VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
D. C. A. (2nd 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 Sollo, 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
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 Wamm
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  
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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VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
D. C. A. (2nd SEMESTER) SYLLABUS

Effective From : August – 2006
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, Volutionary 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
3. Fundamentals Of Software Engineering - Rajib Mall - PHI
4. Elements of system analysis - Marvin Gore - Galgotia Publ

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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)
   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:**

2. Mastering Local Area Networks By Christa Anderson & Mark Minasi – BPB 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.