Course Title: Net Centric Computing
Course no: Csc-360 **Full Marks**: 60+20+20
Credit hours: 3 **Pass Marks**: 24+8+8
Nature of course: Theory (3 Hrs.) + Lab (3 Hrs.)

Course Synopsis: This course explores the concepts of developing web technology.

Goal: To provide the knowledge of Net Centric Computing using Active Server Pages programming and .Net Framework.

Course Contents:

Unit 1. Introduction **3 Hrs.**

1.1 Web architecture and the role of HTTP protocol
1.2 Static and dynamic page
1.3 Introduction to ASP
  a. Benefit and Application of ASP
  b. IIS (Features, Properties, Application)
  c. Virtual directory properties
  d. ASP requirements (Need for ASP)
  e. Scripting capabilities

Unit 2. Intrinsic ASP Objects **6 Hrs.**

2.1 Response object
  a. Sending text with response and embedded quotes
  b. Using variables
2.2 Request object
2.3 Application and Server object
2.4 Thread, Application variables and their uses, Limitation of application variables
2.5 Session object
2.6 The Form collection, QueryString collection
2.7 Cookies
  a. The response cookies collection
  b. The request cookies collection
2.8 Session and its uses

Unit 3. Writing Server-Side Code **8 Hrs.**

3.1 Coding using VBScript or JScript
3.2 The scripting dictionary object
3.3 File access ASP
3.4 Debugging ASP and error-handling.

Unit 4. Using Components **4 Hrs.**

4.1 Browser capabilities
4.2 Comparison between different browsers
  a. Components, properties and methods
  b. Working and capabilities
4.3 E-mail handling using ASP

Unit 5. Accessing Databases with ASP and ADO **7 Hrs.**

5.1 Introduction to relational databases and SQL
5.2 Active Database Object (ADO)
  a. Introduction to ADO
  b. Accessing data with ADO (Insert, update, delete, and filter)
  c. Working with Recordsets
  e. Using Stored Procedures, Parameterized Queries
5.3 Controlling transactions in ASP

Unit 6. ASP Applications **3 Hrs.**

6.1 ASP applications
6.2 Planning for application development
6.3 Controlling access and monitoring

Unit 7. Advanced ASP **14 Hrs.**

7.1 Introduction to .Net framework, Compilation and execution of .Net applications
7.2 .Net language (C#)
  - Constructor, Properties, Arrays and String, Indexers, Inheritance, use of "base" keyword, Method hiding and overriding, applying polymorphism in code extensibility, abstract class sealed class, interface, Delegate and Events, Partial class, Collections, Generics
7.3 Basic of ASP.net page and comparing with classical ASP
7.4 Web Forms
  a. Structure of Asp.net Pages
  b. Inline & Code Behind approach of Asp.Net pages
  c. Some properties of "Page" class like IsPostBack, ViewState, Session , Request, Response etc.
  d. Role of ViewState in Asp.net pages
7.5 Server Controls
  a. HTML server controls
  b. Web controls
     Properties & use of web controls like (Label, Button, LinkButton, ImageButton, TextBox, CheckBox, RadioButton, Image, HyperLink, Panel, HiddenField, FileUpload, Table)
  c. List controls(ListBox, DropDownList, CheckBoxList)

d. Input Validation controls(RequiredFieldValidator, RangeValidator, CustomValidator)

7.6 Data Access

a. ADO.net fundamentals
b. Using Connection, Command, Datasets, DataReader classes

Text / Reference Book:

Active Server Pages 3, a Russell Jones, BPB Publications, New Delhi, 2003.
Programming Active Server Pages, Scott Hillier and Daniel Mezick, MS Press, 1997
Programming Microsoft .NET, Jeff Prosise, MS Press, 2002

Laboratory works:

Students will have to complete a small project covering all the features of above course using ASP and .Net Framework.

Homework Assignments:

Homework assignments can be given according to the course covered throughout the semester.

Computer Usage:

Windows PC or workstation installed with Visual Studio .Net and IIS server and Relational DBMS in the Database server.

Model Question Paper of Net Centric Computing (Csc-360)
B. Sc. in Computer Science and Information Technology, IOST, TU.

Full Marks: 60 *Pass Marks: 24* *Time: 3 hours*

Attempt all questions.

1. Answer the following questions in short. [2 X 5 = 10]
   a. HTTP protocol
   b. ASP and its advantages
   c. Virtual directory and ADO
   d. Partial class and its uses
   e. Server Control and its advantages
2. a) What is IIS? Why does ASP need IIS? Write features of IIS? [1+1+3]
   b) What do you mean by request object and response object? Illustrate with suitable example. [5]
3. a) Which are the languages used for server side scripting in ASP? Give an example using any one of the languages to input the information about a student in one page page and display it on another page. [1+4]
   b) Do the capabilities of browsers affect the Net Centric computation? If so how? Differentiate between browsers on the basis of capabilities, component properties and methods. [1+1+3]

   OR

   What are the general properties web controls and their uses? Explain with example. [5]
4. a) What is stored procedure? Illustrate the ADO technology to connect the database with suitable example. [1+4]
   b) List different applications of ASP? What are the steps for planning to design an ASP application? [1+4]
5. a) Why do we need generic rather than collection? Define properties in C# with example. [1+4]
   b) Differentiate between ASP.NET and classical ASP. Explain the structure of general ASP.NET page. [1+4]
6. a) What are the input validation controls? How do they help in .NET framework? Explain with a suitable example. [1+1+3]
   b) Differentiate between session and cookies. What is the use of session and cookies in Net Centric Computing? Explain with a suitable example. [2+3]