

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

**COURSE CURRICULUM
COURSE TITLE: ADVANCE WEB TECHNOLOGY
(COURSE CODE: 3360706)**

Diploma Programme in which this course is offered	Semester in which offered
Computer Engineering	Sixth

1. RATIONALE:

This course focuses on building interactive web sites and web applications. Advanced Web Technologies are based on ASP.Net technology with VB. Emphasis is placed on Standard Web Controls and database programming. The students of Diploma in Computer Engineering should have skills in ASP.Net Programming techniques using VB.Net. This course aims that student should learn creating interactive web applications using server controls, database and Ajax and easily get absorbed in current industry requirement. This course is therefore a core course for students who want to work in the area of webpage development.

2. COMPETENCY:

The course content should be taught and implemented with the aim to develop required skills in the students so that they are able to acquire following competency:

- **Develop GUI based Web application using ASP.Net with Visual Basic**

3. COURSE OUTCOMES (COs):

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.

1. Apply the concept of Client Server architecture.
2. Develop web applications using standard ASP.Net control and validation control.
3. Design and develop interactive web applications using master page and theme.
4. Develop asynchronous web application using database programming and Ajax.

4. TEACHING AND EXAMINATION SCHEME.

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
				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 ASP.Net Web Programming & IDE	1a. Describe features of ASP.Net over ASP and Client Server Architecture	1.1 Basics of ASP.NET 1.1.1 Features of ASP.NET 1.1.2 Differences between ASP.NET and Classic ASP 1.1.3 Web Applications and Webpage 1.1.4 Components of Web application 1.1.5 Client Server Architecture
	1b. Explain utilization of various parts of IDE	1.2 Creating simple Web Application in ASP.NET 1.2.1 Introduction to Visual Studio 1.2.2 Creating a New Web Project (ASP.NET) 1.2.3 Opening an Existing Web Site 1.2.4 Building Web Sites 1.2.5 Set up of work environment, start page, the menu system, toolbars, the new project dialog box, graphical designer, code designer
	1c. Develop simple Web Form using Built-in ASP.Net Objects.	1.3 Working with ASP.Net Web Forms. 1.3.1 Types of ASP.Net Files 1.3.2 Web Form Round Trip 1.3.3 Stages in Web Form Processing 1.3.4 ASP.Net Objects (Request, Response, Server, Application, Session)
Unit – II ASP.Net Server Controls	2a. Design and Develop small Applications using enlisted Server Controls in ASP.Net with VisualBasic	2.1 Introduction of HTML Controls, ASP.Net Server Controls and Validation Controls 2.2 Working with Properties, Events & Methods of Server Controls (Button, TextBox, Label, CheckBox, CheckBox list, Radio Button, Link Button, ListBox, Drop Down List, Image, Hyperlink, Panel, Place Holder, File Upload) 2.3 Validation Controls (Required Field Validator, Compare Validator, Range Validator, Regular Expression Validator, Custom validator, Validation Summary, Validation Group)
Unit– III State Management in ASP.Net	3a. Describe state management techniques to store and transfer page data.	3.1 State Management 3.1.1. View State 3.1.2. Session State 3.1.3. Application State 3.1.4. QueryString 3.1.5. Cookies

	3b. State steps to configure ASP.Net Configuration files.	3.2 ASP.Net Configuration 3.2.1. Global.asax application file 3.2.2. Web.config file
Unit – IV Working with Master Page & Themes	4a. Create Master Page and its Content pages in ASP.Net	4.1 Master Pages 4.1.1 Create Master pages 4.1.2 Create & Develop Content Pages 4.1.3 Nest Master Page 4.1.4 Access master page controls from content page
	4b. Apply skin and theme to your web application	4.2 Themes 4.2.1 Create theme 4.2.2 Applying existing theme to an application 4.2.3 Create Skin 4.2.4 Applying skin to a control
Unit – V Database Programmin g using ADO.Net and AJAX	5a. Explain ADO.Net Architecture	5.1 ADO.Net Components 5.1.1 Connection Object 5.1.2 Command Object 5.1.3 DataReader 5.1.4 DataSets & Data Adapter 5.1.5 DataView
	5b. Describe data binding concept on various Data Bound Controls.	5.2 Insert, Update, Delete and DataBinding operation using Data Grid, Data List and Repeater Control
	5c. Develop simple web application with AJAX controls	5.3 ASP.Net AJAX Control 5.3.1 Ajax Framework 5.3.2 ScriptManager, UpdatePanel & Update Progress Bar Control of Ajax

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
I.	Introduction to ASP.Net Web Programming & IDE	6	6	6	2	14
II.	ASP.Net Server Controls	14	7	7	8	22
III.	State Management in ASP.Net	6	0	6	4	10
IV.	Working with Master Page & Themes	6	2	4	4	10
V.	Database Programming using ADO.Net and AJAX	10	2	4	6	14
	Total	42	17	27	24	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 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. However, if these practical 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.

S. No.	Unit No.	Practical Exercises (outcomes in psychomotor domain)	Approx. Hours Reqd.
1	I	Study of Visual Studio environment. (Create new web project, Open existing web project, building website, and study of toolbars, menu etc.)	2
2	II	a. Design a ASP.Net web form for User Registration having fields First Name, Last Name, Email, Password, repass, Age (dd-mm-yyyy), Ph. No., address, city, using different Server Controls. b. Validate all details in above application using validation controls and display all the details in the same form.	2 2
3	II	Create a page in ASP.Net using VB.Net, to choose a color from drop-down-list and display a message “you have chosen ‘color name’ ”.	1
4	II	Design a page that takes name and message from the user and choose a color by radio button, select a style for ex.-bold, italic, underline from the checkbox and display in label control, when you clicked on display button. And clear the information when you clicked on clear button.	2
5	II	Develop a web form to perform add, update, delete operation on ListBox control.	2
6	II	Create a web page, for book sales. Enter the quantity, title and price of the book. Calculate the extended price, discount (15%) and after discount, the actual price of the book. Show the summary of book sales. (Like total no of books, total discount given, total discounted amount and average discount.) You will need command buttons- calculate, clear sale.	2
7	II	Design a web page to implement upload and download files functionality using File Upload Control.	2
8	III	Develop a web page to implement the concept of state management using Cookies	2

S. No.	Unit No.	Practical Exercises (outcomes in psychomotor domain)	Approx. Hours Reqd.
9	III	Develop a web page to implement the concept of state management using Session and Application	2
10	III	Develop a web page to implement the concept of state management using ViewState and QueryString .	2
11	III	Create a web application using Global.asax file which will count the number of visitors on web page.	2
12	III	Use various tags in Web.config file for ASP.NET configuration.	2
13	IV	Create a web site using Master Page Concept having two content pages.	2
14	IV	Create a web application implementing Nested Master Page concept.	2
15	IV	Design a web application to illustrate concept of CSS, Themes and Skin.	2
16	V	Write sample application to connect to database, Fetching and inserting data from database and using Data Reader	4
17	V	Develop a User Registration form designed in Experiment 2. Insert user details in Database and show the same in DataGrid/Gridview control.	4
18	V	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.	6
19	V	Develop a web application to Add, Update, View and Delete records from Database data shown in Gridview.	6
20	V	Design a web form showing record in Repeater and Data List.	4
21	V	Implement Ajax ScriptManager and Update Panel concept in above practical.	2
22	V	Develop a Login application and show Ajax Progress bar while user trying to log in.	3
Total Hours (perform any practical from above for total 56 hours so that all units are covered)			60

8. SUGGESTED LIST OF STUDENT ACTIVITIES

Following is the list of proposed student activities such as:

- i. Expert Session on Current Trends in ASP.Net
- ii. Design and Develop mini project consisting of registration and login facility having user preferred theme.

9. SPECIAL INSTRUCTIONAL STRETEGIES

- i. Concepts should be introduced in classroom input sessions and by giving demonstration through projector.
- ii. Students should be given sufficient hands on to develop sample web based applications using ASP.NET technology under close guidance of Teachers. If possible some theory sessions may be conducted in labs so that theory and practice can go hand in hand.

- iii. Group Discussion and presentation of relevant websites
- iv. Faculty should allow students to use their creativity and let them struggle to learn on their own during practical sessions. However, faculty should remain around the students and should help them when they are stuck.

10. SUGGESTED LEARNING RESOURCES

(A) List of Books:

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

B. List of Major Equipment/Materials

Hardware: Desktop Computer P-IV processor or higher

Software: .Net Framework 3.5 or higher, Microsoft Visual Studio 2008 or higher

C List of Software/Learning Websites

- v. <http://www.tutorialspoint.com/asp.net/index.htm>
- vi. <http://www.homeandlearn.co.uk/NET/vbNet.html>
- vii. <https://www.udemy.com/learn-aspnet-from-scratch/?dtcode=QO5KhFV1R5It>
- viii. <http://stepbystepvideotutorials.com/>
- ix. <http://msdn.microsoft.com/en-us/beginner/default.aspx> .

11. COURSE CURRICULUM DEVELOPMENT COMMITTEE

Faculty Members from Polytechnics

- **Prof. K. N. Raval**, H.O.D Computer Department, R. C. Technical Institute, Ahmedabad.
- **Prof. (Ms.) Manisha. P. Mehta**, Sr. Lecturer in Computer Engineering, K. D. Polytechnic, Patan
- **Prof. (Ms.) Nirali R. Sheth**, Lecturer, Computer Engineering, Government Polytechnic for Girls, Ahmedabad

Coordinator and Faculty Members from NITTTR Bhopal

- **Dr. Shailendra Singh**, Professor Head, Department of Computer Engineering and Applications.
- **Dr. Priyanka Tripathi**, Associate Professor, Department of Computer Engineering and Applications.