

VEER NARMAD SOUTH GUJARAT UNIVERSITY

Syllabus for S.Y. B Sc. (Semester-4)

COMPUTER SCIENCE

Paper : III _____ : DATA STRUCTURE

With Effect From June - 2012.

1. Primitive Data Structures and Operations on them

2. Non-Primitive Data Structures

2.1 Arrays

2.1.1 Single and Multiple array

2.1.2 Storage Representation. And Operations

2.2 Stack

2.2.1 Operation on Stack

2.2.2 Application in Recursion, Polish notation etc.

2.2.3 Quick Sort

2.3 Queues

2.3.1 Types of Queue

2.3.2 Operation on Queue & Applications.

2.4 Linked Lists

2.4.1 Types of Linked List

2.4.2 Operations on Linked Lists & Applications.

2.5 Tree

2.5.1 Concept and definition of tree & operations

2.5.2 Binary tree, 2-3 tree, Height and weight balanced tree.

2.5.3 Linked and threaded representation of tree & Applications.

2.6 Graphs

2.6.1 Representation of Graph

2.6.2 Breath and Death first search

2.6.3 Application of graph

Recommended Reference Books :-

1. An Introduction to Data Structure with Applications : Trembley & Sorenson – McGraw Hill
2. Data Structures Using C & C++ - Langsam, Augenstein & Tanenbaum - PHI
3. Wirth, Ni Claus, Algorith+Data Structure Programs, Prentice Hall.
4. Horwith E and Sahni S, Fundamental of Data Structure, Computer Science Press.
5. Aho A.V., Hopcrott and Ullman, Data Structure and Algorithms , Addition – Wesslely.

NOTE : Practical shall be based on the above syllabus except 2.5 and 2.6

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PAPER IV : SUBJECT: ASP.NET

- 1. INTRODUCTION TO ASP.NET**
 - 1.1. Overview of HTML**
 - 1.2. What is ASP.NET**
 - 1.3. Compile Code**
 - 1.3.1. Code Behind and Inline Code**
 - 1.4. The Common Language Runtime**
 - 1.5. Object Oriented Concepts**
 - 1.6. Event Driven Programming**

- 2. SERVER CONTROL**
 - 2.1. Post Back**
 - 2.2. Introduction to HTML Server Control**
 - 2.3. Introduction to Web Server Control**
 - 2.4. Data Binding**
 - 2.4.1. Grid view**
 - 2.4.2. List box**
 - 2.4.3. Data list**
 - 2.4.4. Data Binding events**
 - 2.4.5. Repeater**
 - 2.4.6. Form View**
 - 2.5. Validation Control**
 - 2.6. Master Page**
 - 2.7. Themes & Introduction to CSS**

- 3. CLIENT SERVER COMMUNICATION**
 - 3.1. Communication with Web browser**
 - 3.2. Response Object**
 - 3.3. Cookies**
 - 3.4. Query String**
 - 3.5. Session Management & Variable Scope**

- 4. ASP.NET DATABASE PROGRAMMING**
 - 4.1. Introduction about ADO.NET**
 - 4.2. Introduction about Provider, Adapter, Reader, Command Objects**
 - 4.3. Database Access using ADO.NET**

 - 4.4. Statement**

- 5. ADVANCE ASP.NET**
 - 5.1. Web.config**
 - 5.2. Introduction to User Control**
 - 5.3. Introduction to SOAP & Web Services**
 - 5.4. Publishing Website**

Reference Books:

1. The Complete Reference ASP.NET - Matthew MacDonald - TMH
2. Special Edition using Asp.Net – Richard Leineker - Person Education
3. ASP.NET – Black Book - Dream Tech
- 4 ASP.NET Bible By Mridula Parihar, et al. - IDG Books India.
5. Building XML Web Services for ASP.NET By Bill Evjen - Wiley n
Dreamtech

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Paper _____ V _____ : Relational Database Management System-II

With Effect From July - 2012.

1. Transactions

- 1.1 Transaction Concept, State.
- 1.2 Implementation of ACID rules.
- 1.3 Concurrent Executions.
- 1.4 Serializability, Recoverability.

2. Concurrency Control.

- 2.1 Lock Based Protocols.
- 2.2 Timestamp-based Protocols.
- 2.3 Validation based protocols.
- 2.4 Deadlock Handling.

3. PL/SQL:

- 3.1.1 Using Variables, Constants & Data types.
- 3.1.2 User-Defined RECORD and TABLE data types.
- 3.1.3 Assigning Database Values to variables
SELECT.....INTO.....CURSORS
- 3.1.4 Using Flow Control Statements.
The IF...THEN Statement, The LOOP statement
WHILE loops, the GOTO statement.
- 3.1.5 Error handling Built in PL/SQL Exceptions, User-defined
Exceptions, un handled Exceptions.
- 3.1.6 PL/SQL Programs
Anonymous PL/SQL Blocks, procedures, Functions, packages,
Triggers, transaction management, Begin, Commit, rollback,
savepoint, isolation level.
- 1.1.7 Packages, synonyms, transaction management- TCL,
statements, begin transaction, Commit, rollback, savepoint

Recommended Reference Books :

1. Henry Kroth & Silbershats, Database System Concept.
2. C.J. Date, Introduction to Database Design, Addition Wesley, Nasora.
3. Martin Gruber, Understanding SQL, BPB Pub., New Delhi.
4. Ivan Baross, SQL, PL/SQL The Programming Language of ORACLE, BPB Pub., New Delhi.
5. James Martin, Computer Database Organization, PHI, New Delhi.
6. J Ullman, Principles of Database Systems, Galgotia Pub., New Delhi.
7. ORACLE Manuals.
8. SQL Manuals
9. George Koch and Kevin Loney<ORACLE 8 The Complete Reference, ORACLE Press, TMH, Delhi.
10. Oracle PL/SQL programming - Oracle press - Tata Megrawhill.
11. Microsoft Sql server - pretince hall of India.

Teaching Scheme for 4th Semester B Sc (Computer Science)

Paper No and title	Teaching Schedule	
	Theory Hrs	Practical Hrs
III : Data Structure	2	2
IV : ASP.NET	2	2
V : Relational Database Management System -2	2	2

The Enclosed Syllabi are to be introduced as IDS : CAN course , with existing courses as optional papers.