

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INFORMATION TECHNOLOGY

TEACHING SCHEME (w. e. f. 10th Jan,' 11)

SEMESTER- VI

SR. NO	SUB. CODE	SUBJECT	TEACHING SCHEME (HOURS)			CREDITS
			THEORY	TUTORIAL	PRACTICAL	
1	361601	ASP.NET and VB.NET Web Programming	3	0	4	7
2	361602	Information Security	3	0	2	5
3		Elective – I	3	0	4	7
4		Elective – II	3	0	2	5
5	361608	Project	0	0	6	6
		TOTAL	12	0	18	30

SR. NO	SUB. CODE	ELECTIVE -I SUBJECT(Select ANY ONE)
1	361603	Advanced Java
2	361604	Enterprise resource planning (ERP)
3	361605	Programming with C #
		ELECTIVE –II SUBJECT (Select ANY ONE)
1	361606	Mobile Computing
2	361607	Computer Logic Design
3	360708	Network Operating System (Common Elective Subject with Diploma Computer Engg.)

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER- VI

Subject Code : 361601

Subject Name: ASP.NET AND VB.NET WEB PROGRAMMING

Sr. No.	Subject Content	Hrs.
1	1.0 Introduction to .NET and Visual Studio 2005 1.1 What's Wrong with Classic ASP? 1.2 Basics of ASP.NET 1.0 1.3 An Introduction to Microsoft .NET 1.4 The Common Language Runtime 1.5 Assemblies 1.6 An Introduction to Visual Studio 2005 Creating a New Web Project (ASP.NET) Opening an Existing Web Site Building Web Sites Accessing a Web Site Debugging	4
2	2.0 ASP.NET Web Forms 2.1 Using the Web Forms Designer (Adding Controls) 2.2 Page Life cycle 2.3 Web Form Processing Stages 2.4 Master Page	3
3	3.0 ASP.NET Controls 3.1 HTML Server Controls (HtmlAnchor, HtmlButton, HtmlForm, HtmlImage, HtmlInputCheckBox, HtmlInputImage, HtmlInputRadioButton, HtmlInputText, HtmlTable, HtmlTableCell, HtmlTableRow, HtmlTextArea) 3.2 Web Server Controls (Button, CheckBox, CheckBoxList, DropDownList, HyperLink, Image, ImageButton, Label, LinkButton, ListBox, ListItem, Panel, Placeholder, RadioButton, RadioButtonList,	6

	TextBox) 3.3 Working with Control Properties and Events 3.4 Validation Controls (RequiredFieldValidator, RangeValidator Control, CompareValidator, RegularExpressionValidator, CustomValidator, ValidationSummary)	
4	4.0 State Management 4.1 ASP.NET State Management 4.1 View State 4.11 Storing Objects in View State 4.12 Assessing View State 4.2 The Query String 4.21 Cross-Page Posting and Validation 4.22 Cookies (create, set, add and expire cookie) 4.3 Session State 4.31 Session Architecture 4.32 Using Session State(HttpSessionState Members) 4.4 Application State	6
5	5.0 ASP.NET Configuration 5.1 The Global.asax Application File 5.11 Application Events 5.2 ASP.NET Configuration 5.21 The Machine.config File 5.22 The Web.config File 5.23 Configuration Settings	3
6	6.0 ADO.NET Fundamentals 6.1 The ADO.NET Architecture 6.11 ADO.NET Data Providers 6.12 Standardization in ADO.NET 6.13 Fundamental ADO.NET Classes 6.2 Connection Strings 6.3 The Command and DataReader Classes 6.31 Command Basics 6.32 The DataReader Class 6.33 The ExecuteReader() Method and the DataReader 6.34 The ExecuteScalar() Method 6.35 The ExecuteNonQuery() Method	6

7	7.0 Data Components and the DataSet 7.1 Concept of Disconnected Data 7.11 Web Applications and the DataSet 7.2 The DataSet Class 7.21 The DataTable Class 7.22 The DataRow Class 7.3 The DataAdapter Class 7.31 Filling a DataSet 7.4 The DataView Class 7.41 Sorting with a DataView 7.42 Filtering with a DataView	7
8	8.0 Data Binding 8.1 Basic Data Binding 8.11 Single-Value Binding 8.12 Repeated-Value Binding 8.2 The SqlDataSource 8.21 Selecting Records 8.22 Updating Records 8.23 Parameterized Commands 8.24 Disadvantages of the SqlDataSource 8.3 The ObjectDataSource 8.31 Selecting Records 8.32 Updating Records 8.33 Updating with a Data Object	7
	Total	42

NOTE:- Following are the minimum experiences required, but the college can do more experiences if possible.

Laboratory Experiences:

Student should write programs on the basis of prescribed Syllabus of this Course. It should include the following.

1. Creating ASP.NET Web Forms with ASP.NET Controls
2. State Management Practical
3. Web.config setup illustrating Practical
4. ADO.NET Connection related practical
5. Use of DataSet illustrating Practical
6. Data Binding through controls

Reference Books:

1. Beginning Object Oriented ASP.NET 2.0 with VB.NET From Novice to Professional
by Brian R. Myers – Apress.
2. Pro ASP.NET 2.0 In VB 2005 by Laurence Moroney and Matthew MacDonald –
Apress.
3. Beginning ASP.NET 2.0 by Chris Hart, John Kauffman, Dave Sussman,
Chris Ull

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER- VI

Subject Code : 361602

Subject Name: **INFORMATION SECURITY**

Sr. No.	Subject Content	Hrs.
1	1.0 INTRODUCTION TO INFORMATION SECURITY 1.1 What Is Information Security? 1.2 Overview of information Security 1.3 Security Services, Mechanisms and Attacks 1.4 The OSI Security Architecture 1.5 A Model for Network Security	4
2	2.0 SYSTEM SECURITY 2.1 Intruders 2.1.1 Intruders 2.1.2 Intruders detection 2.1.3 Password management. 2.2 Malicious Software 2.2.1 Viruses and Related Threats 2.2.2 Virus Countermeasures 2.3 Firewalls 2.3.1 Firewalls Design principle 2.3.2 Trusted Systems	8
3	3.0 SYMMETRIC KEY CRYPTOGRAPHY 3.1 Symmetric Cipher Model 3.2 Cryptography, Cryptanalysis	4

4	4.0 SUBSTITUTION TECHNIQUES 4.1 Creaser Cipher, Monoalphabetic Ciphers, Playfair Cipher 4.2 One Time Pad, Transposition Techniques , Stegnography	4
5	5.0 BLOCK CIPHERS AND THE DATA ENCRYPTION STANDARD 5.1 Simplified DES , Block Cipher Principles 5.2 The Data Encryption Standard , The Strength of DES 5.3 Block Cipher Modes of Operation	6
6	6.0 CONFIDENTIALITY USING SYMMETRIC ENCRYPTION 6.1 Placement of Encryption Function 6.2 Traffic Confidentiality 6.3 Key Distribution 6.4 Random Number Generation	6
7	7.0 PUBLIC-KEY CRYPTOGRAPHY AND RSA 7.1 Principles of Public-key Cryptosystems 7.2 RSA 7.3 Key Management in public-key cryptosystem 7.4 Diffie-Hellman Key Exchange	6
8	8.0 Digital Signature and Authentication Protocols 8.1 Digital Signatures 8.2 Authentication Protocols 8.3 Digital Signature Standard	4
	Total	42

Laboratory Experiences:

1. Write a 'c' program to Encrypt the plaintext and display the cipher text using Ceaser Cipher.
2. Write a 'c' program to Decrypt the cipher text and display the plain text using Ceaser Cipher.
3. Write a 'c' program to Encrypt the plaintext and display the cipher text using Monoalphabetic Substitution Cipher.
4. Write a 'c' program to Decrypt the cipher text and display the plain text using Monoalphabetic Substitution Cipher.
5. Write a 'c' program to Encrypt the plaintext and display the cipher text using playfair Cipher.
6. Write a 'c' program to Decrypt the cipher text and display the plain text using playfair Cipher.
7. Write a 'c' program to Encrypt the plaintext and display the cipher text using Vigenere Cipher.
8. Write a 'c' program to Decrypt the cipher text and display the plain text using Vigenere Cipher.
9. Write a 'c' program to Encrypt the plaintext and display the cipher text using Autokey Vigenere Cipher.
10. Write a 'c' program to Decrypt the cipher text and display the plain text using Autokey Vigenere Cipher.
11. Write a 'c' program to Encrypt the plaintext and display the cipher text using Columnar Transposition Cipher.
12. Write a 'c' program to Decrypt the cipher text and display the plain text using Columnar Transposition Cipher.

Text Book :

- (1) Cryptography and Network Security By William Stallings(Pearson Education)

Reference Books:

- (1) Computer Security Basics By Debby Russell, G.T. Gangemi, Sr.(Oreilly)
- (2) Network Security private communication in a PUBLIC world By Charlie Kaufman, Radia Perlman , Mike Speciner
- (3) Security in Computing, Charless P. Pfleeger, Shari Lawrence Pfleeger.
- (4) Enterprise Security, Robert C. Newman(Pearson Education)

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER- VI

Subject Code : 361603

Subject Name: **ADVANCED JAVA (Elective-I)**

Sr. No.	Subject Content	Hrs.
1	1.0 Introduction of Web Application using JAVA tools 1.1 Controls 1.2 Listeners 1.3 Handlers	5
2	2.0 Swing Programming 2.1 Introduction 2.2 Event Handling Using Swing 2.2.1 Versions of Swing 2.2.2 Labels 2.2.3 Actions, Tool tips, Timers 2.2.4 The Event Dispatch Thread 2.2.5 Client Properties 2.2.6 Keyboard Shortcuts 2.2.7 Serialization 2.2.8 Borders 2.2.9 Icons, Cursors 2.2.10 Double-Buffering 2.2.11 The Box Container 2.2.12 Simple Dialogs 2.2.13 JFileChooser, JColorChooser 2.2.14 Menus	5
3	3.0 Database Connectivity 3.1 MS-Access Connectivity 3.2 SQL (JDBC- ODBC) Connectivity	5

4	4.0 J2EE (JSP Introduction) 4.1 JSP Architecture 4.2 JSP Action Tags 4.3 JSP Declaratives 4.4 Basic JSP Scriptlets	6
5	5.0 JSP Connectivity 5.1 Retrieving Data posted to a JSP file from HTML file 5.2 JSP Session 5.3 JSP Cookies 5.4 Implement Java Script with JSP 5.5 Accessing Database from JSP	8
6	6.0 Servlets 6.1 Servlets Overview 6.2 Introduction to Java Servlets 6.3 Installing configuring and running Servlet 6.4 Methods of Servlet 6.5 Life Cycle of Servlet 6.6 Features of Servlet 2.5 6.7 Advantages of Java Servlets 6.8 Advantages of Java Servlets over CGI 6.9 Writing Basic Program in Servlet 6.10 Get And Post Method of Http 6.11 Simple Counter, Holistic Counter In Servlet	8
7	7.0 Accessing Database Using Servlet 7.1 Inserting Data In Database table using Statement 7.2 Retrieving Data from the table using Statement Inserting data from the HTML page to the database 7.3 Retrieving Data from the table using Prepared Statement 7.4 Deleting Rows From Table	5
	Total	42

Laboratory Experiences:

Student should write programs on the basis of prescribed curriculum of this Course. It should include the following.

1. Developing Desktop Application using different Java Tools.
2. Perform different event Handling using swing Programming.
3. Perform different operation (Add, Delete, and Update) on Ms-Access Database using OLEDB Connectivity.
4. Perform different operation (Add, Delete, and Update) on SQL Database using JDBC-ODBC Connectivity.
5. Create different WebPages using JSP tags.
6. Accessing Database from JSP.
7. Create different WebPages using Servlets.
8. Accessing Database using Servlets.

Reference Books:

1. The complete Reference Java 2 By -Parick Naughton, Herbert Schildt
2. Programming with Java By E Balaguruswamy

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER- VI

Subject Code : 361604

Subject Name: ENTERPRISE RESOURCE PLANNING (Elective-I)

Sr. No.	Subject Content	Hrs.
1	1.0 Introduction to ERP 1.1 An overview 1.2 Integrated Management Information 1.3 Supply chain Management 1.4 Resource Management 1.5 Integrated Data Model 1.6 Scope 1.7 Technology 1.8 Benefits of ERP 1.9 Evolution 1.10 ERP and the Modern Enterprise	5
2	2.0 Business engineering & ERP 2.1 An overview 2.2 Business Engineering 2.3 Significance & principal of Business Engineering 2.4 BRP, ERP and IT 2.5 Business Engineering with Information Technology	6
3	3.0 Business Modeling for ERP 3.1 An overview 3.2 Building the Business Model 3.3 ERP Modules (Finance, Plant Maintenance, Quality Management, Materials Management)	7
4	4.0 ERP implementation Lifecycle 4.1 Pre-evaluation Screening 4.2 Package Evaluation 4.3 Project Planning Phase 4.4 Gap Analysis 4.5 Reengineering, Configuration, Implementation Team Training Testing 4.6 End-user Training, Post-implementation (Maintenance mode)	7

5	5.0 ERP Implementation & Advantages 5.1 An overview 5.2 Different Role 5.3 Customization 5.4 Precautions 5.5 ERP Implementation Methodology 5.6 Guidelines for ERP implementation 5.7 Advantages	8
6	6.0 ERP Domains 6.1 An overview 6.2 SAP 6.3 SAP R/3 Application	4
7	7.0 Case studies 7.1 E-Commerce to E-business 7.2 E-Business structural transformation, Flexible Business Design, Customer Experience	5
	Total	42

Practical and Term work

The Practical and Term work will be based on the topics covered in the syllabus.
Minimum **Four Case Studies** should be carried out during practical hours.

Reference Books:

- | | |
|-----------------------------------|---|
| 1. Enterprise Resource Planning | Vinodkumar Garg &
N.K.venkitakrishnan (PHI) |
| 2. Enterprise Resource Planning | Alexis Leon , Tata McGraw Hill. |
| 3. E-Business Roadmap For Success | Dr. Ravi Kalakota ,Marcia Robinson |
| 4. Enterprise Resource Planning | Ravi Shankar & S.Jaiswal , Galgotia. |
| 5. The SAP R/3 Handbook | |

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER- VI

Subject Code : 361605

Subject Name: **PROGRAMMING WITH C# (Elective-I)**

Sr. No.	Subject Content	Hrs.
1	1.0 NET ARCHITECTURE 1.1 The Relationship of C# to .NET 1.2 The Common Language Runtime 1.3 Assemblies 1.4 .NET framework Classes 1.5 Namespaces 1.6 Creating .NET Application Using C#	5
2	2.0 C# BASIC 2.1 Compiling and Running Program 2.2 Variables 2.3 Predefined Data Types 2.4 Flow Control 2.5 Enumerations 2.6 Arrays 2.7 Namespaces 2.8 The Main() Method 2.9 C# Processor Directives (#define, #undef, #if, #elif, #endif, #pragma)	4
3	3.0 OBJECTS & TYPES 3.1 Class members 3.2 Read-only fields 3.3 Structs 3.4 Partial & Static Class 3.5 The Object Class	4

4	4.0 OPERATORS & CASTS 4.1 The Ternary ,Checked & Unchecked ,Is, as , sizeof, Type of Operators, Nullable Types and Operators, Operator Precedence 4.2 Type Safety 4.3 Operator Overloading 4.4 User defined casts	4
5	5.0 DELEGATES & EVENTS 5.1 Delegates 5.2 Anonymous Methods 5.3 Events	6
6	6.0 MEMORY MANAGEMENT 6.1 Value data type, Reference Data type and Garbage Collection 6.2 Freeing Unmanaged Resources 6.3 Unsafe Code	4
7	7.0 STRING & EXPRESSIONS 7.1 System String 7.2 Regular Expressions	4
8	8.0 INHERITANCE 8.1 Types of Inheritance 8.2 Implementation Inheritance (Virtual methods, hiding methods, abstract classes, sealed classes) 8.3 Visibility and other Modifiers 8.4 Interfaces	6
9	9.0 ERRORS & EXCEPTIONS 9.1 Exception Classes 9.2 Catching Exceptions 9.3 User-defined Exception Classes	5
	Total	42

NOTE:- Following are the minimum experiences required, but the college can do more experiences if possible.

Laboratory Experiences:

Student should write programs on the basic of prescribed Syllabus of this Course. It should include the following.

1. Class & Object related programs.
2. Programs using the control structure of C#
3. Array, enumerations data type etc.
4. Function and operator overloading
5. Creating user defined casting.
6. Delegate and event oriented programs.
7. String Handling programs.
8. Using Inheritance
9. Exception handling programs

Reference Books:

- | | | |
|------------------------|--------------------------------|-----------|
| 1. Programming with C# | Balagurusamy | TMH |
| 2. Inside C# | Tom Archer, Andrew Whitechapel | Microsoft |
| 3. Professional C# | Simon Robinson | Wrox |
| 4. Complete C# | Shield | TMH |

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER- VI

Subject Code : 361606

Subject Name: **MOBILE COMPUTING (Elective-II)**

Sr. No.	Subject Content	Hrs.
1	1.0 Introduction to mobile computing. 1.1. Evolution of mobile computing 1.2. Mobile computing functions 1.3. Architecture for mobile computing 1.4. Adhoc networks 1.5. Middleware and Gateways 1.6. Application and Services 1.7 Security and Standards	7
2	2.0 Mobile Network and Transport Layer 2.1 Mobile IP 2.2 Packet Delivery, handover management and Location management 2.3 Registration, Tunneling and encapsulation 2.4 Dynamic host configuration 2.5 Indirect, snooping and Mobile TCP 2.6 TCP over 2.5/3.0 G mobile	10
3	3.0 Wireless LAN 3.1 Introduction 3.2 Architecture 3.3 Types 3.4 Roaming Issues	7
4	4.0 Wireless Application languages and operating systems 4.1 Understanding of Wireless Application languages 4.2 XML,JAVA,J2ME,JAVA CARD 4.3 Understanding of Mobile operating system 4.4 Palm OS,Windows CE, 4.5 Symbian, Linux	9

5	5.0 CDMA technology 5.1 Spread spectrum technology 5.2 Architecture 5.3 Speech and channel coding 5.4 Channel structure 5.5 Call processing 5.6 Channel capacity 5.7 CDMA vs. GSM	9
	Total	42

Laboratory Experiences:

1. To understand architecture of Mobile computing
2. To setup wireless LAN.
3. To understand mobile transport layer.
4. To understand mobile network layer.
5. To understand Mobile languages
6. To understand Mobile operating systems
7. To study call processing in CDMA mobile technology.

Reference Books:

- | | | |
|---------------------------------|----------------------------|---------------|
| 1. Mobile Computing: | by Asoke K Talukder | TMH |
| 2. Mobile communication: | by Rappaport | PHI |
| 3. Mobile Computing: | by Raj Kamal | OXFORD |

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER- VI

Subject Code : 361607

Subject Name: COMPUTER LOGIC DESIGN (Elective-II)

Sr. No.	Subject Content	Hrs.
1	1.0 Register Transfer Logic 1.1 Basic components of Register Transfer Logic 1.2 Interregister Transfer (Bus Transfer and Memory Transfer) 1.3 Arithmetic Microoperations 1.4 Logic Microoperations 1.5 Shift Microoperations (Logic , Arithmetic and circular shift) 1.6 Decimal Data, Floating point Data, Nonnumeric Data	4
2	2.0 Basic Computer design 2.1 Instruction codes and instruction code formats 2.2 Basic computer registers 2.3 Classification of computer instructions 2.4 Hard- wired control & microprogrammed control comparison 2.5 Execution of instruction (Opcode fetch, Memory R/W and I/O R/W) 2.6 Design of a simple computer	6
3	3.0 Processor Logic Design 3.1 Processor and Bus organization 3.2 Accumulator register 3.3 Arithmetic logic unit and its design 3.4 Design of 4 bit adder / subtractor 3.5 Design of accumulator	6
4	4.0 Control Logic Design 4.1 Control organization 4.2 Sequence register and decoder method	8

	4.3 PLA control 4.4 Microprogram control 4.5 Design of hard wired control 4.6 Microprogram sequence organization 4.7 Microprogrammed CPU organization	
5	5.0 Computer Design 5.1 System configuration 5.2 Computer Instructions 5.3 Timing and Control 5.4 Design of control (Hard wired control and PLA control) 5.5 Microprogram control for computer 5.6 Computer Console	8
6	6.0 Advance Processors 6.1 Pentium Processor 6.2 Pentium architecture, Pentium Real mode 6.3 Pentium RISC features and super scalar architecture 6.4 Pipelining, instruction, branch prediction 6.5 Pentium Pro processor architecture 6.6 Pentium MMX architecture 6.7 Core- 2 Duo Features 6.8 Concept of RISC and comparison of RISC - CISC	10
	Total	42

NOTE:- Following are the minimum experiences required, but the college can do more experiences if possible.

Laboratory Experiences:

1. To Understand Register Transfer Logic
2. To understand Arithmetic Microoperations
3. To understand Logic Microoperations
4. To understand Shift Microoperations
5. To understand and design of simple computer
6. To design an accumulator
7. To design 4 bit adder
8. To design 4 bit subtractor
9. To understand PLA Control
10. To understand microprogrammed CPU organization
11. To understand computer consol
12. To study advanced processors

Reference Books:

1. Digital Logic and Computer Design By Morris Mano PHI
2. Computer System Architecture - By M. Morris Mano , PHI.
2. Computer Organization -By Carl Hamacher , McGraw Hill
3. The Intel Microprocessors (Eight Editions): Barry B. Brey, Pub: Pearson (Prentice Hall).
4. Advance Microprocessor - Deniel Tabak, TMH.

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER- VI

Subject Code : 360708

Subject Name: **NETWORK OPERATING SYSTEM**

Note : **Common Elective Subject with Diploma Computer Engg.**

Sr. No.	Subject Content	Hrs.
1	1.0 TRADITIONAL SERVICES OF A NOS 1.1. File and Resource sharing 1.2. Configurability and usability 1.3. BANYAN Network system 1.3.1 Services and applications 1.3.2 VINES supported standards 1.4. Novell Netware 1.4.1 Features of network 1.4.2 Novel services- Directory, Security, Data base, Messaging, print 1.4.3 Netware Loadable Modules(NLM) 1.4.4 Netware Supported Standards 1.4.5 Strength and weakness of Netware 1.5. Microsoft Windows NT 1.5.1 Features. 1.5.2 Supported standards, Security 1.5.3 Strength and weakness of Windows NT	5
2	2.0 NETWORK ADMINISTRATION 2.1. What is Network Administration? 2.2. Managing Network Account. 2.2.1. -Managing and Creating 2.2.1.1.--User accounts 2.2.1.2.--Group Accounts and Built in group accounts 2.3. Managing Resources 2.3.1. -Hardware,Disk,Files and directories, software installation/upgrade 2.3.2. -E-mail application and Network printing. 2.4. Management Tools 2.4.1. -User manager for Domains 2.4.2. -Server manager 2.4.3. -Event Viewer	10

	<ul style="list-style-type: none"> 2.4.4. -Network Client Administrator 2.5. Managing Network Performance <ul style="list-style-type: none"> 2.5.1. -Potential Network Performance Problem 2.5.2. -Physical layer issue <ul style="list-style-type: none"> 2.5.2.1.--Exceeding Media Limitations 2.5.2.2.--Interference 2.5.2.3.--Wear and Tear 2.6. Network Traffic Issue <ul style="list-style-type: none"> 2.6.1. -Network Collisions 2.6.2. -Inefficient Network Protocols 2.6.3. -Hardware Overload 2.6.4. -Poorly implemented network Stacks 2.6.5. -Garbage 2.6.6. -Denial – of – Service attacks 2.6.7. -Address resolution problem 2.6.8. -Internetworking issues 2.7. Tools and techniques <ul style="list-style-type: none"> 2.7.1. -Ping,traceroute 2.8. NT performance monitor 2.9. Network analysers 2.10. Hardware trouble shooting 	
3	3.0 PROTECTING THE NETWORK <ul style="list-style-type: none"> 3.1. -Ensuring data integrity 3.2. -Protecting the O.S. 3.3. -Installation <ul style="list-style-type: none"> 3.3.1. --File systems 3.3.2. --Back up domain controller 3.4. -Maintenance Techniques <ul style="list-style-type: none"> 3.4.1. --Boot disks 3.4.2. --NT boot floppy 3.4.3. --Emergency Repair disk 3.5. -Disk administrator , Service packs 3.6. -Protecting your hardware 3.7. -Protecting user data 	5
4	4.0 PLANNING NETWORK AND DATA SECURITY <ul style="list-style-type: none"> 4.1. -Security policies 4.2. -Work group ,Domain and Trust 4.3. -Domain models 4.4. -Security in Windows 95/98 and NT 4.5. -Auditing 4.6. -Diskless workstations 4.7. -Encryption , Virus shields 	5

5	5.0 NETWORK DIRECTORY SERVICES 5.1. -Purpose of Network directory 5.2. -Directory frame work – Scope , structure, presentation 5.3. -Network directory special features 5.4. -Network name Resolution – DNS,nameservers,Resolvers 5.5. -Database replication and management 5.6. -WINS 5.7. -SAP 5.8. -Authentication Process 5.9. -Trust relationship 5.10. -Active Directory Services (ADS)	6
6	6.0 TROUBLE SHOOTING AND PREVENTING PROBLEMS 6.1. -Proactive Network Control operation 6.2. -Proactive Network disaster operation 6.3. -Logical fault isolation 6.4. -Common Networking problems	5
7	7.0 REMOTE ACCESS SERVICES 7.1. -Introduction 7.2. -Remote connection setup 7.3. -RAS protocols 7.4. -RAS transport services 7.5. -NOS and RAS capabilities 7.6 -RAS security	6
	TOTAL	42

NOTE:- Following are the minimum experiences required, but the college can do more experiences if possible.

Laboratory Experiences:	Hrs.
1. Installation of NOS Server.	2
2. Installation of NOS Client	2
3. Configuration of network environment	4
4. Managing system policy and file systems	4
5. Creating and managing partitions	2
6. Creating users accounts	2
7. Creating group accounts	2
8. Managing hardware resources --Printer, Modem, CD Drive etc.	2
9. Managing software resources -- Installation and Updation of Softwares	2

10. Configuration of clients	2
11. Any other practical based on syllabus.	4

Total	28

Reference Books:

1. Peter Norton's Complete guide to Networking -Peter Norton & Dave
Kearns Pub. Sams Techmedia
2. NT Server 4 Study Guide - Matthew strobe & Charles Perkins Pub. BPB
3. Using Windows NT Server 4 - Roger Jennings 2nd Ed. Special edition
Pub. PHI

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER- VI

Subject Code : 361608

Subject Name: PROJECT

Sr.No.	Subject content	Hrs.
1	1.0 Guidelines: <ul style="list-style-type: none">Fifth semester Project can be extended in 6th semester.	5
2	2.0 Analysis: <ul style="list-style-type: none">Explain in detail any relationship between the system you intend to produce and the existing manual system.Identify user requirements for the project .	15
3	3.0 Design: <ul style="list-style-type: none">Design must include all the requirements gathered in analysis phase.	15
4	4.0 Implementation: <ul style="list-style-type: none">Facilities specified in design phase of the software and the hardware must be exploited.	25
5	5.0 Testing: <ul style="list-style-type: none">Different test cases must be implemented for the designed software/system.	10
6	6.0 Documentation: <ul style="list-style-type: none">The student should prepare project report and submit it. The documentation should include below mentioned topics in given sequence.	14
	Total	84