

**VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT**  
**D. C. A. (2<sup>nd</sup> SEMESTER) SYLLABUS**

Effective From : August – 2006 (L : 4; P : 0)  
PAPER NO. : 201  
Paper Title : **WEB BASED APPLICATION DEVELOPMENT**  
Prerequisite : 'C' Language & HTML  
Aim & Objective : To teach the concepts of Web Based Application Development

**1. Introduction to Web Programming**

**2. Installation of PHP/MySql and web server**

**3. Introduction to PHP programming**

**4. Writing PHP Programs**

**5. Loops, Control Structure and Arrays**

**6. PHP functions**

- 6.1. String functions
- 6.2. Array functions
- 6.3. Mathematical function
- 6.4. Graphics functions
- 6.5. File system function
- 6.6. Date and time function
- 6.7. Miscellaneous Functions

**7. Error handling**

**8. Object Oriented Features of PHP**

**9. File and Directory handling**

**10. MySql database**

- 10.1. Configuration of MySql server
- 10.2. Starting MySql server
- 10.3. MySql tables
- 10.4. Displaying MySql data
- 10.5. Adding and removing user access

**11. Advance PHP programming**

- 11.1. mail
- 11.2. PHP - generated PDF files

## **12. Web Servers**

12.1. IIS web Server

12.2. Apache web server

### **Reference Books:**

1. Beginning PHP 4 Databases – Christopher Scollo, Harish Rawat, Dipak Thomas, Sanjay Abraham, Andrew Hill & Jim Hubbard; Wrox Press
2. PHP MySQL Website Programming – Chris Bea, Mike Duzzard, Jessy White, Cinis & Dilip Thomas; Wrox Press
3. PHP Black Book – Peter Moulding, Coriolis Group
4. MySQL – PHP Database Applications – Jay Greenspan & Brad Bulger; John Wiley & Sons
5. PHP MySQL Website Programming: Problem-Design-Solutions – Chris Bea, Mike Duzzard, Jessy White, Cinis & Dilip Thomas; Apress
6. Essential PHP for Web Professionals – Christopher Cosentino; Prentice Hall
7. Sam's Teach Yourself PHP 4 in 24 Hours – Matt Zandstra; SAMS
8. PHP 5.1 For Beginners – Ivan Bayross, O'Reilly, Shroff Publishers & Distributors Pvt. Ltd.

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Effective From : August – 2006 (L : 4; P : 0)  
PAPER NO. : 202  
Paper Title : **GRAPHICAL USER INTERFACE TOOL**  
Prerequisite : Nil  
Aim & Objective : To teach the concept of GUI application programming

**1. Programming with Visual Basic**

**2. Visual Basic Components**

- 2.1. Microsoft Common Controls
- 2.2. Working with control Arrays
- 2.3. Creating ActiveX Controls
- 2.4. Classes : Reusable components

**3. Visual Basic Interfaces**

- 3.1. MDI Applications

**4. Visual Basic & Databases**

- 4.1. The Data Control & Data Bound Controls
- 4.2. Using DAO
- 4.3. Using RDO
- 4.4. Using ADO
- 4.5. Creating Reports

**5. Visual Basic & the Internet**

- 5.1. Using VBScript
- 5.2. Active Server Pages
- 5.3. ActiveX Documents

**Reference Books:**

- 1. Visual Basic 6 - Paul Sheriff - PHI
- 2. Using Visual Basic 6 - Brian Scler & Jeff Spotts - PHI
- 3. VB 6 Client/Server & Database Programming - Michael Mac Donald - Comdex
- 4. Beginning Visual Basic 6 - Peter Wrieght
- 5. Teach Yourself VB6 - Scott Wamn
- 6. Teach Yourself VB6 - Greg Perry

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Effective From : August – 2006 (L : 4; P : 0)  
PAPER NO. : 203  
Paper Title : **RELATIONAL DATA BASE MANAGEMENT SYSTEM**  
Prerequisite : DBMS  
Aim & Objective : To teach the concepts of RDBMS

**1. Relational Database Design**

- 1.1. Structure of Relational Database
- 1.2. Database Manager
- 1.3. Database Administrator
- 1.4. Pitfalls in Relational Database Design
- 1.5. Functional Dependencies
- 1.6. First, Second & Third Normal Form, BCNF

**2. R.D.B.M.S. package & its tools**

- 2.1. SQL Commands: SELECT, CREATE TABLE, INSERT, UPDATE, DELETE, ALTER TABLE, DROP TABLE, CREATE SEQUENCE, ALTER SEQUENCE, DROP SEQUENCE, CREATE INDEX, ALTER INDEX, DROP INDEX, ROLLBACK, COMMIT, SAVEPOINT, TRUNCATE, CREATE VIEW, DROP VIEW
- 2.2. Built-in Functions & Group Functions
- 2.3. PL/SQL: Data types in PL/SQL, user-defined RECORD data type, Control statements (IF, LOOP, WHILE, FOR), Cursor, Passing Parameter to Cursor, Implicit Cursor, Exception Handling, Stored & Local Procedures & Functions, Packages, Triggers

**Reference Books:**

1. An Introduction to Database Systems - C.J.Date - Narosa
2. Database System Concepts - Henry F. Korth & Abraham Silberschatz - McGraw-Hill
3. Principles of Database systems - J. Ullman - Galgotia Pub.
4. Introduction to Data Base System - Bipin C. Desai - Galgotia Pub.
5. Fundamentals of Database Systems – Elmasri Navathe, Addison Wesley
6. Introduction to Database Management - Navin Prakash – TMH
7. Oracle PL/SQL Programming – Feuerstein & Pribyl, O’Reilly, Shroff Publishers & Distributors Pvt. Ltd.
8. Manual of RDBMS

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Effective From : August – 2006 (L : 4; P : 0)  
PAPER NO. : 204  
Paper Title : **SOFTWARE ENGINEERING**  
Prerequisite : Programming Methodology  
Aim & Objective : To familiarize students with methods of Software Development & produce quality software product.

- 1. Introduction to software engineering.**
  - 1.1. Software, software characteristics, software engineering
  - 1.2. Software development phases -Requirement analysis, design, coding, testing
  - 1.3. Software maintenance
  - 1.4. Effort distribution
  - 1.5. Software development process models: Waterfall model, Prototyping, Evolutionary Model
- 2. Requirement Analysis**
  - 2.1. Study of requirements
  - 2.2. Structured analysis
  - 2.3. Data flow diagrams and Data dictionary
- 3. Requirement specifications**
  - 3.1. Characteristics and Components of SRS
  - 3.2. Requirement specification document
- 4. System Design**
  - 4.1. Design methodology: Structured design, Object Oriented Design
  - 4.2. Design documentation
- 5. Testing & Implementation**
  - 5.1. Testing fundamentals
  - 5.2. Functional and Structural testing
  - 5.3. Testing process
  - 5.4. Implementation process
- 6. Software Reliability & Quality**
7. CASE tools
  - 7.1. Introduction
  - 7.2. Characteristics

Case studies may be carried out at appropriate stages of the course.

**Reference Books:**

1. An integrated approach to software engineering - Pankaj Jalote - Narosa Publication
2. Software Engineering A practitioner's approach - Roger S Pressman - McGraw Hill Inter.
3. Fundamentals Of Software Engineering - Rajib Mall - PHI
4. Elements of system analysis - Marvin Gore - Galgotia Publ

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Effective From : August – 2006 (L : 4; P : 0)  
PAPER NO. : 205  
Paper Title : **COMPUTER NETWORKS**  
Prerequisite : Single User Operating System & Computer Organization  
Aim & Objective : To teach network and its administration.

**1. Networking Fundamentals**

An Introduction to Networks, Network Topologies and Types  
What is Networking?  
Exchange, Sharing, preserving and protecting Information  
Sharing Hardware and Software Resources  
Need, Uses and Advantages of Network  
Networks in the workplace (Tools, Tasks and Personnel)  
Clients, Servers and Peers based and Hybrid Networks  
Server types  
Network Topologies (Bus, Star, Ring, Star Bus, Star Ring and Physical Mesh)  
Network ( Transmission) Media (Wires, Cables, Fibre Optics, Wave)  
Defining Network Protocols (H/W Protocols, S/W Protocols, H/W – S/W Interface)  
The OSI Model  
Major Protocol Suites  
Review of Protocols, Models and Implementations  
NetWare IPX/SPX Protocols(Lower, Middle and Upper Layer Protocols)  
Internet Protocols(Middle and Upper Layer Protocols)  
Basics of Miscellaneous Protocols(SLIP, PPP, FDDI, X.25, Frame Relay, ISDN, B-ISDN, SONET, SDH, ATM, SMRS)

**2. Network H/W And S/W**

Cards and Cables, Repeaters, Hubs, Routers, and Bridges  
Network Cards  
Repeaters – its uses and selection criteria  
Hubs (Chassis Hubs and Stackable Hubs)  
Splitting Up Networks  
Bridges (The Spanning Tree Protocol, Traffic Segmentation and Monitoring with examples)  
Switches (Full Duplex Operation, Various Switching Modes, Avoiding Switch overload, VLAN technology, Applicability)  
Routers (Protocols, A Routed Network Example, Protocol Specificity, Bridging and Routing compared, Protocol Address Conventions)  
Switch Routers  
Network Operating Systems  
Peer Network Operating Systems ( Windows 95-98-NT workstation)  
Client-Server Operating System( Common Features, Windows NT-2000, Novell Netware, Various Flavours of Unix)

Client Software (DOS Clients, Windows Clients, Macintosh Clients)  
Novell Netware fundamentals  
File system (volumes), Directories, files & flags(i.e. attributes) of the File.  
Administrative command: Creating users & groups, assigning trustee directories & attributes,  
Login script, Security

### **3. Network Management And Security**

Understanding IEEE Standards  
Understanding Wireless Networks

#### **Reference Books:**

1. Networking Complete- 1<sup>st</sup> Edition 2002, BPB Publication (Text Book)
2. Mastering Local Area Networks By Christa Anderson & Mark Minasi – BPB Publication
3. Mastering Novell Netware-Currid C.C, C.A Gillett-BPB
4. MCSE: Networking Essentials Study Guide- Tata McGraw Hill Publication
5. Introduction to Local Area Networks
6. Computer Networks By- Tenen Baum- PHI Publication

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Effective From : August – 2006 (L : 0; P : 10)  
PAPER NO. : 206  
Paper Title : **PRACTICAL (BASED ON PAPER NOS. 201 TO 205)**

Practical shall be conducted as mentioned in the Teaching Scheme for Papers 201, 202 and 203.

Separate journals for Paper No. 201, 202 & 203 should be prepared.

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