

“Education for knowledge, science and culture”
- Shikshanmaharshi Dr. Bapuji Salunkhe
Shri Swami Vivekanand Shikshan Sanstha’s
VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR
B. Sc. Part – III (Computer science Entire) CBCS Syllabus with effect from June, 2020
Semester - VI Computer Science DSE-1306F
Computer Networks and C# and introduction to ASP.Net
Theory: 72 Hours (90 Lectures) credits -6

Course Outcomes:

After learning the course the students should be able to:

1. Understand Flow control protocols-Sliding window protocol, One bit sliding window protocol, protocol using go back N, Protocol using selective repeat.
2. Explain design issues, concept of routing, routing algorithms and Congestion Control algorithms.
3. Explain transport layer service primitives, TCP, UDP protocol.
4. Understand session layer services, Remote Procedure Call(RPC)
5. Explain Presentation layer services, Concept of cryptography and types of cryptography.
6. Explain Functions of application layer, application layer protocols (DNS, HTTP, SMTP, Telnet and FTP) and network security.
7. To get knowledge different types of errors, structured & unstructured exception, to understand how to trace errors.
8. To understand database connection, connected & disconnected architecture, data binding to controls, data validations.
9. Understand & Generate Reports from database using crystal report
10. Get Basic introduction to ASP.net, understand different ASP.net controls, understand concepts of Master Page

Section-I

Unit 1: Data Link Layer Protocols, Network Layer [10]

- Protocols- Sliding window protocol: one bit sliding window protocol, protocol using Go Back N, protocol using selective repeat.
- Network Layer: Design issues, Concept of Routing.

Unit 2: Network Layer and Transport Layer [12]

- Routing Algorithms (Shortest Path, Flooding, Distance Vector Routing).
- Congestion Control Algorithms: Leaky Bucket, Token Bucket
- Transport Layer: services: connection oriented and connection less services.
- Transport Layer Primitives: listen, connect, send, receive, disconnect. Protocols: TCP, UDP

Unit 3: Session and Presentation layer [11]

- Session layer: Services: dialog management, synchronization, activity Management, exception handling Remote procedure calls (RPC).
- Presentation Layer: Services- Translation, compression, encryption
- Cryptography- Concept, Symmetric key and Asymmetric key Cryptography.

Unit 4: Application layer and network security [12]

- Application layer: Function.
- Protocols- Domain name system (DNS), Hypertext transfer Protocol (HTTP), Simple Mail Transfer Protocol (SMTP), Telnet, File Transfer Protocol (FTP).

- Network security: Security concept and services, Message Authentication, Digital Signatures and Entity authentication.

Section II

Unit 1: Exception Handling [10]

- Errors-types of errors
- Structured Exception – Try__Catch__End Try, finally, throw,
- Unstructured Exception – On error GoTo, resume ,resume next.
- Tracing Errors – Break Point, watch window, quick watch window, autos

Unit 2: Database Connectivity in C# [12]

- Database: Connections, command, Data adapters, and datasets
- Connection to database using MS-Access, SQL Server
- Data binding with controls like Text Boxes, List Boxes, Data grid etc. Data form wizard,
- Data validation

Unit 3: Using Crystal Report [12]

- Connection to Database, Table, Queries, Create and Modify Report,
- Formatting Fields and inserting Header, Footer, Group
- Details Working with formula fields, Parameter fields
- Working with Multiple Tables

Unit 4: Introduction to ASP.Net with c# [11]

- Introduction to ASP. NET
- Working with web forms: Buttons, Text Boxes, Labels, Check Boxes, Radio Buttons, Tables, Panels, Images, Image Buttons, List Boxes, Drop-Down Lists, Hyperlinks and Link Buttons

Program list

1. Create a login form with UserId, password, current date. Check the userId & password from table & give proper message.
2. Create a window application for saving account of a customer with a/c no, name, opdate, opbal, mode of payment. If mode of payment is check then get cheque number. Add data to saving transaction table with fields a/c no, debit amount, credit amount, balance, tdate, mode of payments, satus. Generate add, edit, delete operations
3. Create a window application that create debit & credit activities to the saving transaction table. Balance should be made. (e.g. check a/c no with the master file & display name). check balance before debit the amount.
4. Create crystal report for Saving Master list.
5. Create customer bill with master detail transactions
6. Generate customer bill with crystal report.

References:

1. Behrouz A. Forouzan- Data Communications And Networking - (4th edition) McGraw- Hill.2007
2. Tanenbaum A.S. “computer Network”, 3rd Edition, Prentice Hall of India.2004.
3. Stalling W, “computer communication Network”.(4th edition). Prentice hall of India 1993
4. C# 4.0 The Complete Reference Schildt H.Edition – 2010 Publication – Tata McGrawHill
5. .Net 4.5 programming Black Book Kogent Edition – 2013 Publication – DreamTech press
6. ASP.Net 4.0 Black Book Edition – 2010 Publication – DreamTech Press