Effective From	: July – 2009
PAPER NO.	: 101
Paper Title	: COMPUTER ORGANIZATION & FUNDAMENTALS
	OF OPERATING SYSTEMS

- 1. Memory, Number System & Basic Computer Architecture
 - 1.1. RAM, ROM, PROM, EPROM etc, Virtual Memory, Cache Memory
 - 1.2. Secondary Storage Devices
 - 1.3. Binary, Hexadecimal, Octal Number System
 - 1.4. Integer & Floating Point representation
 - 1.5. Block Diagram of CPU and execution process
 - 1.6. Introduction to bus architecture
 - 1.7. H/W parts of PC
 - 1.8. I/O devices: keyboard, display, pointing devices, modem, scanners, OMR, OCR, CD- ROM, DVD, printers.
- 2. Operating System Concepts
 - 2.1. Evolution of Operating System & History
 - 2.2. Need of an Operating System
 - 2.3. Single-User & Multi-User Operating System
 - 2.4. Elements of an Operating System
- 3. Single User Operating System
 - 3.1. BIOS, POST Operation, Vector Table, Device Drivers, TSR Programs
 - 3.2. System Files
 - 3.3. Configuration Files
 - 3.4. Disk Architecture
 - 3.5. Commands
 - 3.6. Introduction to Windows
- 4. Multi-user Operating System
 - 4.1. Introduction to Windows-NT, UNIX
 - 4.2. LAN Fundamentals
 - 4.3. Basic Commands of NETWARE, Windows-NT, UNIX

Reference Books:

- 1. Fundamentals of Computer V. RajaRaman
- 2. How Computers work Ron White Techmedia
- 3. Introduction to computers :- Peter Norton TMH
- 4. Understanding Operating Systems 4th Ed- Flynn Thomson Course Technology
- 5. Inside IBM PC Peter Norton PHI
- 6. Unix Concepts And Application Das McGrawHill
- 7. MS DOS 6.22 Comdex Computer Publishing
- 8. Netware for dummies Dummy Series
- 9. Advanced MSDOS Ray Duncon McGraw Hill
- 10. Advanced Unix A Programmer's Guide Stephen Prata SAMS
- 11. User Manual of DOS, Windows-Windows-NT, Netware
- 12. Operating Systems Stallings PHI

Effective From: July – 2009PAPER NO.: 102Paper Title: DATA BASE MANAGEMENT SYSTEM (DBMS)

1. Basic Concepts of Database Management System.

- 1.1 Fundamental concepts of File and databases
- 1.2 Purpose of database system
- 1.3 Introduction to Data models
 - 1.3.1 Conceptual Data model E- R model
 - 1.3.2 Record base Data models Hierarchical. Relation , Network

2. Features of Database Systems

- 2.1 Data abstraction & Data independence
- 2.2 Type of Database Languages : DDL, DML, TCL
- 2.3 Database users : Database manager, administrator and Users
- 2.4 Overall system structure.

3. Relational Commercial Language - SQL

5. Commercial DBMS : Microsoft Access / DB2

- 5.1 Basic Architecture as DBMS
- 5.2 Working with databases and tables.
- 5.3 Managing constrains and relationships.
- 5.4 Using SQL queries.
- 5.5 Introduction to other object : Forms , Reports, Macros, etc.

6. Integrity Constrains

- 6.1 Domain Constrains , key Constrains, Referential Integrity Constrains
- 6.2 Functional Dependencies

7. Relational Database Design

- 7.1 Pitfalls in relational database design
- 7.2 Normalization using Functional Dependencies
- 7.3 Normalization using Multi valued Dependencies
- 7.4 Normalization using Join Dependencies
- 7.5 Domain Key normal form

8. [Self Study]

Security features provided by access / DB2

Reference Books

- 1. Database System Concepts SILBERSCHATZ , KORTH, SUDARSHAN- McGraw- Hill
- 2. An introduction to Database Systems- C.J.DATE Addison Wesley
- 3. Database System : A practical approach to design implementation and management THOMAS CONNOLLY , CAROLYN BEGG, Pearson Education
- 4. Access The Complete Reference Virginia Andersen McGraw Hill
- 5. Access Database Design & Programming Steven Roman O' Reilly
- 6. Microsoft Access : Bible Cary N. Prague

Effective From: July – 2009PAPER NO.: 103Paper Title: COMPUTER PROGRAMMING & PROGRAMMING
METHODOLOGY

- 1. Algorithm & Flowcharting
- 2. Constants & Variables
 - 2.1. Character Set
 - 2.2. Constants needs & definition
 - 2.3. Variables needs & definition
 - 2.4. Storage Class
 - 2.5. Scope of Variables
- 3. Expressions & Operations
 - 3.1. Operators: Assignment, Arithmetic, Increment, Decrement, Relational, Logical, Bitwise, Conditional
 - 3.2. Expression
 - 3.3. Evaluation & Assignment of Expression
- 4. Basic Input & Output Functions
- 5. Jumping, Branching & Looping Statements
- 6. Array
- 7. Built-in Functions: Arithmetic functions, Data Conversion functions, String functions, Character Classification functions
- 8. Structure Union & Enumerated data types
- 9. User Defined Functions
 - 9.1. Call by value
 - 9.2. Passing Structures & Array
 - 9.3. Recursion

10. Pointers

- 11. Program Bugs & Testing
 - 11.1. Program Bugs
 - 11.2. Preparing Test data
 - 11.3. Functional & Structural Testing

Reference Books:

- 1. C Language Programming Byron Gottfried TMH
- 2. Programming ANSI C E Balagurusamy -
- 3. Let US 'C' Yashwant Kanitkar
- 4. Pointers in C Yashwant Kanitkar
- 5. C Programming Language Karnighan & Ritchie TMH
- 6. 'C' Odyssey (6 Volumes) Vijay Mukhi PHI
- 7. The Complete Reference C Herbert Schildt, Tata Mc Graw Hill
- 8. Structured programming concepts La Budde (Mc.Graw HIII)
- 9. Programming in 'C' Stephan Kochan CBS
- 10. Mastering Turbo C Kelly & Bootle BPB
- 11. Mastering Turbo C Stan Kelly BPB

Effective From: July - 2009PAPER NO.: 104Paper Title: COMPUTER NETWORKS

- 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. Data Communication and Networking B. Forouzon MC Graw Hill
- 2. Networking Complete- 1st Edition 2002, BPB Publication (Text Book)
- 3. Computer Networks By- TenenBaum- PHI Publication
- 4. Mastering Local Area Networks By Christa Anderson & Mark Minasi BPB Publication
- 5. Mastering Novell Netware-Currid C.C, C.A Gillett-BPB
- 6. MCSE: Networking Essentials Study Guide- Tata McGraw Hill Publication
- 7. Introduction to Local Area Networks

Effective From: July – 2009PAPER NO.: 105Paper Title: OFFICE AUTOMATION & WEB DESIGNING TOOLS

1. WINWORD

- 1.1. Typing, Editing, Proofing & Reviewing
- 1.2. Formatting Text & Paragraphs
- 1.3. Automatic Formatting And Styles
- 1.4. Working With Tables
- 1.5. Graphics And Frames
- 1.6. Mail Merge
- 1.7. Automating Your Work & printing Documents

2. EXCEL

- 2.1. Working & Editing In Workbooks
- 2.2. Creating Formats & Links
- 2.3. Formatting A Worksheet & creating graphic objects
- 2.4. Creating Charts (Graphs), formatting and analyzing data
- 2.5. Organizing Data In A List (Data Management)
- 2.6. Sharing & Importing Data
- 2.7. Printing

3. PowerPoint

- 3.1. Getting started in PowerPoint
- 3.2. Creating a presentation
- 3.3. Creating & editing slides
- 3.4. Previewing a slide show
- 3.5. Adding picture & graph
- 3.6. Adding sound & video
- 3.7. Adding auto shape
- 3.8. Animating objects
- 4. Introduction to Internet
 - 4.1. Internet Protocols http, ftp, TCP/IP etc
 - 4.2. Internet Utilities e-mail, chat, searching etc.

- 5. Web Browsers
- 6. Web Server
- 7. HTML
 - 7.1. HTML Tags
- 8. JavaScript
 - 8.1. Fundamentals of JavaScript
 - 8.2. Syntax of JavaScript
 - 8.3. Use of JavaScript in HTML
 - 8.4. Validation using JavaScript
- 9. CSS
 - 9.1. What is CSS?
 - 9.2. Advantage & Disadvantage of CSS
 - 9.3. Creating CSS
 - 9.4. Use of CSS in HTML
 - 9.5. Formatting HTML page using CSS

Reference Books:

- 1. WORD 6 for Windows Quick & easy Reference Mansfield BPB
- 2. Mastering WORD 6 for Windows Mansfield -
- 3. Mastering EXCEL 4 for Windows Townsend -
- 4. Mastering EXCEL 4 for Windows Chester BPB
- 5. EXCEL 5 for Windows Quick & Easy Jones TECH
- 6. SAMS Teach Yourself JavaScript in 24 Hours Michael G Moncus Sams Publication
- 7. JavaScript for the World Wide Web Tom Negrino, Dori Smith Peachpit Press
- 8. Beginning JavaScript Wilton, Apress, Shroff Publishers & Distributors Pvt. Ltd.
- 9. Speed up Your Site: Website Optimization Andrew B King New Riders
- 10. Absolute Beginner's Guide to Microsoft 2003 Jim Boyce QUE Publishing
- 11. Microsoft Office XP Comprehensive Course Favro, Labyrinth, Shroff Publishers & Distributors Pvt. Ltd.

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT D. C. A. (1St SEMESTER) SYLLABUS

Effective From	: July – 2009
PAPER NO.	: 106
Paper Title	: PRACTICALS (

Practical shall be conducted as mentioned in the Teaching Scheme for Papers 102, 103

and 105. Separate journals for Paper No. 102, 103 & 105 should be prepared.

Effective From	: July – 2009
PAPER NO.	: 201
Paper Title	: Object Oriented Programming

- 1. Procedure Oriented Programming Vs. Object Oriented Programming
- 2. **Classes and Objects**
 - 2.1 Structure & classes
 - 2.2 Encapsulation & Data Hiding
 - 2.3Constructors
 - 2.4 Friend Functions
 - 2.5 Inline Functions
 - 2.6 Dynamic Object Creation & Destruction
 - 2.7 Destructors
- 3. Polymorphism
 - 5.1 Operator Overloading
 - 5.2 Functional Overloading
- 4. Inheritance
- 5. Dynamic Polymorphism

Reference Books

- 1. Objected Oriented Programming with C++ E Balagursamy
- The C++ Programming Language, Stroustrup, Addison Wesley
 The Complete Reference C++, Schildt, Tata McGraw Hill
- 4. OOP in Tourbo C++, Robert Lafore, Galgotia Publication
- 5. C++ Primer, Lippman, Addition Wesley
- 6. Object Oriented Programming with ANSI and Turbo C++, Kamthane, Pearson Education
- 7. Thinking in C++, Bruce Eckel, Pearson
- Object Oriented Modelling & Design, Rumbaugh..., PHI
 Object Oriented Analysis & Design with Application, Grady Booch, LPE
- 10. Standard C++ with Object Oriented Programming, Paul S. Wang, Thomson
- 11. Object Oriented Design, Peter Coad, Prentice Hall

Effective From: July – 2009PAPER NO.: 202Paper Title: Programming in .NET

1. Overview of Microsoft .NET Framework

- 1.1 The .NET Framework
- 1.2 The Common Language Runtime (CLR)
- 2.3 The .NET Framework class Library
- 2.4 .NET Web Services

2. Visual Basic .NET programming

- 2.1 Working with Tool box controls
- 2.2 Working with Menus and Dialog Boxes
- 2.3 Tapping Errors Using Structured Error Handling
- 2.4 Using Modules and Procedures
- 2.5 Using Arrays and Collections
- 3. Object Oriented Programming
 - 3.1 Creating Classes, Object Construction & Destruction
 - 3.2 Class Libraries : DLL's & Static Classes
 - 3.3 Abstraction, Encapsulation & Polymorphism
 - 3.4 Interfaces & Inheritance
 - 3.5 Object Serialization

- 4. Database access using ADO.NET
 - 4.1 Visual Database Tools
 - 4.2 ADO.NET Object Model
 - 4.3 ADO.NET Programming
 - 4.4 Working With DataSets
 - 4.5 Integration with XML
 - 4.6 The Middle Tier
- 5. Introducing ASP.NET
 - 5.1 Overview of ASP.NET
 - 5.2 Building Web Forms
 - 5.3 Maintaining State in Web Applications
 - 5.4 Caching & Configuration
 - 5.5 Accessing Databases from ASP.NET
- 6. The Web Data Controls
- 7. Working With WebServices

References :

- 1. Moving to <u>VB.NET</u>: Strategies, Concepts, and Code by Dan Appleman
- 2. Microsoft Visual Basic .NET Step By Step, Michael Halvorson, PHI
- 3. Database Programming with Visual Basic .NET and <u>ADO.NET</u> by F. Scott Barker Sams Publishing
- 4. Beginning .NET Web Services Using Visual Basic .NET, Joe Bustos and Karlli Watson, Wrox Publication
- 5. .NET Complete Development Cycle, G. Lenz, T. Moeller, Pearson Education
- 6. Professional <u>VB.NET</u>, 2nd Edition by Fred Barwell, et al Wrox Publication
- 7. Mastering Visual Basic .NET Database Programming Bilgin BPB Publication.

Effective From: July – 2009PAPER NO.: 203Paper Title: RELATIONAL DATA BASE MANAGEMENT SYSTEM

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

Effective From	: July – 2009
PAPER NO.	: 204
Paper Title	: SOFTWARE ENGINEERING

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. Software engineering a practitioner's approach Roger S Pressman McGraw Hill Inter.
- 2. 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 Publication

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

Effective From: July - 2009PAPER NO.: 205Paper Title: PRACTICAL (BASED ON PAPER NOS. 201 TO 203)

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.