

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (Information Technology) Programme
B.Sc. (Information Technology)
Semester -V

Paper No : 501

Paper Title : GUI Tools

[L:3, T:1]

1. Introducing Visual C++ 6
 - 1.1 Functions
 - 1.2 Structures
 - 1.3 Classes

2. Dialog Boxes and Basic Controls
 - 2.1 Dialog Boxes
 - 2.2 Button Controls
 - 2.3 Edit Controls
 - 2.4 List Box and Combo Box Controls

3. Windows and MFC Architecture
 - 3.1 Messages and Event Driven Programming
 - 3.2 The document/View Architecture

4. Menus

5. The Graphics Interface
 - 5.1 Device contexts
 - 5.2 Using Pens and Brushes
 - 5.3 Fonts
 - 5.4 Icons and Cursors

6. ActiveX
 - 6.1 ActiveX Control Fundamentals
 - 6.2 ActiveX Control Properties
 - 6.3 ActiveX Control Methods
 - 6.4 ActiveX Control Events

- 7 Introduction to COM and DCOM

Reference Books:

1. VC++, COM, and Beyond - Yeshavant Kanetkar & Sudesh Saoji - BPB
2. Developing 2. ActiveX Components with Visual Basic 5.0 - Dan Appleman - Techmedia
3. COM/DCOM Unleashed - Randy Abernethy - Techmedia
4. Mastering Visual C++ 6 - Michael J. Young - Sybex
5. Teach Yourself Visual C++ 6 in 24 Hours - Micky Williams - Techmedia
6. Professional DCOM Programming - Dr.Richard

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (Information Technology) Programme
B.Sc. (Information Technology)
Semester -V

Paper No : 502

Paper Title : RDBMS

[L:3, T:1]

1. Client/Server Computing Model
2. Overview of Oracle Architecture
3. Oracle Tools and Utilities
 - 3.1 SQL
 - 3.2 PL/SQL – SQL Procedural Extension
 - 3.2.1 Package Creation
 - 3.2.2 Packaged Procedure
 - 3.2.3 Creating Packaged Subprograms
 - 3.2.4 Cursors
 - 3.2.5 Stored Procedures
 - 3.2.6 Database Triggers
 - 3.3 SQL *PLUS
 - 3.4 SQL *DBA
 - 3.5 SQL *LOADER
 - 3.6 Import & Export
4. Database Administration
 - 4.1 Managing the Database
 - 4.1.1 Parameter File
 - 4.1.2 Oracle SID
 - 4.1.3 Creating the New Database
 - 4.1.4 Startup and Shutdown
 - 4.1.5 Data Dictionary
 - 4.1.6 Redo Logs
 - 4.1.7 Trace and Alert Files
 - 4.1.8 Database Modes
 - 4.1.9 Useful Data Dictionary Modes
 - 4.2 Managing Disk Space
 - 4.2.1 Blocks in Database File
 - 4.2.2 Segments and Extents
 - 4.2.3 ROWID
 - 4.2.4 Storage Clause
 - 4.2.5 Rollback Segments
 - 4.2.6 Table Space
 - 4.3 Managing Users
 - 4.3.1 User Authentication Methods
 - 4.3.1.1 Password Authentication
 - 4.3.1.2 O.S. Authentication

- 4.3.2 User Configuration Setup
 - 4.3.2.1 Profiles
 - 4.3.2.2 Default Table Space
 - 4.3.2.3 Temporary TableSpace
- 4.3.3 Resource Management
 - 4.3.3.1 Using Profiles
 - 4.3.3.2. Quotas
- 4.3.4 Working with User's Database Account
 - 4.3.4.1 Creating, Modifying and Deleting User Account
 - 4.3.4.2 Changing Password
- 4.4 Backup and Recovery
 - 4.4.1 Types of Backup
 - 4.4.1.1 Control Files, Redo Log Files, Cold & Hot Backup
 - 4.4.2 TableSpace Offline Copy
 - 4.4.3 Types of Database Failures
 - 4.4.4 Recovery Methods
 - 4.4.4.1 Cold Restore, Full Database Recovery, Time Based Recovery
- 4.5 Database Security
 - 4.5.1 Authentication
 - 4.5.2 Privileged Accounts
 - 4.5.3 System Security
 - 4.5.4 Database Roles
 - 4.5.5 Database Auditing
 - 4.5.6 Object Security

Reference Books:

1. The Complete Reference – Oracle Press – George Koch
2. Oracle Performance Tuning - Oracle Press – Richard
3. Oracle 8 PL/SQL Programming - Oracle Press
4. Oracle 24 * 7 Tips and Techniques - Oracle Press – Venkat S Devraj
5. Oracle SQL: The Essential Reference - O`Reilly – David C Kreines
6. ORACLE 8 PL/SQL Programming – Scott Urman
7. ORACLE 8 DBA Handbook – Kevin Loney
8. ORACLE 8 How To – Edward Honour
9. ORACLE 8 Architecture – Steve Bobrowski
10. ORACLE 8 The Complete Reference – George Koch
11. ORACLE 8 SQL Programming and Tuning – Pete Cassidy
12. ORACLE 8 Object Oriented Design – David A Anstey
13. ORACLE SQL and PL/SQL Annotated Archives – Kevin Loney
14. ORACLE Security – Marlene Theriault W Heney
15. ORACLE Database Administration – David C Kreines B Laskey
16. ORACLE A Beginner's Guide – Abbey & Corey

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (Information Technology) Programme
B.Sc. (Information Technology)
Semester -V

Paper No. : 503

Paper Title : Interactive Computer Graphics

[L:3, T:1]

1. Geometry & Line Generation
 - 1.1 Geometry
 - 1.2 Pixel & frame buffer
 - 1.3 Vector Generation : VECGEN & BRASENHAM Algorithm
 - 1.4 Character Generation
 - 1.5 Circle drawing

2. Graphics Primitives
 - 2.1 Display Devices
 - 2.1.1 Line & point plotting systems
 - 2.1.2 Raster, Pixel & Point plotters
 - 2.1.3 Continual refresh & storage displays
 - 2.1.4 Plasma Panel displays etc.
 - 2.2 Primitive operations
 - 2.3 Text

3. Polygons
 - 3.1 Polygon & its representation
 - 3.2 Inside Tests : Even Odd and Winding number method
 - 3.3 Filling polygons
 - 3.3.1 Flood & Scan line fill
 - 3.3.2 Filling with a pattern

4. Transformation
 - 4.1 Introduction to matrices
 - 4.2 Transformations
 - 4.2.1 Scaling transformation
 - 4.2.2 Rotation
 - 4.2.3 Translation
 - 4.2.4 Rotation about arbitrary Point
 - 4.2.5 Inverse and other transformations

5. Segments
 - 5.1 Introduction to segments
 - 5.2 Segment table
 - 5.3 Various operations on segments

6. Windowing & Clipping
 - 6.1 Windowing
 - 6.2 The viewing transformation
 - 6.3 Multiple windowing

- 6.4 Clipping
 - 6.4.1 Cohen - Sutherland outcode Algorithm
 - 6.4.2 Sutherland - Hodgman Algorithm
- 6.5 Generalized Clipping
- 7. Three Dimensions
 - 7.1 Geometry Of 3D
 - 7.2 3D primitives & Transformations
 - 7.3 Projection
 - 7.4 Windowing & Clipping
- 8. Light, Colour & Shading
 - 8.1 Diffuse Illumination
 - 8.2 Point-Source Illumination
 - 8.3 Reflection
 - 8.4 Shading
 - 8.5 Transparency
 - 8.6 Colours & Colour Tables
- 9. Approaches to infinity
 - 9.1 Tiling the plane
 - 9.2 Recursively defined curves
 - 9.2.1 Koch curve
 - 9.2.2 C-curve & Dragons
 - 9.2.3 Space filling curves
 - 9.2.4 Reptiles.
 - 9.3 Fractals
 - 9.3.1 Self similarity & curves
 - 9.3.2 Fractal trees
- 10. Introduction to Animation

Reference Books:

1. Giloi W.K. : Interactive Computer Graphics - PHI
2. Newman W. & Sproul P.F.: Principles Of Interactive Computer Graphics - McGraw-Hill
3. Rogers D.F. : Procedural Elements for Computer Graphics - McGraw-Hill
4. Harrington S. : Computer Graphics : Programming approach - Tata McGraw-Hill
5. Foley J.D., Van Dam A. : Fundamentals Of Interactive Computer Graphics - Addison-Wesley
6. Hearn D., Baker P.M. : Computer Graphics - Prentice-Hall

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (Information Technology) Programme
B.Sc. (Information Technology)
Semester -V

Paper No. : 504

Paper Title : System Analysis & Design

[L:3, T:1]

1. Introduction to information systems development

- 1.1 System analysis & design : an overview
- 1.2 System analyst & users : Responsibilities
- 1.3 Business information systems : categories
- 1.4 Software, software characteristics.
- 1.5 Problems with the software development
- 1.6 Software development process models
 - 1.6.1 Waterfall model
 - 1.6.2 Prototyping
 - 1.6.3 Spiral model

2. Requirement Analysis & specifications

- 2.1 Fact finding techniques
- 2.2 Structured analysis: tools & techniques
- 2.3 Data flow diagrams, E-R diagrams
- 2.4 Data dictionary
- 2.5 Characteristics, components of Requirement specification
- 2.6 Software requirement specification document

3. System Design

- 3.1 Design concepts & principles
- 3.2 Design tools & techniques
- 3.3 Various components of design
- 3.4 Design methodology
- 3.5 Design documentation

4. Testing & Implementation

- 4.1 Testing fundamentals
- 4.2 Functional testing
- 4.3 Structural testing
- 4.4 Testing process

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
- 2. Analysis and Design of Information Systems - James A Senn - McGraw Hill
- 3. An integrated approach to software engineering - Pankaj Jalote - Narosa Pub.
- 4. System Analysis & Design - Elias M Awad - Galgotia Publ,1997

5. Elements of system analysis - Marvin Gore - Galgotia Publ
6. Software Engineering Concepts - Fairley R E - Mc-Graw Hill
7. Software Engineering - Lewis T G - Mc-Graw Hill
8. Fundamentals of Software Engineering – Carlo Ghezzi
9. Software Reuse – Ivar Jacobson Martin Gris
10. Systems analysis & Design and the transition to objects:Sandra D Dewitz, McGraw Hill
11. System analysis & design methods: Whitten, Bentley & Barlow, Galgotia, 1995
12. The practical guide to structured Systems analysis Design, melilier Page-Jones, PHI
13. IEEE standard for software user documentation, std 1063-1987
14. Software engineering- A programming approach, D. Bell, I. Morrey, PHI

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (Information Technology) Programme
B.Sc. (Information Technology)
Semester -V

Paper No. : 505

Paper Title : Computer Networks

[L:3, T:1]

1. Introduction

- 1.1 Introduction to networks and its application
- 1.2 Network Structure
- 1.3 Network Architecture
- 1.4 The OSI Reference model & services

2. Physical Layer

- 2.1 Concepts of data transmission (Analog & Digital Transmission)
- 2.2 Multiplexing & switching technique
- 2.3 ISDN (Integrated Service Digital Network)
- 2.4 Terminal Handling

3. MAC Sublayer

- 3.1 LAN protocols & IEEE standards for LAN
- 3.2 Fiber Optic & Satellites networks

4. Data Link Layer

- 4.1 Data Link Layer protocols
- 4.2 Error detection & correction

5. Network Layer

- 5.1 Routing Algorithm
- 5.2 Congestion Control Algorithm
- 5.3 Internetworking

6. Transport Layer

- 6.1 Connection Management

7. Concepts of Session Layer

8. The Presentation Layer

- 8.1 Data Compression Technique
- 8.2 Cryptography

9. The Application Layer

- 9.1 Electronic Mail
- 9.2 Virtual Terminals
- 9.3 General Purpose Applications

10. Internetworking with TCP/IP

10.1 Principles - Protocols and Architecture

10.2 Design and implementation

10.3 Internals

11. Internet/Intranet

11.1 HTTP, HTML, Web Computing

Reference Book:

1. Computer Networks - A. S. Tanenbaum - Prentice-Hall
2. Data Communication & Networks – Stalling - PHI
3. Data Communication & Networks - Forozun
4. Computer Networks and Distributed Processing - Martin J. - Prentice-Hall
5. Local Area Networks: An Introduction - Stalling, William - Mc-Millan Publishing
6. Computer Networks: Protocols, Standards and Interfaces - Black - Prentice-Hall
7. Data Networks : Concepts Theory and Practices - Black - PHI
8. Internetworking with TCP/IP: Principles, Protocols and Architecture - Comer - Prentice
9. Design and Analysis of Computer Communication Networks - Ahuja - Mc-Graw Hill
10. Computer Networks a system approach – Larry L Peterson
11. Data Communications – Prakash C Gupta
12. The ABC's of Local Area Network – Michael Dortch
13. Networking Complete – Sybex
14. Teach Yourself TCP/IP in 14 Days – Timothy Parker

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (Information Technology) Programme
B.Sc. (Information Technology)
Semester -V

Paper No. : 506

Paper Title : Practical

[P:10 HRS]

Practical shall be conducted for Paper No. 501, 502, and 503. Separate journals for Paper No. 501, 502, and 503 should be prepared.

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (I.T.) [Five Years Integrated Course]
B.Sc. (Information Technology)
Semester: 5

Paper Sr. No.	Paper Title	Teaching Schedule (Hours/Week)		University Exam Theory / Practical Duration		Internal Exam Theory / Practical Duration		Total Theory / Practical
		Lect	Prac	Hrs.	Marks	Hrs.	Marks	
501	VADT – II	4	-	3	70	2	30	100
502	RDBMS	4	-	3	70	2	30	100
503	Computer Graphics & Animation	4	-	3	70	2	30	100
504	System Analysis & Design	4	-	3	70	2	30	100
505	Operating Systems	4	-	3	70	2	30	100
506	Practicals		10	5	140	3	60	200
Total		30			490		210	700