Controls		Image Button, Label, Link Button, List Box, List Item, Panel, Place Holder, Radio Button, Radio Button List, Text Box) 3.2 Working with Control Properties and Events 3.3 Validation Controls (Required Field Validator, RangeValidator Control, Compare Validator, RegularExpression Validator, CustomValidator, Validation Summary)
Unit – IV Styles, Themes and Master pages	4. Apply Styles, themes and Master pages in ASP.NET Web applications.	4.1. Styles 4.1.1. Creating Style Sheets 4.1.2. Applying Style Sheet Rules 4.2. Themes 4.2.1. How Themes Work 4.2.2. Handling Theme Conflicts 4.2.3. Creating Multiple Skins for the Same Control 4.3. Master Page 4.3.1 Basics of Master page 4.3.2 How Master page and Content pages are connected 4.3.3 Nesting Master Pages
Unit - V ASP.NET State Management	5. Develop programs using session management and user's preference in ASP.NET	5.1 State Management 5.1.1 View State 5.1.2 The Query String 5.1.3 Cross-Page Posting and Validation 5.1.4 Cookies (create, set, add and expire cookie) 5.1.5 Session State 5.1.6 Application State 5.2 The Global.asax application file 5.2.1 Application Events 5.3 ASP.NET Configuration 5.3.1 The Web.config File 5.3.2 Storing Custom Settings in the web.config File
Unit - VI Connecting Database Using ADO.NET	6a. Describe Objects of ADO.NET 6b. Describe the use of Data Binding to bind different	6.1 ADO.NET Architecture 6.1.1 DataProvider 6.1.2 Connection Object 6.1.3 Command Object 6.1.4 DataReader Object

Unit	Major Learning Outcomes (in cognitive domain)	Topics and Sub-topics
	controls 6c. Differentiate between single value and repeated value types of data binding.	6.1.5 DataAdapter Object 6.1.6 DataSet 6.1.7 DataView 6.2 Data Binding 6.2.1 Types of data binding (Single Value, Repeated Value) 6.3 SQL Data Source 6.3.1 Selecting, Updating and Deleting Records

6. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (THEORY)

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to .NET Framework and ASP.NET	04	4	4	2	10
II	ASP.NET Web Forms	06	2	4	4	10
III	ASP.NET Controls	08	4	4	6	14
IV	Styles, Themes and Master pages	05	2	2	4	08
V	ASP.NET State Management	07	2	4	6	12
VI	Connecting Database with ADO.NET	12	2	4	10	16
	Total	42	16	22	32	70

Legends: R = Remember; U = Understand; A = Apply and above levels (Bloom's Revised Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

7. SUGGESTED LIST OF EXERCISES/PRACTICAL

The practical/exercises should be properly designed and implemented with an attempt to develop different types of skills (**outcomes in psychomotor and affective domain**) so that students are able to acquire the competencies/programme outcomes. Following is the list of practical exercises for guidance.

Note: Here only outcomes in psychomotor domain are listed as practical/exercises. However, if these practical/exercises are completed appropriately, they would also lead to development of certain outcomes in affective domain which would in turn lead to development of **Course Outcomes** related to affective domain. Thus over all development of **Programme Outcomes** (as given in a common list at the beginning of curriculum document for this programme) would be assured.

Faculty should refer to that common list and should ensure that students also acquire outcomes in affective domain which are required for overall achievement of Programme Outcomes/Course Outcomes.

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Hrs. required
1	I	Getting acquainted with Visual Studio environment. (create new web project, open existing web project, building website, and study of toolbars, menu etc.)	02
2		Develop simple application using .net facility	02
3	II	Develop simple web page using built in Objects.	04
4		Design a web form to allow user to enter following details in his Resume using Web Server Controls. Set validations using properties. When data is submitted it must be viewed in the panel below the form. Fields of Resume are FirstName, Surname, Gender, Address, City, Pincode, Phone, Qualification (Diploma, Bachelor, Master), Specialization subject, Percentage.	04
5	III	Create a web form where user enters following marks. ASP.NET, JAVA, ISS, Project (All out of 100). When user submits the marks, numeric value validation must be done. On entering marks, the grade should be displayed in message box . % > 90 and <=<=100 AA > 80 and <=<=90 AB > 70 and <=<=80 BB > 60 and <=<=67 BC >50 and <=<=60 CC >40 and <= 50 DD Else Fail	02
6	III	Create a Simple calculator with validations and details	02
7	IV	Create a web page using the concept of cascading style sheets in ASP.NET	02
8		Create a web page using the concept of Theme & Skin in ASP.NET	02
9		Create Home page of your website using master page concept	02
10		Create a simple web application to illustrate the concept of nesting master page in ASP.NET	02
11	V	Develop a web page to implement the concept of state management using Cookies	02
12		Develop a web page to implement the concept of state management using Session and Application	02
13		Develop a web page to implement the concept of state management using ViewState and QueryString	02
14		Create a web application using Global.asax file which will count the number of visitors on web page.	02
15		Use various tags in Web.config file for ASP.NET configuration.	02
16		Write sample application to connect to database (connection object), Fetching and inserting data from database (command object) and using Data Reader	02

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Hrs. required
17	VI	Create a Web page and test the connectivity of your database with biodata form in exercise 1. If connected, display the message that connection with database is successful, and redirect the user to his homepage	02
18		Create a login page in your web application. Login page must have user name and password fields. If user enters correct ID, Password, he must be redirected to the homepage of your website.	02
19		Create a web page to insert user biodata information with all validations in to the database	02
20		Create a webpage, that allows user to add a new username if user doesn't exist in the database. Also create a forgot password link, to redirect user to set up his new password on authentication	04
21		Create a webpage to display the information about user on his homepage once he has logged in through the login form	02
22		Write an exercise, to allow the user to ADD, UPDATE, MODIFY his profile once he has logged into the website using Bound and Unbound Controls	06
23		Create a webpage to bind the user data from database into a gridview dynamically.	02
24		Create a simple web application that integrates the above concepts of ASP.NET into your application. Suggestive web application can be your own Personal website and host on free domain, Your department website etc,	02
Total Hours (practical for 56 hours from above representing each unit may be selected)			58

8. SUGGESTED LIST OF STUDENT ACTIVITIES

Following is the list of proposed student activities such as:

- i. Demonstration of potential and features of .NET Environment through seminar
- ii. Develop sample Web Application such as University website/Student profile system/ holiday destination booking etc.

9. SPECIAL INSTRUCTIONAL STRETEGIES (If Any)

The course activities include Lectures and Practical Exercises as per teaching scheme.

- i. Conceptual knowledge will be shared interactively using multimedia projector.

- ii. Student should be given environment to develop sample dynamic websites using ASP.net Students should be allowed to work on their own and use their creativity. Teachers should intervene only when help is asked for.

10. SUGGESTED LEARNING RESOURCES

A) List of Books

S. No.	Title of Book	Author	Publication
1	ASP.NET: The Complete Reference Books	Matthew Macdonald	McGraw Hill education
2	Programming in Visual Basic. NET	Julia Case Bradley, Anita C. Millspaugh	McGraw Hill, latest edition
3	Visual Basic .net Comprehensive Concepts and Techniques	Shelly, cashman, Quasney	Cengage learning, 2012

B) List of Major Equipment/ Instrument with Broad Specifications

- i. Computer System with latest configuration and memory
- ii. Multimedia projector
- iii. Internet Access

C) List of Software/Learning Websites

- i. Software: Microsoft Visual Studio latest express edition
- ii. <http://www.homeandlearn.co.uk/NET/vbNet.html>
- iii. <http://msdn.microsoft.com/en-us/beginner/default.aspx>
- iv. Videos : <http://www.youtube.com/> <http://www.learnvisualstudio.net/>

11. COURSE CURRICULUM DEVELOPMENT COMMITTEE

Faculty Members from Polytechnics

- **Prof. Rikita Parekh**, Lecturer, IT , Government Polytechnic for Girls, Ahmedabad
- **Prof. Vipul G. Gajjar**, Lecturer IT, R. C. Technical Institute, Ahmedabad
- **Prof. Krunal K Prajapati**, Lecturer IT, R. C. Technical Institute, Ahmedabad
- **Prof. Divya.K.Patel**. Lecturer IT, Government Polytechnic, Himatnagar.

Coordinator and Faculty Members from NITTTR Bhopal

- **Prof. R. K. Kapoor**, Associate Professor, Dept. of Computer Engineering and Applications.
- **Prof. Sanjay Agrawal**, Professor, Dept. of Computer Engineering and Applications.