Core Course
CC-307 Web-Site Development - I (ASP.NET)

Course Introduction:
This course aims to make the students capable to develop a web site using well known client-server technology ASP.NET. Through this course, student will learn the basic concepts of Microsoft client-server technology like CLR, PI, web pages and its different web controls, validation controls, ADO.NET, HTTP objects and file handling.

Objectives:
The student would be able
1) To get the practical knowledge of ASP.NET
2) To develop website using visual studio web development environment.
3) To know the framework architecture of .NET
4) To work with disconnected architecture of ADO.NET and can store and retrieve data easily from database.

No. of Credits: 3
Theory Sessions per week: 4
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Introduction**	**10 hours**
	• **The .Net Platform and the Web** o The Pathway to Web Application o The Web Client/Server Model o Components of ASP.NET and the .NET framework o Overview of IIS o Overview of ASP.NET o Language Independence in the .NET framework	3 hrs
	• **Working with ASP.NET** o The Features of ASP.NET o The Anatomy of ASP.NET Pages o Introducing Web Forms o Visual Studio IDE Basics o Code-Behind feature • **Application Configuration** o Over view of Global.asax file and Web.config flie	5 hrs

	• **Web controls for Displaying and Formatting Data** **Following properties should be consider in each control of ASP.NET** **<u>Properties</u>** ▪ AccessKey ▪ BackColor ▪ BorderWidth ▪ BorderStyle ▪ CSSClass ▪ Enabled ▪ Font.Bold ▪ Font.Italic ▪ Font.Name ▪ Font.Overline ▪ Font.Size ▪ Font.Strikeout ▪ Font.Underline ▪ ForeColor ▪ Height ▪ TabIndex ▪ ToolTip ▪ Width ▪ Id ▪ Runat ▪ Text • **Label** o Setting Properties ▪ BorderStyle ▪ BorderWidth • **Panel** o Setting Properties ▪ BackImageUrl ▪ HorizontalAlign ▪ Wrap o Add runtime control/s in panel • **Table** o Setting Properties ▪ BackImageUrl ▪ CellSpecing ▪ CellPadding ▪ GridLines ▪ HorizontalAlign	2 hrs

	• **TableRow**
	  o Setting Properties
	  ▪ HorizontalAlign
	  ▪ VerticalAlign
	• **TableCell controls**
	  o Setting Properties
	  ▪ ColumnSpan
	  ▪ RowSpan
	  ▪ HorizontalAlign
	  ▪ VerticalAlign
	  ▪ Wrap	

2	**Web Controls**	**10 hours**

	• **Web Controls for Creating Buttons**
	• **Button , Image Button, Link Button**
	  o Setting Properties
	  ▪ Command
	  ▪ CommandArgument
	  ▪ ImageUrl (Only for Image Button)
	  o Event
	  ▪ OnClick
	• **Web Control for Inputting Text**
	• **Textbox**
	  o Setting Properties
	  ▪ AutoPostBack
	  ▪ TextMode
	  ▪ Columns
	  ▪ MaxLength
	  ▪ Rows
	  ▪ Text
	  ▪ Wrap
	  o Event
	  ▪ OnTextChanged
	• **Web Controls for Selecting Choices**
	• **CheckBox**
	  o Setting Properties
	  ▪ AutoPostBack
	  ▪ Text
	  ▪ TextAlign
	  ▪ Checked
		8 hrs

- Event
  - OnCheckedChanged

- **RadioButton**
  - Setting Properties
    - AutoPostBack
    - Checked
    - GroupName
    - Text
    - TextAlign
  - Event
    - OnCheckedChanged
- **CheckBoxList , RadioButtonList**
  - Setting Properties
    - AutoPostBack
    - CellPadding
    - DataSource
    - DataTextField
    - DataValueField
    - RepeatColumns
    - RepeatDirection
    - RepeatLayout
    - TextAlign
    - Items
    - SelectedIndex
    - SelectedItem
    - SelectedItems (only for CheckBoxList)
  - Event
    - OnSelectedIndexChanged

- **Web Controls for Creating Lists**
- **ListBox , DropDownList**
  - Setting Properties
    - DataSource
    - DataTextField
    - DataValueField
    - AutoPostBack
    - Rows
    - SelectionMode(Only for ListBox)
  - Event
    - OnSelectedIndexChanged
- **Rich Controls**
- **Calendar**

- Setting Properties
  - CellPadding
  - CellSpaceing
  - DayHeaderStyle
  - DayNameFormat
  - DayStyle
  - FirstDayofWeek
  - NextMonthText
  - NextPrevFormat
  - NextPrevStyle
  - OtherMonthDayStyle
  - PrevMonthText
  - PrevMonthText
  - SelectedDate
  - SelectedDates
  - SelectedDayStyle
  - SelectionMode
  - SelectMonthText
  - SelectorStyle
  - SelectWeelText
  - ShowDayHeader
  - ShowGridLine
  - ShowNextPrevMonth
  - ShowTitle
  - TitleFormat
  - TitleStyle
  - TodayDayStyle
  - TodayDate
  - VisibleDate
  - WeekendDayStyle
- Events
  - DayRender
  - SelectionChanged
  - VisibleMonthChanged

- **AdRotator**
  - Setting Properties
    - AdvertisementFile
    - OnAdCreated
    - KeywordFilter
    - Target
- **File Upload**
- **Other Controls**

	• **Hyperlink**
	  o Setting Properties
	  ▪ NavigateUrl
	  ▪ Text
	  ▪ ImageUrl
	  ▪ Target
	• **Image**
	  o Setting Properties
	  ▪ ImageUrl
	  ▪ AlternateText
	  ▪ ImageAlign
	• **Image Map**
	  o Setting Properties
	  ▪ HotSpotMode
	  ▪ HotSpots
	  ▪ ImageUrl
	  ▪ AlternateText	

	• **ASP.NET Page Directives**
	  o @Page
	  o @Control
	  o @Import
	  o @Register
	  o @Assembly
	  o @OutputCache
		2 hrs

3	**Validation Controls ASP.NET Objects and Data Collection Class**	**10 hours**

	• **Validation Controls**
	Following properties should be considered in each Validator control of ASP.NET
	<u>Properties</u>
	  ▪ ControlToValidate
	  ▪ Display
	  ▪ Enabled
	  ▪ ErrorMessage
	  ▪ ForeColor
	  ▪ IsValid
	• **Required FieldValidator Control**
	• **CompareValidator Control**
	  o Setting Properties
	  ▪ ControlToCompare
	  ▪ Operator
	  ▪ Type
	  ▪ ValueToCompare
		2 hrs

	• **RangeValidator Control**
	  o Setting Properties
	  ▪ MaximumValue
	  ▪ MinimumValue
	• **RegularExpressionValidator Control**
	  o Setting Properties
	  ▪ ValidationExpression
	• **Introduction to Custom Validator control**
	  o Setting Properties
	  ▪ ClientValidationFunction
	  ▪ OnServerValidate	

	• **Data List Controls**
	• **Repeater Control and DataList Control**
	  o Template
	  ▪ AlternatingItemTemplate
	  ▪ FooterTemplate
	  ▪ HeaderTemplate
	  ▪ ItemTemplate
	  ▪ SeparatorTemplate
	• **Introduction of GridView Or DataGrod Control** (Simple Demo of view records using above control)
	• **Introduction of FormView and Detail View Contorls** (Simple Demo of edit, delete and insert records using above control)
		3 hrs

	• **Authoring a User Control**
	  o Login Control
	  o LoginView Control
	  o LoginStatus Control
	  o LoginName Control
	  o PasswordRecovery Control
		2 hrs

	• **ASP.NET Intrinsic Objects**
	  o The HttpRequest Object
	  o The HttpResponse Object
	  o The HttpApplicationState Object
	  o The HttpSessionState Object
		3 hrs

4	**I/O and ADO.NET**	**10 hours**

	• **Handling File I/O**
	  o Reading Text Files
	  o Writing Text Files
	  o Binary Files I/O
	  o Performing File Operations
	  o File Information
		3 hrs

	• **ADO.NET** o ADO.NET Programming Objects and Architecture o Displaying Database Data o Working with The Data Set and Data Table Objects	7 hrs

Note:

(1) These topics can be covered using any version of .NET framework and Visual Studio. Therefore, there will be NO restriction in using the version available with the institute.
(2) VB.NET programming language should be used with ASP.NET
(3) Database should be any version of Ms Access or SQL Express Edition

Textbook:

ASP.NET and VB.NET Web Programming
Publisher: Pearson
By Matt J. Crouch

Chapter – 1 (1.1, 1.2, 1.3, 1.4, 1.5)
Chapter - 3 (3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.16, 3.17, 3.18, 3.19, 3.23.1, 3.23.2, 3.24.4, 3.24.5)
Chapter – 4 (4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7)
Chapter – 7 (7.1, 7.2, 7.3, 7.4, 7.6)

Reference Book:

ASP.NET Developer's Guide
Publisher: McGraw Hill
By Gerg Buczek

Core Course
CC-308 Database Administration

Course Introduction:
This course will help students to develop the database administration capabilities and will discuss how to create and manage database, users, roles and resources. It also gives them in depth knowledge of important features of Oracle database administrator.

Prerequisite:
Student should have knowledge about database management system and structured query language.

Objectives:
The student would be able

1) To obtain knowledge about the basics of database administration.
2) To understand how to maintain a database quickly & accurately.
3) To design, manage and solve the issues related to the database server.

No. of Credits: 3
Theory Sessions per week: 4
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Understanding Oracle Architecture , Administering Databases and Tablespace , Creating Database**	**10 hours**
	• **Oracle Database Structure** o Logical Database Structure o Physical database structure o Oracle Instance ▪ Memory Structures ▪ The SGA ▪ The PGA o Oracle Processes ▪ The DBWR ▪ LGWR ▪ CKPT ▪ SMON and PMON ▪ ARCH and RECO ▪ LCNn and Dnnn o Types of Database Architecture ▪ Client/Server Architecture ▪ Multi-tier Architecture o Database users and administrators ▪ Types of Oracle Users	5 hrs

	▪ Responsibilities of database Administrator ▪ Database Administrator Privileges	
	• **Creating Databases** o Using the CREATE DATABASE Statement o Creating Tablespaces o Building Data Dictionary views o Tablespaces ▪ Considerations for managing tablespaces ▪ Types of tablespaces ▪ Altering and dropping tablespaces ▪ Moving tablespaces between databases ▪ Retrieving Tablespace Information	5 hrs
2	**Managing Physical Files**	**10 hours**
	• **Control Files** o Considerations for managing Control Files o Creating and Dropping Control Files o Backing up and Recovering Control Files o Retrieving Control Files Information ▪ Online Redo log files ▪ Creating online redo log groups ▪ Relocating, renaming and dropping redo log files ▪ Retrieving online redo log files information o Archieved redo log files ▪ Managing archieved redo log files ▪ Defining the location and mode of archieved redo log files ▪ Retreiving archieved redo log file o Data files ▪ Considerations for managing datafiles ▪ Renaming, relocating and dropping datafiles ▪ Retrieving datafiles information	5 hrs
	• **Administering Users, Privileges and Roles** o Managing profiles and users ▪ Prerequisites to work with profile ▪ Creating profiles ▪ Altering and dropping profiles ▪ Creating Users ▪ Altering and dropping users ▪ Retrieving information about profiles and users o Managing Privileges ▪ Granting and revoking system level privileges ▪ Granting and revoking object level privileges	5 hrs

	▪ Retrieving information about privileges o Managing Roles ▪ System level roles ▪ Creating roles ▪ Granting and revoking roles from users ▪ Enabling and disabling roles ▪ Altering and dropping roles ▪ Retrieving information about roles	
3	**Indexes and Cluster**	**10 hours**
	• **Overview of Indexes** o Need for indexes o Guidelines for creating, dropping or disabling Indexes o Creating Indexes ▪ Unique and non-unique Indexes ▪ Composite Indexes ▪ Function based Indexes ▪ B-tree Indexes ▪ Bitmap Indexes ▪ Reverse key Indexes ▪ Index organized tables o Administering Indexes ▪ Partitioning Indexes ▪ Rebuilding Indexes ▪ Coalescing Indexes ▪ Checking validity of Indexes ▪ Dropping Indexes ▪ Retrieving information about Indexes	9 hrs
	• **Clusters** o Creating Clusters o Creating clusters tables o Creating clustered indexes o Altering Clusters o Dropping Clusters o Hash Clusters	1 hrs
4	**Optimizing Database Performance & Backup and Recovery**	**10 hours**
	• **Overview of an Optimizer** o Types of optimizers o Optimizer Operations o Generating Statistics o Tuning SQL statements o Explain_plan statement o Creating the Plan_table output table	5hrs

	○ Executing the Explain_Plan statement ○ Querying the Plan_table output table ○ Tuning oracle databases ○ Tuning memory usage ○ Tuning data storage ○ Tuning physical storage ○ Tuning logical storage	
	• **Backup and Recovering Data** ○ Backing up data ○ Planning data backup ○ Types of backup ○ Using Export Utility ○ Using Import Utility ○ Using Offline Backup ○ Using online backups • **Recovering Data** ○ Planning Data Recovery ○ Types of Recovery ○ Data Structures for Recovering Data ○ Recovery Manager Commands ○ Recovery using RMAN commands	5 hrs

Textbook:

Administering Oracle (First Edition 2004)
Publisher: BPB Publications
By Ivan Byross

Reference Books:

1. Beginning Oracle Database 11g Administration
   Publisher: Apress Publications
   By Iggy Fernandez

2. Database Administration: Implementation and Administrator
   Publisher: Cengage Publications
   By Gavin Powell, Carol McCullough-Dieter

3. Oracle 11g Administration in Simple Steps
   Publisher: Dreamtech Publications
   By Kogent Learning Solutions Inc.

Core Course
CC-309 Ecommerce

Course Introduction:
The growth of the Internet continues to have a tremendous influence on the way business is conducted. Companies and organizations of all types and sizes are rethinking their strategies and how they run their operations. This course will help students explore the realities and implications of e-commerce as well as learn the different e-commerce models like Business-to-Consumer (B2C) and Business-to-Business (B2B) etc. The course introduces students to a wide range of electronic commerce issues, as a foundation for continual learning in the dynamic e-commerce environment.

Objectives:
The student would be able:

1) To gain an understanding of the theories and concepts underlying e-commerce.
2) To apply e-commerce theory and concepts to what is happening in "the real world".
3) To improve familiarity with current challenges and issues in e-commerce.
4) To study the security issues related to e-commerce.

No. of Credits: 3
Theory Sessions per week: 4
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Introduction to E- Commerce**	**10 Hrs**
	• **E-Commerce: The revolution is just beginning** o What is E-Commerce? o The difference between E- Commerce and E-Business o Eight Unique Features of E-Commerce Technology o Introduction to Web 2.0 o Types of E-Commerce	3 hrs
	The Internet and World Wide Web : E-Commerce Infrastructure	
	• **The Internet: Technology Background** o The Evolution of the Internet 1961 – the Present o The Internet : Key Technology Concepts o Other Internet Protocols and Utility Programs • **The Internet Today** o The Internet Backbone o Internet Exchange Points o Campus Area Networks (CANs) o Internet Service Providers o Internets and Extranets • **Introduction to Internet 2** • **The Internet and the Web: Features**	7 hrs

	○ E-mail ○ Instant Messaging ○ Search Engines ○ Intelligent Agents (Bots) ○ Online Forums and Chat ○ Streaming Media ○ Cookies	
2	**Online Security and Payment System**	**10 Hrs**
	• **The E-Commerce Security Environment** ○ Scope of the problem ○ What is good E-commerce security? ○ Dimensions of E-commerce security ○ The tensions between security and other values • **Security Threats in the E-Commerce Environment** ○ Malicious code ○ Unwanted programs ○ Phishing and Identity theft ○ Hacking and Cyber vandalism ○ Credit Card Fraud/Theft ○ Spoofing and Spam Web Sites ○ Sniffing ○ Insider attacks ○ Poorly designed server and client software • **Technology solution** ○ Protecting Internet communications ○ Encryption (excluding: limitation of encryption solutions)	10hrs
3	**Payment Systems, Social Networks and Online Auctions**	
	• **Types of Payment systems** ○ Cash ○ Checking transfer ○ Credit card ○ Accumulating balance • **E-Commerce payment systems** ○ Online credit card transaction ○ Digital wallets ○ Digital cash ○ Online stored value systems ○ Digital accumulating balance payment systems ○ Digital checking payment systems ○ Wireless payment systems	5 hrs
	Social Networks, Auctions and Portals	
	• **Social Networks and Online Communities** ○ What is online social network?	5 hrs

	○ Difference between Social networks and Portals ○ Social network features and technologies ○ The future of social networks • **Online Auctions** ○ Defining and measuring the growth of auctions and dynamic pricing ○ Why are Auctions so popular? Benefits and costs of Auctions (excluding: market-maker benefit) ○ Types and examples of Auctions	
4	**Ethical, Social and Political issues in E-commerce**	**10 Hrs**
	• **Understanding Ethical, Social and Political Issues in E-Commerce** ○ A model for organizing the issues ○ Basic ethical concepts: responsibility, accountability and liability ○ Analyzing ethical dilemmas ○ Candidate ethical principles • **Intellectual property rights** ○ Types of Intellectual property protections ○ Copyrights: the problem of perfect copies and encryption ○ Patents: business methods and processes ○ Trademark: online infringement and dilution • **Governance** ○ Public government and law ○ Introduction to Taxation	10 hrs

Textbook:

E-Commerce – Business, Technologies, Society (2008), 4th Edition
Publication: Pearson
Kenneth C. Laudon, Carol Guercio Traver

Reference Books:

1. E-Commerce Strategy, Technology and Implementation
   Publication: Cengage Learning
   By Gary P. Schneider

2. Electronic commerce
   Publication: TATA Mc Graw Hill
   By Bharat Bhasker

3. Electronic Commerce A Managers' Guide
   Publication: Pearson
   By Ravi Kalakota, Andrew B. Whinston

4. Electronic Commerce A simplified Approach
   Publication: JAICO
   By Munesh Chandra Trivedi

5. e-Business 2.0
   Publication: Pearson
   By Ravi Kalakota, Marcia Robinson

Core Course
CC-310 *CC-307 Practical

Course Introduction:
This course makes the student capable to develop a web site using well known client-server technology ASP.NET. Through this course, student will learn the basic concepts of Microsoft client-server technology and its different web controls, validation controls, ADO.NET, HTTP objects and file handling.

Objectives:
The student would be able
1) To get hands on experience on Visual Studio.Net.
2) To develop Web application using ASP.Net.
3) To work with disconnected data base architecture of ADO.Net.

No. of Credits: 3
Practical Sessions per week: 3
Teaching Hours: 40 hours

The students are expected to write programs unit wise as given below.
The list in each unit is **indicative only and may or may not be asked in the examination.**

UNIT	TOPICS / SUBTOPICS		TEACHING HOURS
1	**Introduction**		**10 hours**
	1	Create an application which count the total number of users visited the page. (Using global.asax).	
	2	Create web page which will display School mark sheet using table control.	
	3	Create web page which will show the score card of Indian cricket match using Table Control.	
	4	Create web page which will ask the employee personal detail, education detail, work experience detail with use different panel for each part.	
	5	Create web page which will ask payment detail of customer purchase, this detail either in Cash or Credit/Debit card or by Cheque. According to the payment mode panel control will display and accept payment detail and display all that detail in next page using label control.	
	6	Create a Electricity bill web page using Tables controls	
	7	Write a program that displays a label in green color and it should change into yellow when the mouse moves over it.	
2	**Web Controls**		**10 hours**
	1	Write a simple ASP.NET program to display the following Web Controls: • A button with text “click me”. The button control must be in the center of the form. A label with a text hello • A checkbox. The form name must be Web Controls	

	2	Write a program to display “Hello World” in the form when the “click” button is clicked. The Form title must be ASP.NET.	
	3	Write a program containing the following controls: • A ListBox • A Button • An Image • A Label The listbox is used to list items available in a store. When the user clicks on an item in the listbox, its image is displayed in the image control. When the user clicks the button, the cost of the selected item is displayed in the control.	
	4	Extend the above program to add the following controls: • Two labels • A TextBox • A Button One of the labels is displayed adjacent to the textbox, displaying the message “Enter the quantity:” When the user enters the quantity in the textbox and clicks the button, the total cost is evaluated and displayed in another label.	
	5	Create a RadioButtonList that displays the names of some flowers in two columns. Bind a label to the RadioButtonList so that when the user selects an option from the list and clicks on a button, the label displays the flower selected by the user.	
	6	Create a user control that contains a list of colors. Add a button to the Web Form which when clicked changes the color of the Form to the color selected from the list.	
	7	Create a new Web form which allows the client to enter student information such as name, email address, sex and telephone number. The page also provides a submit button, which when clicked, will add this information to a TextBox which will also be displayed on the same page.	
	8	Create a product catalog facility for an online mobile store. The web page will display multiple mobile phone photos and their prices. When user clicks on any particular photo, he or she should be navigated to the page for that mobile. This page will contain all details and features of selected mobile phone.	
	9	Develop an application which allow user to upload a .jpeg file and display it in an image box on the same page.	
3	**Validation Controls ASP.NET Objects and Data Collection Class**		**10 hours**
	1	Write a program that gets user input such as the user name, mode of payment, appropriate credit card. After the user enters the appropriate values the Validation button validates the values entered.	
	2	Create a Form that receives the user name, address, date, nationality, country preferred for working and skill sets from the user. The country preferred data should appear in a dropdownlist whereas; others should be entered in a textbox. Validate all the controls. The Form is named “formexp.aspx”.	

		The date should appear between “1/1/1900” and “1/1/2090”.	
	3	Create a user control that receives the user name and password from the user and validates them. If the user name is “ASP” and the password is “NET” then the user is authorized, otherwise not.	
	4	Write a simple Web application which keeps track of the number of times a user has visited the page from the same machine. The application keeps track of this information by storing this counter value in a persistent cookie at the client’s machine.	
	5	Accept ItemCode, ItemName, ItemPrice and Qty from the user, store it as cookies and then display them on the next page.	
	6	Show an example of how your Web application can read from a database table using a DataReader class, and show the information in a DataGrid for display in your Web page.	
	7	Create a table StudentInfo, which contain rollno, name and year of a student. And also create a table StudentScore which contain marks of three subjects for each student. Display name of all the students in a DropDownList and according to user’s choice, particular student record should display in a FormView/DetailView control.	
4	**I/O and ADO.NET**		**10 hours**
	1	Create a Global.asax file with Application variables cont, color1 and gotohp. Create a Session variable called cont1. Initialize cont as 0 and assign any color to color1. For the variable gotohp, give a hyperlink to any Website. Use the variables in a Web Form.	
	2	Create a Table, which displays two columns and three rows. The first row displays eno, the second displays ename and the third displays esal, all of these being retrieved from the emps table. Each of the above is displayed as a drop-down list, containing all the values of the corresponding column in the table.	
	3	Develop a web application to reserve online in a hotel. The user should enter date of arrival, number of days, room type, number of persons etc. He would be able to confirm booking and allowed to pay advance on confirmation.	
	4	Create an application to display all records from an Employee table with proper formatting.	
	5	Write a simple Web application which reads off a table in an Access database file and display the data in a Web form.	
	6	Write a simple CRUD (Create, Read, Update, Delete) Web application which reads, updates, inserts and deletes rows from the StudentInfo table which you have created for the previous exercise.	
	7	Develop an application for online booking for a picture in a cinema hall. User should be able to select date, time, picture and tickets. If the tickets are available user should be able to generate ticket.	
	8	Design master page which contain information about your college. Display College title with different properties. Take	

		two contain pages have following:- • Contain Page 1 : Design attractive page have all possible operations on given database (Add, Delete, update, Select) • Contain Page 2 : Use repeater control does display all records from table. Table: Student (Roll No, Name, Date of birth, total)	
	9	Create web page which will transfer text file data from client pc to server using I/O	
	10	Crate web page which will create copy of file given by the user.	
	11	Create web page which will delete file given by the user from the web site folder.	
	12	Create web page which will display details of file, selected by the user.	

Note:

(1) These topics can be covered using any version of .NET framework and Visual Studio. Therefore, there will be NO restriction in using the version available with the institute.
(2) VB.NET programming language should be use with ASP.NET.
(3) Database should be any version of Ms Access or SQL Express Edition.

Textbook:

ASP.NET and VB.NET Web Programming
Publisher: Pearson
By Matt J. Crouch

Reference Book:

ASP.NET Developer's Guide
Publisher: McGraw Hill
By Gerg Buczek

Core Course
CC-311 Multimedia Tools (Practical)

Course Introduction:
Multimedia offers exciting possibilities for meeting the needs of 21st century learners. The tools available for multimedia can enhance the student learning. This course helps the students in understanding the basic concepts of creating interactive animation. The student would be able to get a deep knowledge about 2D animation tool and will be able to have a glance of 3D animation tool.

Objectives:
The student would be able to
1) Familiarize with 2D and 3D Animation environment.
2) Create visual elements and object of their imagination.
3) Can make advertisement and designs.
4) Learn to add sound, text, video in animation.

No. of Credits: 3
Practical Sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Introduction to Flash environment.**	**10 hours**
	• **Tool bars** o Main toolbar o Status bar o Controller bar	2 hrs
	• **Stage and work area** o Workspace o Stage o Scenes o Layers o Key frames	3 hrs
	• **Working with panel** o Info panel o Transform Panel o Align Panel o Color Mixer Panel o Property Panel o Library o Action Panel o Common Library o Scene Panel o Color Swatches	5 hrs

2	**Familiar with tools &timeline And work with text & symbols.**	**10 hours**
	• **Tools (with tools Property)** o Selection o Sub Selection o Free Transform Too o Gradient Transform tool o Line o Lasso tool o Pen tool o Text o Oval o Rectangle o Pencil o Brush o Ink Bottle o Paint Bucket tool o Eyedropper o Eraser tool • **Timeline**	4 hrs
	• **Text and its property** o Static text o Dynamic text o Input text	3 hrs
	• **Symbols** o Graphics o Movie clip o Buttons	3hrs
3	**Animation, sound and Publishing files**	**10 hours**
	• **Animations** o Motion tweening o Frame-by-frame o Shape tweening	4 hrs
	o Character tweening o Masking o Guided motion tween	4 hrs
	• **Sound** o Adding Sound o Stop Sound o Importing sound files o Placing sound files in keyframes	1 hrs
	• **Publish files** o As Shockwave flash file(SWF) o HTML file o Jpg o Gif o EXE file	1 hrs
4	**Action Script and Introduction of 3D animation software**	**10 hours**
	• **Action Script** _x (current x coordinate) _y (current y coordinate) If() else statements	5 hrs

	○ **Timeline Control** All actions ○ **Movie clip control** setProperty(), getProperty(), startDrag(), on(), stopDrag() ○ **Browser/Network** fscommand – quit , fullscreen, getUrl(), loadMovie(), loadMovieNum(), fullscreen	
	• **3D animation software** Interface and navigation Creating 3D object Animating 3D object Materialize property Lighting effect setting	5 hrs

Note:

(1) 2D animation topics can be covered using any version of Flash. Therefore, there will be NO restriction in using the version available with the institute.
(2) For 3D animation, the institute may use any open source multimedia software.
(3) Questions based on 2D animation tool should only be asked in examination.

The students are expected to create animation as listed below.
The list is **indicative and may or may not be asked in the examination.**

1. Create an animation on the theme of Uttarayan.
2. Create an application with 2 scenes.
   Scene 1: Make the use of Masking and display a message.
   Scene 2: Create an application which generates the mark sheet of the students. Also assigns the grades as per the percentage. The rules to be followed for the grades are as follows:
   If Percentage is <40 = F Grade If between 80 to 90 = A Grade
   If between 40 to 50 = D Grade More than 90 = A+ Grade
   If between 50 to 60 = C Grade
3. Create an application which follows a hierarchy as below:
   Scene 1: Accepts User Name and Password. If they are correct then traverse them to next scene/file.
   Scene 2: It has 2 options (Animals and birds). As the option is selected we traverse them to next scene.
   Scene 3: According to the selected option display slideshow for it. Along with it there should be a link for explanation. When clicked on it the explanation for same should be displayed.
   Each and every scene should contain back and home buttons.
4. Create the EXE and run in full screen mode. Create the movie with the scenes as below:
   scene1: "WELCOME" AND CREATED BY: "YOUR NAME" gives the effects of your choice and a button to go to index.
   Scene2: index with the title scene1 and scene3. Clicking on a particular scene should run only that scene and there should be button to go back to the index in each scene.

5. Create an application stormy day with rain fall and dark clouds moving. The application should have Replay and Quit buttons. If replay button is clicked the animation should start.

Reference Books:

1. Macromedia FLASH 8 advanced for Windows and Macintosh
   Publication: Pearson Education
   By Chun Robertson

2. Adobe Flash Professional CS6 Classroom in a book
   Publication: Pearson (Adobe Press)

3. Adobe Flash CS4 Professional Bible
   Publication: Willy India Edition
   By Robert Reinhardt, Snow Dowd

4. Online tutorial and E-books for Open source 3D animation software.

Core Course
CC-312 Software Development Project-PART II

Course Introduction:
Students would have taken the project in semester V as per the guidelines of SDP Part-I and required to continue to work in developed of software in the VIth semester. This course is designed to provide the student experience in working with a client organization from the initial request through a final design and development of prototype software.

Objectives:

- Synthesize skills and knowledge gained into an innovative technology solution.
- Develop systems development skills.
- Gain experience in exploring/using software development and documentation tools.

No. of Credits: 5
Mode of study: One day off to work on the project in a week

Course Contents:

1. Developing System Design
2. Writing code for the project
3. Doing testing of the code

Deliverables by the students:
At the end of the semester, the student should be able to successfully develop the project and prepare the documentation (hard copy) as well as presentation of the project details.

- **Documentation:**
    - A single hard bound documentation of SDP Part-II should also consist of the documentation prepared in SDP Part-I.
    - Although the students might have submitted the documentation of SDP Part-I, it should not be considered for evaluation.

  A hard copy of the documentation should consist of the additional following details:
    - Cover Page
    - Company Certificate
    - College Certificate
    - Acknowledgement
    - Index (with page nos.)
    - Screen layouts
    - Report layouts
    - Sample coding (optional)
    - Future Enhancements (optional)
    - Conclusion
    - Bibliography

Presentation:

- Presentations can be prepared through slides using Open Source / Power Point / Flash or any other multimedia tool, covering the work shown in the documentation.
- During viva exams, students will be expected to satisfactorily answer the questions pertaining to the tools used, the process, the reports /forms created and the results achieved.

Foundation Course
FC-302(1) Computer Graphics

Course Introduction:
The aim of the course is to provide an introduction to the theory and practice of computer graphics. The student will also be able to get knowledge about geometric transformations using 2D technology and a general idea of 3D technology.

Objectives:
Students would be able
1) To learn the basics of computer graphics.
2) To understand various algorithms for drawing line, circle and polygon.
3) To get an overview of 2D and 3D technology.
4) To get an overview of various advanced graphics standards and techniques.

No. of Credits: 2
Theory Sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Overview of Computer Graphics, Mathematical Foundation for Computer Graphics**	**10 hours**
	• **Introduction** o Historical Background of Computer Graphics o Applications of Computer Graphics ▪ Entertainment ▪ Advertisement ▪ Simulation Modeling ▪ Architecture ▪ Information Visualization and Processing ▪ Virtual Reality ▪ Image Processing ▪ Others o Some Popular Graphics Software o Pixel Graphics vs. Vector Graphics o Hard Copy Graphics Devices ▪ Dot Matrix Printers ▪ Inkjet Printers ▪ Laser Printers ▪ Plotters o Computer Display Devices ▪ Early Days of Image Processing ▪ Cathode Ray Tube	

	▪ Liquid Crystal Display ▪ LED o Input Devices ▪ Text Input Devices ▪ Pointing Devices ▪ Image and Video Input Devices	
	• **Mathematical Foundation for Computer Graphics** o Basic Geometry ▪ Straight line and Line Segment ▪ Circle	
2	**Graphics Primitives, Polygons**	**10 hours**
	• **Graphics Primitives** o Line Drawing Algorithms ▪ VECGEN Algorithm ▪ Brasenham Line Drawing Algorithm o Circle Generating Algorithms ▪ Parametric Circle Drawing Algorithm ▪ Brasenham Circle Drawing Algorithm	
	• **Polygons** o Polygon o Polygon Inside Tests ▪ Even-Odd Method o Polygon Area Filling ▪ Flood Fill Method ▪ Boundary Fill Method	
3	**Geometric Transformations, Viewing in Two Dimensions**	**10 hours**
	• **Geometric Transformations** o Basic Transformations ▪ Scaling ▪ Translation ▪ Rotation	
	• **Viewing in Two Dimensions** o Windows and Viewport o Viewing Transformation o Clipping ▪ Point Clipping ▪ Line Clipping	
4	**Graphics Standards, Introduction to Advanced Graphics Techniques**	**10 hours**
	• **Graphics in 3D Dimensions** o Displays in Three Dimensions o 3-D Transformations	

	• **Graphics Standards**
	  o Graphics Kernel System
	  o PHIGS
	  o OpenGL
	  o Graphics File Format
	  ▪ Bitmap
	  ▪ JPEG
	  ▪ GIF	

	• **Introduction to Advanced Graphics Techniques**
	  o Computer Animation
	  o Morphing
	  o Digital Image Processing	

Textbook:

Computer Graphics
Publisher : PHI
By Apurva A. Desai

Chapter - 1 (1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7)
Chapter - 2 (2.1(2.1.1, 2.1.2))
Chapter - 3 (3.1, 3.2)
Chapter - 4 (4.1, 4.2(4.2.1), 4.3(4.3.1, 4.3.3))
Chapter - 5 (5.1)
Chapter - 6 (6.1, 6.2, 6.3)
Chapter - 7 (7.1, 7.2)
Chapter - 10 (10.1, 10.2, 10.3, 10.4)
Chapter - 11 (11.1, 11.2, 11.3)

Reference Books:

1. Computer Graphics
   Publisher : McGraw Hill
   By Amarendra N Sinha, Arun D Udai

2. Computer Graphics
   Publisher : PHI
   By Chennakesava R. Alavala

Foundation Course
FC-302(2) Enterprise Resource Planning

Course Introduction:
The course would make students aware about ERP theory and practice. This course provides the students with the knowledge of evolution of ERP systems, business process reengineering, ERP technologies, process mapping, ERP life cycle and ERP auditing and risk issues.

Objectives:
The student would be able

1) To comprehend the technical aspects of ERP systems.
2) To learn concepts of reengineering and how they relate to ERP system implementations.
3) To understand the success and failure factors of ERP implementation.
4) To understand the steps and activities in the ERP life cycle.
5) To identify and describe typical functionality in an ERP system.

No. of Credits: 2
Theory Sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Introduction to Enterprise and ERP**	**10 hours**
	• **An overview of Enterprise** o Introduction o Business Functions and Business Processes o Integrated Management Information o Role of the Enterprise in Implementing the ERP System o Business Modeling	
	• **Introduction to ERP** o Introduction o Common ERP Myths o A Brief History of ERP o The Advantages of ERP o Why ERP Package Now o Over Expectation in ERP o Roadmap for successful ERP implementation o The Role of CIO	

	• **Basic Concepts of ERP** o Will ERP fit the ways A Company does Business? o Why is ERP important to A Company? o ERP market has Grown and will continue to Grow o How does ERP create Value?	
2	**Risk, Benefits and Technologies related to ERP**	**10 hours**
	• **Risks and Benefits of ERP** o Risks of ERP o Risk Factors of ERP Implementation ▪ People Issues ▪ Process Risks ▪ Technological Risks ▪ Implementation Issues ▪ Operation and Maintenance issues o Benefits of ERP ▪ Information Integration ▪ Reduction of Lead-time ▪ On-time Shipment ▪ Reduction in Cycle Time ▪ Improved Resource Utilization ▪ Better Customer Satisfaction ▪ Improved Supplier Performance ▪ Increased Flexibility ▪ Reduced Quality Costs ▪ Better Analysis and Planning Capabilities	
	• **ERP and Related Technologies** o Introduction o Business Process Reengineering (BPR) o Data Warehousing o Data Mining o On-line Analytical Processing (OLAP) o Product Life Cycle Management (PLM) o Supply Chain Management (SCM) o Customer Relationship Management (CRM) o Geographical Information Systems (GIS) o Intranet and Extranets o Advanced Technology and ERP Security o Middleware o Security and ERP	

3	**ERP – Functional Modules, ERP- Implementations**	**10 hours**
	• **ERP-Functional Modules** o Introduction o Functional Module of ERP Software ▪ Financial Module ▪ Manufacturing Module ▪ HR Module ▪ Materials Management Module ▪ Production Planning Module ▪ Plant Maintenance Module ▪ Quality Management Module ▪ Purchasing Module ▪ Marketing Module ▪ Sales and Distribution Module	
	• **ERP-Implementation** o ERP-Implementation Basics ▪ Why ERP? ▪ Technological, Operational, and Business Reasons for Implementing ERP ▪ Implementation Challenges o ERP Implementation Life Cycle ▪ Objectives of ERP Implementation ▪ Different Phases of ERP Implementation	
4	**Success & Failure Factors of an ERP Implementation, Present & Future**	**10 hours**
	• **Success & Failure Factors of an ERP Implementation** o Success Factors o Failure Factors	
	• **Present and Future** o ERP and eBusiness ▪ eBusiness – Supply Chain Integration ▪ The eBusiness Process Model ▪ ERP / eBusiness Integration o ERP, Internet and WWW – ERP II ▪ ERP, Internet and WWW ▪ ERP to ERP II – Bringing ERP to the ERP Enterprise	

Textbook:

Enterprise Resource Planning (Second Edition)
Publisher: McGraw Hill
By Alexis Leon

Chapter - 1 (Excluding – Integrated Data Model)
Chapter - 2 (Excluding – The Future of ERP Packages)
Chapter - 3 (All the topics)
Chapter - 4 (Risks of ERP, Risk Factors of ERP Implementation, Benefits of ERP)
Chapter - 5 (Excluding – Technological Advancements, Computer Security, Crime Security)
Chapter - 7 (Introduction, Functional Module of ERP Software)
Chapter - 8 (All the topics)
Chapter - 9 (Objectives of ERP Implementation, Different Phases of ERP Implementation)
Chapter - 15 (Success Factors, Failure Factors)
Chapter - 18 (eBusiness-Supply Chain Management, The eBusiness Process Model, ERP/eBusiness Integration)
Chapter - 19 (ERP, Internet and WWW, ERP to ERP II – Bringing ERP to the Entire Enterprise)

Reference Books:

1. ERP Demystified (Second Edition)
   Publisher: McGraw Hill
   By Alexis Leon

2. Enterprise Resource Planning
   Publisher: MacMillan Publications
   By Mahadeo Jaiswal and Ganesh Vanapalli

3. Enterprise Resource Planning (Edition-2008)
   Publisher: Pearson
   By Summer

Foundation Course
FC-302(3) Customer Relationship Management

Course Introduction:
The course would make students to understand the significance of customer relationship management in business. The course will create awareness regarding contemporary uses of eCRM in business.

Objectives:
The student would be able

1) To obtain basic understanding of the Customer Relationship Management practiced in industry.
2) To understand how customer is important in a business.
3) To understand different terms like loyalty management, quality management and eCRM.

No. of Credits: 2
Theory Sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Understanding CRM**	**10 hours**
	• **Customer relationship management** o Definition o Framework o Scope and evolution o Core module of CRM o Technology and CRM o Levels of CRM • **Loyalty management** o Loyalty management o Loyalty Programmes o Planning and Managing loyalty programmes o Types of loyalty programmes o Reasons of failure of loyalty programmes	
	• **Service quality and service capacity planning** o Service quality and CRM o Concept of service capacity o Service capacity planning process o Using queuing theory for service capacity planning o Analysis of a queue system	

2	**Customer-driven quality and quality management system**	**10 hours**
	• **Customer-driven quality and QMS** o Quality and its relevance to CRM o Understanding customer-driven quality o Quality management o Quality policy o Quality objectives o Quality management system o Quality management system standard o Quality management principles o Quality system documentation o Implementation of quality management systems	
	• **CRM and sales force automation** o Sales force automation o Objectives of SFA o Features of SFA o Strategic advantages of SFA o Key factors for successful SFA	
3	**eCRM, Planning and implement ting CRM**	**10 hours**
	• **eCRM** o What is eCRM? o Benefits of eCRM o Data handling in eCRM o ECRM system/application in market o Specification of eCRM solutions	
	• **Planning and implement ting CRM** o Scope and significance of a CRM project o Business process reengineering for CRM implementation o CRM implementation process	
4	**Making CRM a success, IT solution of CRM and its integration, future of CRM**	**10 hours**
	• **Making CRM a success** o Success factor for CRM o Business process reengineering for CRM implementation o Data quality management o Securing customer data: information security management system o Ethical issue in CRM	
	• **IT solution of CRM and its integration** o The eCRM project implementation road map o Integrating CRM o Integrating CRM and SCM	

	○ Integrating CRM and SRM ○ ERM • **Future of CRM** ○ Emerging technologies and CRM	

Textbook:

CRM:Customer Relationship Management
Publisher: McGraw Hill
By Urvashi Makkar, Harinder Kumar Makkar

Reference Books:

1. Customer Relationship Management Concepts & Application
   Publisher: Dreamtech Press
   By Alok Kumar, Chhabi Sinha, Rakesh Sharma

2. Customer Relationship Management
   Publisher: Dreamtech Press
   By Dr. Jaspret Kaur Bhasin

3. Customer Relationship Management Getting It Right!
   Publisher: Pearson
   By Judith W. Kincaid

Subject Elective Course
SEC-302(1) Mobile Application Development

Course Introduction:
This course will introduce students to mobile computing and mobile application development. It discusses overview of mobile computing, technologies and wireless communication. Students will be expected to learn basics of Android Framework.

Objectives:
The student would be able

1) To understand how mobile network works.
2) To understand the process of developing software for the mobile device.
3) To create simple mobile applications on the Android Platform.

No. of Credits: 3
Theory Sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Introduction**	**10 hours**
	• **Introduction to Mobile Computing and Wireless Networking** o What is Mobile Computing? o Mobile Computing vs. Wireless Networking o Mobile Computing Applications o Characteristics of Mobile Computing o Structure of Mobile Computing Application o Cellular Mobile Communication o GSM o GPRS o UMTS	5 hrs
	• **MAC Protocols** o Properties of MAC Protocols o Wireless MAC Protocols o A Taxonomy of MAC Protocols o Fixed Assignment Schemes o Random Assignment Schemes	5 hrs
2	**Mobile Internet Protocol, Mobile Transport Layer and Mobile Database**	**10 hours**
	• **Mobile Internet Protocol** o Mobile IP o Overview of Mobile IP o Packet Delivery o Desirable Features of Mobile IP	4 hrs

	○ Key Mechanism in Mobile IP	
	• **Mobile Transport Layer** ○ Overview of TCP/IP ○ Terminologies of TCP/IP ○ Improvements in TCP Performance	3 hrs
	• **Operating System for Mobile Computing** ○ Operating System Responsibilities in Mobile Device ○ Mobile OS – A Few Basic Concepts ○ Special Constraints and Requirements of Mobile OS ○ A Survey of Commercial Mobile OS ○ A Comparative Study of Mobile OSs.	3 hrs
3	**Introduction to Android**	**10 hours**
	• **Getting Started with Android** ○ Android SDK ○ Creating an Emulator ○ Creating a New Android Project	3 hrs
	• **Exploring the Application Basics** ○ The Files ○ The Manifest ○ The Activity Class ○ Watching the Activity in Action ○ Implementing your own Activity ○ The Intent Class ○ Manifest Registration ○ Adding an Intent ○ Listening for Intents at Runtime ○ Moving your Own Data ○ The Application Class ○ The Default Application Declaration ○ Customizing your own Application ○ Accessing the Application	7 hrs
4	**User Interfaces**	**10 hours**
	• **Creating User Interface** ○ The View Class ○ Creating a View ○ Altering the UI at Runtime ○ Crating custom Views ○ Resource Management ○ Resource Folder Overview ○ Values Folder ○ Layout Folders ○ Drawable Folders	10 hrs

	○ Layout Management ○ The ViewGroup ○ The AbsoluteLayout ○ The LinearLayout ○ The RelativeLayout	

Textbooks:

1. Fundamentals of Mobile Computing
   Publisher: PHI
   By Prasant Kumar Pattnaik and Rajib Mall

2. Creating Android Applications Develop and Design
   Publisher: Pearson
   By Chris Haseman

Reference Book:

Beginning Android 4 Application Development
Publisher: Wiley
By Wei-Meng Lee

Subject Elective Course
SEC-302(2) Website Frameworks (Joomla, Ruby on Rails)

Course Introduction:
This course enables the students to build web sites and powerful online applications using Joomla. It provides students with the opportunity to set up a Joomla community web site in the real world. Ruby on Rails (RoR) course provides the knowledge necessary to design and develop dynamic web pages using Ruby. This course introduces briefly the most important features of Ruby and some of the essentials of Rails.

Objectives:
The student would be able

1) To create different types of online applications.
2) To create online magazines, newspapers, and publications.
3) To configure Joomla templates and populate the site with content and extensions.
4) To learn the basics of the Ruby language.
5) To understand fundamentals of Rails.

No. of credits: 3
Theory sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Introductiopn to Joomla, sections, articles, categories in Joomla**	**10 Hours**
	Understanding Joomla!	4 hrs
	• What is Joomla? • Comparing static websites and content management system • Choosing the right solution	
	Planning your website	
	• Determining the goal of an organization or project • How will the website help to achieve the goal? • Who will visit the website? • What do the website visitors want? Identifying and organizing the website's information • Identifying important functionality	
	A tour of the Joomla! Administrator interface	

	• Logging in
	• Joomla!'s Menus
	  o Site menu
	  o Menus
	  o Content
	  o Components
	  o Extensions
	  o Tools
	  o Help	

	• Common Interface buttons
	  o New
	  o Edit
	• Publish and Unpublish	

	Defining section and category structure	
	• Making sections and categories useful • Assigning sections and categories to your site map	6 hrs
	Creating, editing and deleting sections	
	• Creating sections • Editing sections • Deleting sections	
	Creating, editing and deleting categories	
	• Creating categories • Editing categories • Category parameters • Deleting categories	
	Creating, editing and deleting articles	
	• Creating articles • Editing articles • Deleting and restoring articles o Filtering articles	
	Adding articles to the home page	
	• Toggling the front page state of an article • Working the front page manager • Into text vs. full article text	
	Using advanced article options	
	• Adjusting TinyMCE settings • Paste from world • Creating links to other pages on the website • Creating a link to another website • Setting a start and finish publishing date • Setting a different author name • Accessing the article manager options	
	Including media in articles	
	• Joomla!'s Media manager • Inserting images into articles • Including video from youtube in your article	
	Joomla Menus, Templates and Modules	
2	**Linking articles to the menu**	**10 Hours**
	• Linking an individual article to the menu • Creating a category blog	
	• Creating article lists from a category	
	Using advanced menu options: articles	4 hrs
	• Section layout and category list layout o Parameters (Basic)	

	○ Parameters (Advanced) • Sections and category blog ○ Parameters (Basic) ○ Parameters (Advanced) • Create article • Archived articles	
	Using advanced menu options: creating new menus	
	• Creating new menu • Moving menu items • Displaying the menu module	
	Using advanced menu options: wrappers and external links	
	• Wrappers • External links	
	Choosing and installing templates	
	• Joomla!'s default template ○ Template parameters ○ Assigning a template • Which templates are better: free or commercial? • Downloading and installing templates from other sites	6 hrs
	Configuring Latest News and Newsflash	
	• Creating and configuring the latest news module • Creating and configuring the newsflash module	
	Configuring Random Images	
	• Image consideration • Configuring your photos • Creating and editing the random image module • Reordering Modules	
	Configuring search	
	• Creating and configuring the search module • Specific Search components settings	
	Configuring Contacts	
	• Creating the contact category • Creating the contact • Menus: Displaying a single contact • Menus: Displaying contacts within a category	
	Configuring Web Links	
	• Creating categories • Creating links • Menus: Displaying links	
	Extending Joomla! and Introduction to Ruby	
3	**Adding extensions to Joomla!**	**10 hours**
	• Introducing the Joomla! Extension directory • Choosing a good extension • Paid vs. Free: which is better?	3 hrs
	Changing the editor in Joomla! To JCE	
	• Downloading JCE	

	• Installing JCE
	• Assigning JCE as the default editor globally
	• Assigning JCE as the Editor for specific users
	• Using JCE
	  o Creating and editing links to site articles
	  o Uploading documents and creating links to them
	• JCE configuration	

	Installing and configuring simple image gallery	
	• Downloading simple image gallery • Installing simple image gallery • Configuring simple image gallery • uploading images • displaying simple image gallery in an article	
	Creating and editing users	
	• Creating a user • Understanding groups • Editing and deleting users • The importance of good passwords	
	Introduction to Ruby	
	• Ruby Basics • Hello, Matz • Interactive Ruby	7 hrs
	A quick tour of Ruby	
	• Ruby is object-oriented • Ruby's reserved words • Comments and variables • Strings • Numbers and operators • Conditional statements • Arrays and hashes • Methods and blocks • symbols	
	Conditional Love	
	• The if statement	
	• The case statement • The while loop • The loop method • The for loop • Execution before or after a program	
	Strings, math, arrays and guide to ruby on rails	
4	**Strings**	**10 hours**
	• Creating, Concatenating, Accessing, comparing, manipulating strings • Case conversion and managing white spaces • Incrementing and converting strings • Regular expressions	

	Math	3 hrs
	• Converting numbers • Basic math operations	
	Arrays	7 hrs
	• Creating arrays • Accessing elements • Concatenation • Set operations • Unique elements • Comparing arrays • Changing elements • Deleting elements • Arrays and blocks • Sorting things and about face	
	A short guide to ruby on rails	
	• Where did rails come from? • Why rails? • Learning rails • A brief tutorial	

Note: It is desirable to teach Joomla and Ruby on Rails preferably in laboratory or through extensive demonstrations in classrooms.

Textbooks:

1. Joomla! 24-Hour Trainer
   Publisher : WILEY- INDIA
   By Jen Lramer

2. Learning Ruby
   Publisher : O'REILLY
   By Michael Fitzgerald

Subject Elective Course
SEC-302(3) Web-Site Development-II (PHP, AJAX)

Course Introduction:
This course would make students capable to develop web site using open source technology like PHP and AJAX. Through this course, students will learn the basic programming concepts of PHP technology like Looping, Arrays, Functions, and Forms etc. Through AJAX, students can learn the concept of validations, web services and how to implement AJAX in PHP technology.

Objectives:
The student would be able
1) To develop web site using open source technology like PHP and AJAX.
2) To do coding in quiet easy and understandable format.
3) To know flexible but powerful language PHP & AJAX, most suitable for developing dynamic web pages.

No. of Credits: 3
Theory Sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Introduction to XAMPP**	**10 hours**
	• Introduction XAMPP • Installation of XAMPP • Characteristics of XAMPP • PHP MyAdmin	4hrs
	• **Starting with PHP Programming** o Starting with PHP Programming o Basic Syntax and Commands o PHP Operators o Conditional Statements	4 hrs
	• **PHP Programming** o Looping Statements o Arrays	2 hrs
2	**PHP Programming and MySQL Database Connection**	**10 hours**
	• **PHP Programming** o Forms o Functions o Global Variables	3 hrs
	• **PHP and MySQL Programming** o Function Accessing MySQL from PHP o Creating a Table in PHP	7 hrs

	○ Getting Information from the User ○ Inserting Records in the Table ○ Searching Records from the Table ○ Deleting Records from the Table	
3	**AJAX**	**10 hours**
	• **Ajax Basics** ○ Limitations fo Traditional Web Applications ○ Items for Implementing AJAX	2 hrs
	• **PHP and AJAX** ○ Understanding DOM ○ Steps to place Asynchronous Requests to the Server ○ Accessing Form Elements ○ XMLHttp Post Requests ○ Separating JavaScript Code in Another File ○ Accessing JavaScript Function Using Hyperlink ○ Specifying functions in .js file	8 hrs
4	**AJAX and Validation**	**10 hours**
	• **AJAX and MySQL** ○ Sending Data From Combobox to Server Asynchronously ○ Sending Multiple Items Selected from List box to the Server Asynchronously ○ Sending items selected from Radio and Check Box to server Asynchronously ○ AJAX, PHP and MySQL all combined for accessing Database	4 hrs
	• **Validation** ○ Checking Blank field ○ Checking field has less data than required ○ Validating emailed ○ Validating Form and string the record in the table	3 hrs
	• **Introduction to Web Services** ○ What are Web Services ○ Terms Related to Web Service ○ Methods of Producing and Consuming Web Services	3 hrs

Textbook:

Developing Web Applications in PHP and AJAX
Publisher: McGraw Hill
By B M Harwani

Reference Book:

Teach yourself PHP, MySQL and Apache
Publisher: Pearson
By Julie C. Meloni

Subject Elective Course
SEC-302(4) Information Security

Course Introduction:
This course familiarizes the students with the security issues and technologies involved in modern information systems, including computer systems and networks. Students will gain an understanding of the various ways in which information systems can be attacked and tradeoffs in protecting networks.

Objectives:
The student would be able

1) To identify the information assets.
2) To identify threats to information assets.
3) To define an information security strategy and architecture.
4) To plan for and respond to intruders in an information system.

No. of Credits: 3
Theory Sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
1	**Introduction ,Principles of Success, Law and Ethics**	**10 hours**
	• **Information Security** o Introduction o Opportunities o Contextualizing Information Security	2 hrs
	• **Information Security Principles of Success**	3 hrs
	• **The Information Security Common Body of Knowledge**	2 hrs
	• **Law, Investigations and Ethics** o Introduction o Types of Computer Crime o How Cyber Criminals Commit Crimes o The Computer and the Law o Intellectual Property Law o Privacy and the Law o Computer Forensics o The Information Security Professional's Code of Ethics o Other Ethics Standards	3 hrs
2	**Physical Security Control and Operations Security**	**10 hours**
	• **Physical Security Control** o Introduction o Understanding the Physical Security Domain	5 hrs

	○ Physical Security Threats ○ Providing Physical Security	
	• **Operations Security** ○ Introduction ○ Operation Security Principles ○ Operations Security Process and Controls ○ Operations Security Controls in Action	5 hrs
3	**Access Control System and Methodology and Cryptography**	**10 hours**
	• **Access Control Systems Methodology** ○ Introduction ○ Terms and Concepts ○ Principles of Authentication ○ Biometrics ○ Single Sign-On ○ Remote User Access and Authentication	4 hrs
	• **Cryptography** ○ Introduction ○ Applying Cryptography to Information Systems ○ Basic Terms and Concepts ○ Strength of Cryptosystems ○ Putting the Pieces to Work ○ Examining Digital Cryptography	6 hrs
4	**Telecommunications , Network and Internet Security and Application Development Security**	**10 hours**
	• **Telecommunications , Network and Internet Security** ○ Introduction ○ Network and Telecommunications Security ○ Feet Up ○ Network Security in Context ○ The OSI Reference Model ○ Data Network Types ○ Protecting TCP/IP Networks ○ Basic Security Infrastructures ○ Firewalls ○ Intrusion Detection Systems ○ VPNs	6 hrs
	• **Application Development Security** ○ Introduction ○ The Practice of Software Engineering ○ SDLC ○ Distributed Systems ○ Malware ○ Antivirus Software ○ Improving Security Across the SDLC	4 hrs

Textbook:

Information Security Principles and Practices (First Edition 2008)
Publisher: Pearson
By Mark Merkow and Jim Breithaupt

Reference Books:

1. Information Security Theory and Practice
   Publisher: PHI
   By Dhiren R. Patel

2. Computer Security Fundamentals
   Publisher: Pearson
   By Chuck Eastiom