Veer Narmad South Gujarat University, Surat.
Syllabus
M.C.A (4rd semester)
Effective from :July 2010
Paper : 401 : 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. Multithreading, Files & Streams

5. Database access using ADO.NET
   - 5.1 Visual Database Tools
   - 5.2 ADO.NET Object Model
   - 5.3 ADO.NET Programming
   - 5.4 Working With DataSets
   - 5.5 Integration with XML
   - 5.6 The Middle Tier

6. Introducing ASP.NET
   - 6.1 Overview of ASP.NET
   - 6.2 Building Web Forms
   - 6.3 Maintaining State in Web Applications
   - 6.4 Caching & Configuration
   - 6.5 Accessing Databases from ASP.NET

7. The Web Data Controls

8. 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
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 VB.NET, 2nd Edition
   by Fred Barwell, et al - Wrox Publication
7. Mastering Visual Basic .NET Database Programming - Bilgin - BPB Publication.
8. Visual Basic 2008 Programming Black Book Beginners Ed., Kogent, Wiley
9. Pro VB 2008 and the .Net 3.5 Platform, Andrew Troelsen, Apress
10. Microsoft Visual Basic 2008 Step By Step, Michael Halvorson, Microsoft Press

Veer Narmad South Gujarat University, Surat.
Syllabus
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Effective from :July 2010
Paper : 402 : Information Systems

1 Information System in Enterprise
- 1.1 System Applications in the Organization
  - 1.1.1 Kinds of Information Systems
  - 1.1.2 Types of Information Systems
  - 1.1.3 Relationship of systems with one another
- 1.2 MIS Development Process
- 1.3 Functional Perspective of System
  - 1.3.1 Various Information Systems like Sales and Marketing, Manufacturing and Production, Financial and Accounting, Human Resource etc.
- 1.4 Integrating Functions and Business Processes
  - 1.4.1 Business Processes and Information System
  - 1.4.2 Customer Relationship Management (CRM) and Supply Chain Management
  - 1.4.3 Enterprise Systems
  - 1.4.4 Vertical and Horizontal Industrial Networks

2 Management Information System
- 2.1 Need of Information System
  - 2.1.1.1 What is an Information System?
  - 2.1.2 Competitive Business Environment
  - 2.1.3 A Business Perspective on Information Systems
- 2.2 Approaches to Information Systems
  - 2.2.1 Technical Approach
  - 2.2.2 Behavioral Approach
  - 2.2.3 Sociotechnical Systems
- 2.3 The role of Information System
  - 2.3.1 Scope of Information System
  - 2.3.2 Organizational Design
  - 2.3.3 Electronic Commerce and Electronic Business
- 2.4 Use of Information System
  - 2.4.1 Challenge of Information Systems

3 Information System, Organizations, Management and Strategy
- 3.1 Relationship of an Organization with Information System
  - 3.1.1 What is an Organization?
  - 3.1.2 Features of Organization
- 3.2 Role of Information System in Organizations
  - 3.2.1 How Information System affect Organization?
  - 3.2.2 Implications for the design and Understanding of Information System

- 3.3 Relationship of Manager, Decision Making and Information Systems
  - 3.3.1 Role of Managers in Information System
  - 3.3.2 Managers and Decision Making
- 3.4 Information System and Business Strategies
  - 3.4.1 What is Strategic Information System?
  - 3.4.2 Business Level Strategy and Value Chain Model
  - 3.4.3 Supply Chain Management and Efficient Customer Response system

4 Electronic Commerce and Electronic Business
- 4.1 Emerging Trends
  - 4.1.1 New Business Models
- 4.2 Electronic Commerce
- 4.3 Electronic Commerce Payment Systems
- 4.4 Electronic Business and Digital Firm
- 4.5 Challenges and Opportunities of E-Commerce

5 Knowledge Based Systems
- 5.1 Knowledge Management in Organization
  - 5.1.1 System and Information of Knowledge Management
  - 5.1.2 Knowledge Work and Productivity
- 5.2 Information and Knowledge Work System
  - 5.2.1 Office and Document Management System
  - 5.2.2 Creating Knowledge Work System
  - 5.2.3 Group Collaboration System
- 5.3 Use of Artificial Intelligence in Business

6 Decision Making
- 6.1 Decision Support System (DSS)
  - 6.1.1 Relationship of MIS and DSS
  - 6.1.2 Types of Decision Support System
  - 6.1.3 Components of Decision Support System
  - 6.1.4 Decision Support System Applications
- 6.2 Group Decision Support System (GDSS)
  - 6.2.1 What is Group Decision Support System
  - 6.2.2 Characteristics of Group Decision Support System
  - 6.2.3 Importance of Group Decision Support System
- 6.3 Executive Support System (ESS)
  - 6.3.1 Role of Executive Support System
  - 6.3.2 Development of Executive Support System
  - 6.3.3 Advantage of Executive Support System

7 Control and Security of Information System
- 7.1 Threats to Information Systems
- 7.2 System Quality Problems
  - 7.2.1 Software and Data Quality Problems
- 7.3 Control Environment
  - 7.3.1 General Controls and Application Controls
  - 7.3.2 Security issue on E-Commerce

7.3.3 Control Structure Development

Reference Books :

1. Management Information System : Managing A Digital Firm – 87th Ed., Kenneth C. Laudon & Jane P. Laudon, Pearson Education, Second Indian Reprint 2004
2. Principles of Information Systems, 5th Ed., Ralph M. Stair & George W. Reynolds, Course Technology – Thomson Learning, 2001
3. Management Information system, W.S. Jawadekar, Tata McGraw-Hill,
4. Information Systems Management In Practice, Sixth Edition, B.C. McNurlin, R.H. Sprague, Pearson Education
5. Information Systems for Modern Management, Murdick, Ross and Claget, Prentice Hall

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Syllabus
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Effective from :July
Paper : 403 : Data Communication and Network Protocols

1. Introduction
   - 1.1 Review of ISO OSI reference model
   - 1.2 Introduction to TCP/IP protocol suite
   - 1.3 Introduction to internet and its administration
2. IP
   - 2.1 IP addresses: Class full addressing
   - 2.2 IP addresses: Class less addressing
   - 2.3 Delivery, forwarding and routing of IP packets
3. IP protocol
   - 3.1 Introduction
   - 3.2 Datagram
   - 3.3 Fragmentation
   - 3.4 Options
   - 3.5 Checksum
   - 3.6 Utilities
4. ARP and RARP
   - 4.1 Introduction
   - 4.2 ARP, RARP Packet formats
   - 4.3 ARP,RARP Encapsulation
   - 4.4 Operation
   - 4.5 Proxy ARP
   - 4.6 RARP server

5. ICMP
   - 5.1 Introduction
   - 5.2 Message Types
   - 5.3 Message format
   - 5.4 Error reporting
   - 5.5 Query
   - 5.6 Checksum
   - 5.7 Debugging tools
6. IP Routing
   - 6.1 Examples
   - 6.2 ICMP host and N/W Unreachable Errors
   - 6.3 Introduction to Dynamic routing, RIP, OSPF, BGP, CIDR
7. UDP
   - 7.1 Introduction
   - 7.2 User datagram
   - 7.3 Checksum
   - 7.4 Operation

7.5 UDP usage

8. TCP
   - 8.1 Services
   - 8.2 Features
   - 8.3 segment
   - 8.4 Connection
   - 8.5 State transition diagram
   - 8.6 Flow control
   - 8.7 Error control
   - 8.8 Congestion control
   - 8.9 TCP timers
   - 8.10 Options
9. DNS
   - 9.1 Domain Name space and distribution
   - 9.2 DNS in Internet
   - 9.3 Resolution
   - 9.4 DNS messages
   - 9.5 Record types
   - 9.6 Compression
   - 9.7 DDNS
   - 9.8 Encapsulation
10. Introduction to
    SCTP, RIP, OSPF, BGP, BOOTP, DHCP, TELNET, FTP, TFTP, SMTP, POP, IMAP, SNMP

Reference Books

1. TCP/P Protocol Suite , Behrouz A. Forouzan , 3rd edition, Tata McGraw Hill
2. TCP/IP Illustrated Vol. – 1, W. Richard Stevents
3. TCP/IP Illustrated Vol –2, W. Richard Stevens
4. Data and Network Communication, M.A. Miller, Thomson Learning
5. Data Communication and Networks, A.S. Godbole, Tata MCGraw Hill
6. Introduction to Data Communication & Networking, Wayne Tomasi, Pearson Ed.

Veer Narmad South Gujarat University, Surat.
Syllabus
M.C.A (4rd semester)
Effective from :July 2010
Paper : 404 : Java Programming

1. Internet and Java Language
    - 1.1 Introduction to Internet
    - 1.2 Introduction to Java Phenomenon
    - 1.3 Features of Java
    - 1.4 Java Developer's Kit
        - 1.4.1 Java Compiler
        - 1.4.2 Java Interpreter
        - 1.4.3 Java Debugger
        - 1.4.4 Applet Viewer
    - 1.5 Comparison of Java with C++
2. Java Language Introduction
    - 2.1 Variables
    - 2.2 Data Types
    - 2.3 Arrays
    - 2.4 Operators
    - 2.5 Flow Control
3. Classes and Objects
    - 3.1 Simple Class
    - 3.2 Fields
    - 3.3 Access Controls
    - 3.4 Object Creation
    - 3.5 Construction and Initialization
    - 3.6 Methods
    - 3.7 This
    - 3.8 Overloading Methods
    - 3.9 The main method
    - 3.10 Extended Class and constructor in Extended Class
    - 3.11 Inheriting and redefining members
    - 3.12 Type computability and conversion
4. Interfaces
    - 4.1 Introduction to Interfaces
    - 4.2 Interface declaration
    - 4.3 Inheriting and Hiding Constants
    - 4.4 Inheriting Overloading and Overriding Methods
    - 4.5 Interface Implementation
5. Exceptions
    - 5.1 Introduction to Exception
    - 5.2 Creating Exception Types

11.3.6 Choice List
11.3.7 Layout Managers
11.4 Event Handling

12 Networking
1.1 Inetaddress
1.2 Datagrams
1.3 Socket for Clients
1.4 Socket for servers
1.5 Client Server Interaction with Stream Socket Connection
1.6 URL Manipulation
1.7 Overview of Java Database Connectivity

Reference Books

1. Java Programming Language Third Ed., Arnold James Gosling, David Holmes, Addition Wesley
2. Java – The Complete Reference, Patrick Naughton, Tata McGraw Hill
3. Experiments with Java : An Introductory Lab Manuals, S.A. Robelsky – Addition Wesley
4. Java 2 From Scratch, Stevens Halmes, PHI
5. Complete Reference, Peter Naughten, Tata McGraw Hill

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Syllabus
M.C.A (4rd semester)
Effective from :July 2010
Paper : 405 : Artificial Intelligence and Knowledge Based Systems

1. Introduction to Artificial Intelligence
   - 1.1. What is AI
   - 1.2. Applications of AI
   - 1.3. Introduction to Expert System
   - 1.4. Applications of expert systems

2. Knowledge Overview
   - 2.1. Definition and importance of knowledge
   - 2.2. Overview knowledge representation
   - 2.3. Overview of knowledge organization
   - 2.4. Overview of knowledge Manipulation
   - 2.5. Overview of Knowledge Acquisition

3. Representation and Search
   - 3.1. Structured Knowledge
     - 3.1.1. Associative networks
     - 3.1.2. Frame structures
     - 3.1.3. Conceptual dependencies and scripts
   - 3.2. Object oriented representation

4. Organization and Manipulation
   - 4.1. Introduction to organization
   - 4.2. Search techniques
     - 4.2.1. Uninformed search
     - 4.2.2. Informed search
   - 4.3. Introduction to matching Techniques

5. Knowledge Acquisition
   - 5.1. Knowledge learning types
   - 5.2. General learning models
   - 5.3. Performance of learning models

6. Expert System
   - 6.1. Advantages of Expert Systems
   - 6.2. Characteristics of Expert Systems
   - 6.3. Design of Expert Systems
     - 6.3.1. Selecting Problem
     - 6.3.2. Stages in Expert systems development
     - 6.3.3. Errors in developments
     - 6.3.4. Expert System Software Engineering

6.3.5. Expert System Life Cycle

Reference Books

1. Dan W. Patterson, “Introduction to Artificial Intelligence and Expert System”, Prentice Hall India, (1999)
2. Stuart J. Russell and Peter Norvig, “Artificial Intelligence – A Modern Approach” 2nd Ed. , Pearson Education, (2004)
3. George F. Luger, “Artificial Intelligence Structures and Strategies for Complex Problem Solving”, 4th Ed., Pearson Education, (2004)
4. V.S. Janakiraman, K. Sarukesi, P. Gopalakrishnan, “Foundation of Artificial Intelligence and Expert Systems”, MacMillan, (2002)
5. Giarratano & Riley, Expert Systems Principles and Programming”, 3rd Ed., Thomson (Vikas Pulishing House)
6. Introduction to Artificial Intelligence, Rajendra Akerkar, PHI

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Paper : 406 : Practical

Practicals shall be based on paper no 401, 402 and 404. Under paper 402 a part time project is expected from a student. Separate journals to be prepared for subject 401 and 404. Project report to be prepared and to be submitted for paper 402.