

Name of Institute: Indus Institute of Technology & Engineering
Name of Faculty: Jignesh Patel

Course code: CE0704/CS0704/IT0704
Course name: Advanced .Net Framework

Pre-requisites:

Students must know the fundamentals of programming, C and C++ concepts like inheritance, polymorphism etc.

Credit points: 5
Offered Semester: VII

Course coordinator

Full name: Jignesh Patel
Department with sitting location: Computer Engineering Department (Fourth floor staffroom, Bhanwar building)
Telephone: +91 9428384820
Email: jigneshpatel.ce@indusuni.ac.in
Consultation times:

Tuesday **3.10 pm to 04:10 pm**
Thrusday **2:00 am to 3:00 pm**
Thrusday **3:10 am to 4:10 pm**

Course lecturer

Full name: Jignesh Patel
Department with sitting location: Computer Engineering Department (Fourth floor staffroom, Bhanwar building)
Telephone: +91 9428384820
Email: jigneshpatel.ce@indusuni.ac.in
Consultation times:

Tuesday **3.10 pm to 04:10 pm**
Thrusday **2:00 am to 3:00 pm**
Thrusday **3:10 am to 4:10 pm**

Students will be contacted throughout the session via mail with important information relating to this course.

Course Objectives

1. Design and develop complex concurrent programs using the .NET framework.
2. Describe, identify and debug issues related to the development of concurrent programs.
3. Create custom controls with the .NET framework. This includes custom drawn controls and design time support.
4. Using the .NET framework in relation to advanced areas of interest covered. This includes cryptography, regular expressions, multi-language development, memory management and interoperability with the Window's API.

Course Outcomes (CO)

On successful completion of this subject content, the student should:

1. Design and develop complex concurrent programs using the .NET framework.
2. Describe, identify and debug issues related to the development of concurrent programs.
3. Create custom controls with the .NET framework. This includes custom drawn controls and design time support.
4. Using the .NET framework in relation to advanced areas of interest covered. This includes cryptography, regular expressions, multi-language development, memory management and interoperability with the Window's API.

Course Outline

UNIT-I	[12 hours]
Introduction, Programming and application development, Types of application – Windows application, Web application, Console application, Windows service, Web service, Components and objects. OOPS with C#, Framework, Introduction to C#, Exception handling, Defining classes and class members, Assembly, Components of Assembly, Private and Shared Assembly, Garbage Collector, JIT compiler, Namespaces, Collections.	
UNIT-II	[12 hours]
Application Development using Controls: web based control, ASP.Net page life cycle, Validations, Master page, Themes, Skin, and Introduction to CSS. ASP.NET server controls-Types of control, ASP.NET state management engine, Web.config and global.asax files, Caching, Navigation controls, Introduction to user control.	
UNIT-III	[12 hours]
Introduction to Database, Using SQL to work with database, Retrieving and manipulating, data with SQL, ADO.Net architecture, ASP.Net data controls, Data Architecture (Two,Three,Ntier),Security Authentication(None,Passport,Windows,Form), LINQ, Advanced LINQ, reporting with CSV, Word and pdf, WCF Services	
UNIT-IV	[12 hours]

Introduction to “MVC”, Design Engine, Defining Model, Controller and View, Html Helper Classes, MVC Master page, Theme and Design, ViewBag, Viewdata, TempData, MVC state management with Windows and Forms authentication, ActionResult, JsonResult, HttpResponseMessage, Web API, two model Concept, EDMX, web grid concept

Method of delivery

Chalk and Board, PowerPoint presentation, Practical Demos

Study time

4 hrs theory, 2 hrs practical

CO-PO Mapping (PO: Program Outcomes)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	-	-	-	-	-	-	-	-
CO2	3	1	1	-	-	-	-	-	-	-	-	-
CO3	3	3	2	-	-	-	-	-	-	-	-	-
CO4	2	1	-	-	-	-	-	-	-	-	-	-
CO5	3	3	2	-	-	-	-	-	-	-	-	-
CO6	3	3	2	-	-	-	-	-	-	-	-	-

Blooms Taxonomy and Knowledge retention (For reference)

(Blooms taxonomy has been given for reference)

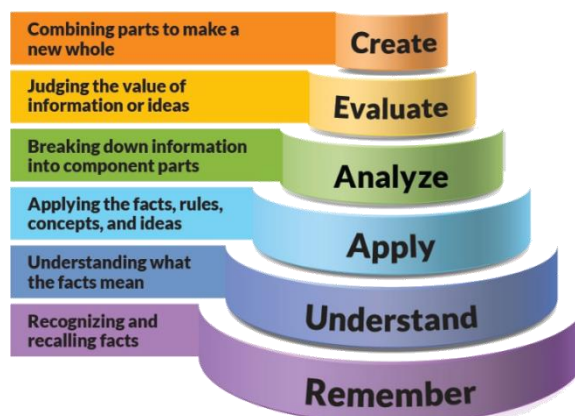


Figure 1: Blooms Taxonomy

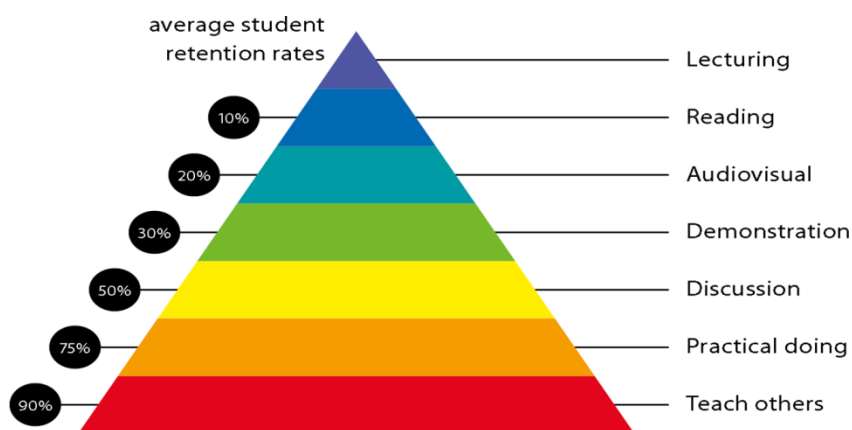


Figure 2: Knowledge retention

Graduate Qualities and Capabilities covered

General Graduate Qualities	Specific Department of _____ Graduate Capabilities
Informed Have a sound knowledge of an area of study or profession and understand its current issues, locally and internationally. Know how to apply this knowledge. Understand how an area of study has developed and how it relates to other areas.	1 Professional knowledge, grounding & awareness
Independent learners Engage with new ideas and ways of thinking and critically analyze issues. Seek to extend knowledge through ongoing research, enquiry and reflection. Find and evaluate information, using a variety of sources and technologies. Acknowledge the work and ideas of others.	2 Information literacy, gathering & processing
Problem solvers Take on challenges and opportunities. Apply	4 Problem solving skills

creative, logical and critical thinking skills to respond effectively. Make and implement decisions. Be flexible, thorough, innovative and aim for high standards.	
Effective communicators Articulate ideas and convey them effectively using a range of media. Work collaboratively and engage with people in different settings. Recognize how culture can shape communication.	5 Written communication
	6 Oral communication
	7 Teamwork
Responsible Understand how decisions can affect others and make ethically informed choices. Appreciate and respect diversity. Act with integrity as part of local, national, global and professional communities.	10 Sustainability, societal & environmental impact

Practical work:

1. Develop a console application to demonstrate exception handling.
2. Develop a console application that shows the use of .net framework collections such as Stack, Queue, HashTable, sortedList, bitArray.
3. Create a windows form that provides a simple calculator to user, which performs addition, subtraction, multiplication and division.
4. Create a simple user registration form and display the data entered by the user.
5. Create a windows form to demonstrate use of controls such as font dialogbox, colordialogbox, combobox, errorprovider, datetimepicker.
6. Create a windows form to perform simple database connectivity; user should be able to view, add, and delete data from the table.
7. Create a student registration form, in which assign ID automatically, take name, branch, and contact number from user using textbox and store the data in the table. Display the contents of table in datagridview control. The form should allow user to update and delete the data in table using datagridview control.
8. Write a program, which uses asp.net controls: The listbox is used to list items available in a store.
9. When the user clicks on an item in the listbox, the image control should display the image

of that item. When the user clicks the button, the cost of the selected item should be display in the control.

10. One of the labels is displayed, adjacent to the textbox, displaying the message “Enter quantity:”,when the user enters the quantity in the textbox and clicks the button, the total cost is evaluated and displayed in another label.

The screenshot shows a web application titled "Select Item". It features a dropdown menu with options "Mouse", "Keyboard", and "Monitor". The "Keyboard" option is selected. To the right of the dropdown is an image of a keyboard. Below the dropdown is a "Calculate" button. To the right of the button is a text box containing the message "You have chosen Keyboard and its cost is Rs.1000". Below the "Calculate" button is a label "Enter quantity:" followed by a text box containing the value "2". Below the "Enter quantity:" label is a "Total Amount" button. To the right of the button is a text box containing the message "You have to pay2000".

11. Use validation controls to validate user input as following form: Use required field validator in each controls along with applicable validations, also use **custom validator** that checks whether the checkbox of terms and conditions is checked or not. In addition, apply suitable validator controls to each control, at the end use **validation summary** to show all error messages.

The screenshot shows a web application interface with four input fields, each with a red error message displayed to its right. The first field is labeled "Enter Password" and has the error message "Password Required Enter Required". The second field is labeled "Confirm Password" and has the error message "Password Required Enter Same Password". The third field is labeled "Enter Your Age" and has the error message "Enter Age Age Required Age should be between 21 to 30". The fourth field is labeled "Enter Your Email Id" and has the error message "Email Id Required Email Id should should be proper".

All prices are f.o.b. point of manufacture. Seller reserves the right to place a service charge on past due accounts at the highest rate permitted by law.

☐ Accept Terms & Condition **Sorry ! You must accept our terms & condition**

12. Use CSS and skin files: Create marks entry form for students, that use different CSS styles for labels and first two textboxes; for button controls and third textbox use skin file; also create two themes folder one for color theme and second for grey theme; use background images in both themes. Apply page level and site level themes.

Enter ID		Enter ID	
Enter Name		Enter Name	
Enter Marks		Enter Marks	
Submit	Clear	Submit	Clear

13. Use **ViewState**: "Provide the feedback for the book ASP.NET with c#". Give the user three choices using radio button: i) Good ii) Satisfactory iii) Bad. Provide a VOTE button. After the user votes, present the result in percentage using labels next to the choices. Also perform the same using **HiddenField Control**.

Please Provide feedback

☐ Good Label

☐ Satisfactory Label

☐ Bad Label

14. Create a login form. If the username and password is admin, navigate to Home.aspx. In Home.aspx page display the username using **QueryString**. If the user is not admin then display as Guest login using **Cookies**.
15. Develop one simple page for login, which uses server side state management techniques

to check and store username entered from the textbox in **application and session state** and display it when button is clicked on the other redirected page. Take one application object and store value of count in application_start method of Global.asax file, and display on redirected page.

16. Create a web form to display various options using navigation control – Menu control both static and dynamic. Use Master Page to display menu items and add content pages which uses that master page to navigate when selected correct item. Also use SiteMapPath control in each page.
17. Perform the above program using TreeView Control.
18. Develop an ASP.Net website that uses Ad Rotator Control to display various images (5 images) in web page.
19. Perform CRUD (Create, Retrieve, Update, Delete) operations with SQL database connectivity in ASP.Net using LINQ.
20. Create a web service in ASP.Net that performs arithmetic operations like add, subtract, multiply and divide; and consume that **web service** in another application.
21. Perform the same exercise as above using **WCF Service**.
22. Develop a simple ASP.Net MVC application in which create a studentcontroller; which takes ID, name, city and branch of student; create appropriate model and implement view on that (Use create and list model templates).

Lecture/tutorial times

CE Lectures	Monday Tuesday Friday	Room Room
Practicals	Monday 11.00pm – 12.50 am Wednesday 11.00pm – 12.50 am	Second floor Lab, Main Building Second floor Lab, Main Building

Text books

1. Beginning ASP.NET 4 in C# and VB by ImarSpaanjaars,, First Edition,2010,ISBN-13: 978-0470502211
2. Beginning ASP.NET 4.5.1 and Professional ASP.NET MVC 5 Imar Spaanjaars, Jon Galloway, Brad Wilson, David Matson, First Edition 2014, ISBN-13: 978-1118794753

Reference Books:

1. ASP.Net 4 Unleashed by Stephen Walther, Kevin Hoffman, Nate Dude, SAMS Publishing. ISBN-13: 978-0-672-33112-1.
2. ASP.Net 4.0 Programming 6-in- 1 Black book, Dramatic Publication. ISBN: 9350040430
3. ASP.Net 4.0 programming, J. Kanjilal, Tata McGraw-Hill .ISBN 13: 9780070499171
4. Programming ASP.Net, D.Esposito, Microsoft Press (Dramatic), Reprint 2011. ISBN-10: 0735627142
5. ASP.Net Visual C#.NET, Vijay Nicole, TMH.ISBN No- 0130661023
6. Advanced .Net Technology, Patel, Dramatic. ISBN 13: 9789350042472

Additional Materials

Web Resource

- VB .NET: <https://www.tutorialspoint.com/vb.net/>
- ASP .NET: <https://www.tutorialspoint.com/asp.net/>
- C# .NET: <https://www.tutorialspoint.com/csharp/>

ASSESSMENT GUIDELINES

Your final course mark will be calculated from the following:

CIE-Theory (60 Marks) MID SEMESTER EXAM 40 marks Assignment 10marks Regularity 10marks	CIE-Practical (60 Marks) Regularity: 20 Marks Practical Test: 20 Marks Mini Project: 20 Marks
ESE-Theory- 40 Marks	ESE-Practical-40 Marks
Total: 200 Marks	

SUPPLEMENTARY ASSESSMENT

Students who receive an overall mark less than 40% in internal component or less than 40% in the end semester will be considered for supplementary assessment in the respective components (i.e internal component or end semester) of semester concerned. Students must make themselves available during the supplementary examination period to take up the respective components (internal component or end semester) and need to obtain the required minimum 40% marks to clear the concerned components.

Practical Work Report/Laboratory Report:

A report on the practical work is due the subsequent week after completion of the class by each group.

Late Work

Late assignments will not be accepted without supporting documentation. Late submission of the reports will result in a deduction of -% of the maximum mark per calendar day

Format

All assignments must be presented in a neat, legible format with all information sources correctly referenced. **Assignment material handed in throughout the session that is not neat and legible will not be marked and will be returned to the student.**

Retention of Written Work

Written assessment work will be retained by the Course coordinator/lecturer for two weeks after marking to be collected by the students.

University and Faculty Policies

Students should make themselves aware of the University and/or Faculty Policies regarding plagiarism, special consideration, supplementary examinations and other educational issues and student matters.

Plagiarism - Plagiarism is not acceptable and may result in the imposition of severe penalties. Plagiarism is the use of another person's work, or idea, as if it is his or her own - if you have any doubts at all on what constitutes plagiarism, please consult your Course coordinator or lecturer. Plagiarism will be penalized severely.

Do not copy the work of other students.

Do not share your work with other students (except where required for a group activity or assessment).

Course schedule (subject to change)

Week #	Topic & contents	CO Addressed	Teaching Learning Activity (TLA)
Weeks 1	Introduction, Programming and application development, Types of application – Windows application, Web application, Console application	I	Chalk & Board, Discussion
Weeks 2	Windows service, Web service, Components and objects. OOPS with C#, Framework, Introduction to C#, Exception handling, Defining classes and class members	I	Presentation, Demonstration
Week 3	Assembly, Components of Assembly, Private and Shared Assembly, Garbage Collector, JIT compiler, Namespaces, Collections.	I	Presentation, Demonstration
Week 4	Application Development using Controls: web based control, ASP.Net page life cycle	II	Presentation, Demonstration (Class Test)
Week 5	Validations, Master page, Themes, Skin, and Introduction to CSS	II	Presentation, Demonstration
Week 6	ASP.NET server controls-Types of control, ASP.NET state management engine,	II	Demonstration
Week 7	Web.config and global.asax files, Caching,	II	Presentation, Chalk & Board, Demonstration
Week 8	Navigation controls, Introduction to user control.	II	Presentation, Chalk & Board, Demonstration (Quiz)
Week 9	Data Architecture (Two, Three, N-tier),	III	Presentation, Chalk & Board Demonstration
Week 10	Security Authentication (None, Passport, Windows, Form),	III	Presentation, Chalk & Board Demonstration
Week 11	Introduction to Database, Using SQL to work with database, Retrieving and manipulating, data with SQL,	III	Presentation, Chalk & Board Demonstration
Week 12	ADO.Net architecture, ASP.Net data controls,	III	Presentation, Chalk & Board Demonstration
Week 13	Linq, Advanced Linq, reporting with CSV, Word and pdf, WCF Services.	III	Presentation, Chalk & Board Demonstration

Week 14	Introduction to “MVC”, Design Engine, Defining Model, Controller and View, Html Helper Classes, MVC Master page,	IV	Presentation, Chalk & Board Demonstration
Week 15	Theme and Design, ViewBag, Viewdata, TempData, MVC state management with Windows and Forms authentication, ActionResult, JsonResult, HttpResponseMessage, Web API, two model Concept, EDMX, web grid concept	IV	Presentation, Chalk & Board Demonstration

