VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
Post Graduate Diploma in Computer Application (Evening)
(1st SEMESTER) SYLLABUS

Effective From : July – 2009
PAPER NO. : E101
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
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
12. Operating Systems - Stallings – PHI

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Effective From : July – 2009
PAPER NO. : E102
Paper 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 constraints and relationships.
   5.4 Using SQL queries.
   5.5 Introduction to other object : Forms, Reports, Macros, etc.

6. Integrity Constraints
   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**

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
5. Access Database Design & Programming – Steven Roman - O'Reilly
6. Microsoft Access: Bible – Cary N. Prague

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Effective From : July – 2009
PAPER NO. : E103
Paper 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
10. Mastering Turbo C - Kelly & Bootle - BPB
11. Mastering Turbo C - Stan Kelly - BPB

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Effective From : July – 2009
PAPER NO. : E104
Paper 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
9. Speed up Your Site: Website Optimization – Andrew B King – New Riders

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D. C. A. (1st SEMESTER) SYLLABUS

Effective From : July – 2009
PAPER NO. : E105
Paper Title : PRACTICALS

Practical shall be conducted as mentioned in the Teaching Scheme for Papers E102, E103 and E104. Separate journals for Paper No. 102, 103 & 104 should be prepared.

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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 VB.NET: 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 ADO.NET by F. Scott Barker - Sams Publishing
5. .NET – Complete Development Cycle, G. Lenz, T. Moeller, Pearson Education
Effective From : July – 2009
PAPER NO. : E302
Paper Title : Practical

Practical Based on E301