

SARDAR PATEL UNIVERSITY
C.P.PATEL & F.H.SHAH COMMERCE COLLEGE
B.Voc
Software Development

YEAR III

	CODE	TITLE	NO. OF CREDITS	TOTAL (HRS.)
General Education	US05FBVS01	Software Engineering	3	45
	US05FBVS02	Data Communication and Networking	3	45
	US05FBVS03	Communication Skills-V	3	45
	US05FBVS04	Organizational Development	3	45
Skill Component	US05CBVS01	Visual Programming	3	45
	US05CBVS02	Advanced RDBMS	3	45
	US05CBVS03	Practicals-9	6	90
	US05CBVS04	Practicals-10	6	90
Total Credits			30	450

BVoc – Semester V

Course : Practicals-9
Code: US05CBVS03

Credits : 6
Laboratory hours per week : 6

- Practical based on Visual Programming

BVoc – Semester V

Course : Practicals-10
Code: US05CBVS04

Credits : 6
Laboratory hours per week : 6

- Practical based on Advanced RDBMS

BVoc – Semester V

Course :-Communication Skills-V
Code: US05FBVS03

Credits : 3
Lectures per week : 3
All units carry equal weightage.

Unit:-1 Interpersonal skills

- Assertiveness , stress management, time management
- team development Skills i.e. team talk dynamics,
- communication in teams
- leadership skills
- giving feedback

Unit:-2 Attitude and emotional intelligence

- Importance of Attitude,
- Meaning of positive thinking and positive attitude
- Ways to build positive attitude,
- effects of negative attitude and measures to overcome in personal & professional life

Unit:-3 Vision, Goal setting & Time management:-

- Meaning of vision
- Doing things for the right purpose
- Setting and achieving goals
- Importance of goal setting
- Methods to achieve set goals
- General principles of stress management and time management

Unit:-4 Career planning :-

- Career of planning
- Awareness of different
- Sources of information
- Choosing a career and career counseling.

MAIN REFERENCE BOOKS :

1. Rajendra Pal and J S Korlahalli, Essentials of Business Communication, Sultan Chand & sons
2. www.britishcouncil.com
3. Chrissie Wright, Communication Skills, Jaico Publication
4. Sunita Mishra and C.Murali Krishna, Communication Skills for Engineers, Pearson Education
5. Meenakshi Raman & Sangita Sharma, Technical Communication; Principles and Practice , Oxford University Press
6. On We Go, BBC's audio-visual course

BVoc – Semester V

Course : Advanced RDBMS

Code: US05CBVS02

Credits : 3

Lectures per week : 3

All units carry equal weightage.

Unit 1: Relational Database Design

- Consequences of poor database design
- The process of database normalization
- Functional dependencies
- Lossless joins and dependency preservation
- 1NF, 2NF, 3NF, BCNF

Unit 2: Basics of PL/SQL

- PL/SQL - Introduction and advantages
- Understanding PL/SQL Block structure
- Fundamentals of PL/SQL Language - data types (BOOLEAN, CHAR, NUMBER, DATE, VARCHAR2), variables, constants and expressions (CASE expression)
- Operators
- Conditional statement – IF and CASE statements
- Controlling loop iterations – LOOP, EXIT, EXITWHEN, WHILE, FOR
- Sequential control statement – GOTO and NULL

Unit 3: Cursors and Exception Handling

- SELECT..INTO statement
- Working with cursor : introduction, types, attributes and processing (i.e.declaring, opening, fetching and closing), using parameterized cursor, using cursor FOR loop
- Error Handling : introduction, advantages of exceptions, types of exceptions
- Working with user-defined exceptions – declaration, Raise_Application_Error, Pragma Exception_Init, Sqlcode And Sqlerrm

Unit 4: Stored Subprograms, Database Triggers and Packages

- Stored procedures – introduction, creating, modifying, executing and dropping procedures
- Stored functions – introduction, creating, modifying, executing and dropping Functions
- Database triggers – introduction, creating, modifying and dropping triggers, types of triggers
- Packages – meaning, advantages, creating, modifying and dropping

Basic Text & Reference Books :-

An introduction to Database Systems : Bipin C. Desai, Galgotia Publications Pvt. Ltd.

Ivan Bayross : SQL, PL/SQL The programming language of Oracle, 3rd revised edition, BPB Publications

Kevin Loney, George Koch, Oracle9i The Complete Reference , Oracle Press

Buluku Lakshman : Oracle9i PL/SQL : A developer's guide, Apress, edition 2003

BVoc – Semester V

Course : Visual Programming

Code: US05CBVS01

Credits : 3

Lectures per week : 3

All units carry equal weightage.

Unit 1: Introduction to .NET Framework and VB.NET

- .NET Architecture, .NET Languages, Microsoft Intermediate Language (MSIL), The Just-In-Time (JIT) compiler, Working with Assemblies, The .NET framework class library
- VB.NET - introduction, applications and types of project
- Introduction to Visual Studio IDE
- Creating simple Windows Application using VB.NET
- Variables, data types, constants and operators
- Type casting, Boxing and Unboxing,
- Working with arrays and strings
- Creating simple Windows Application using VB.NET

Unit 2: VB.NET Basics

- Use of conditional statement (if), multibranching statement (select) and With...EndWith statement,
- Looping Statement: DO, FOR, FOR EACH..NEXT and WHILE, Working with EXIT, CONTINUE and WITH statements
- Working with procedures – introduction, types, use of parameters, parameter passing, calling procedures
- OOP concepts - Encapsulation, Inheritance, Interfaces and Polymorphism
- Working with modules, classes (partial) and namespaces
- Working with Windows Forms – introduction, life cycle, basic properties, methods and events, use of simple windows forms control.
- Working with SDI and MDI forms

Unit 3: Developing Windows Forms, Exception Handling

- Working with basic controls – Button, CheckBox, CheckedListBox, ComboBox, DateTimePicker, GroupBox, HScrollBar, RadioButton, VscrollBar, Label, ListBox, PictureBox, TextBox and Time controls.
- Working with advanced controls – LinkLabel, RichTextBox, ColorDialog, FontDialog, TreeView, Working with modules, classes (partial) and namespaces
- Error Handling: exception, structured exception using try...catch and final statement

Unit 4: Persisting Data Using Databases and Files

- ADO.NET – introduction and applications
- ADO.NET – architecture (connected and disconnected)
- Database connectivity using ADO.NET
- Use of Data sources, Server Explorer and working with DataSet
- Populating data in a DataGridView,
- Working with files

MAIN REFERENCE BOOKS :

1. Steven Holzner; VB.NET Black Book by Dreamtech publication
2. Francesco Balena : Programming Microsoft Visual Basic.NET, Microsoft Press
3. Bill Eyjen, Billy Hollis, Bill Sheldon, Kent Sharkey and Tim McCarthy : Professional VB 2005 with .NET 3.0

BVoc – Semester V

Course : Data Communication and Networking

Code: US05FBVS02

Credits : 3

Lectures per week : 3

All units carry equal weightage.

Unit 1: Introduction

- Computer networks : definition and advantages
- Classification of computer networks
- Introduction and differences among Local Area Networks (LANs), Metropolitan Area Networks (MANs), Wide Area Networks (WANs)
- Uses of Computer Networks
- Meaning of the basic terms : topology, data rate, modulation rate, spectrum, bandwidth, server, host

Unit 2: Data Communication Fundamentals

- Various types of transmission media - guided transmission media : magnetic media, twisted pair, coaxial cables, fiber optics
- Introduction to the concept of modulation, types of modulation, serial transmission vs. parallel transmission, synchronous transmission v/s asynchronous transmission, circuit switching, packet switching
- The concept of multiplexing, Frequency Division Multiplexing (FDM) vs. Time Division Multiplexing (TDM)

Unit 3: Layered Protocols and Satellite Communication

- Protocol significance and hierarchies
- Design issues for the layers
- The OSI Reference model
- Examples of protocols for different layers of the OSI model
- Introduction to wireless networks
- Communication satellites
- Introduction to geosynchronous satellites

Unit 4: Local Area Network Technology and Networking Devices

- Types and characteristics of Local Area Networks
- LAN Topologies : Bus, Star, Ring, Tree, Complete (Mesh)
- Introduction to Carrier Sense Multiple Access (CSMA) protocol for LAN
- functions of various networking components : modems, amplifiers, repeaters, hubs, switches, bridges, routers, gateway

MAIN REFERENCE BOOKS :

1. Behrouz Forouzan, Introduction to Data Communications and Networking, Tata McGraw-Hill Publishing Co. Ltd., New Delhi, 1998.
2. Tanenbaum A. S., Computer Networks, Prentice-Hall of India Pvt. Ltd., New Delhi, 1997.
3. Stallings W., Data and Computer Communications, 3rd Edition, Macmillan Pub. Company, New York, 1991.

BVoc – Semester V

Course : Software Engineering

Code: US05FBVS01

Credits : 3

Lectures per week : 3

All units carry equal weightage.

Unit – 1 :- Introduction to Software Engineering

- Introduction to Software and Software Engineering
- The Evolving Role of Software
- Software Process characteristics
- Software development Phases
- Effort and Error Distribution
- Process Models (Waterfall, Prototype, Iterative enhancement, spiral)
- Software metrics (introduction, product metrics, process metrics)

Unit – 2 :- Requirement Specification and Project Planning

- Software Requirement Specification (SRS) and Needs of SRS
- Problem Analysis - Structuring Information
- UML Introduction
- SRS : Characteristics and Components
Specification language (Structured English, Regular Expression and Decision Table)
- SRS : Structure and Validation
- Introduction: Software Projects, Planning, Categories of Software projects
- Overview of Cost estimation, Uncertainty in cost estimation, size estimation,
COCOMO Model (with example)
- Project Monitoring Plan : Time sheets, Reviews, Cost- schedule milestone and
Earned value method
- Software Quality Assurance Plans (SQAP)
- Overview of Risk Management

Unit – 3 : Software Designing Concepts

- System Design - introduction
- Design Objectives and Principles
- Design Concepts - Top down and Bottom up approach, Problem Partition,
Abstraction, Modularity, Module Level concept, Coupling, Cohesion
- Overview of structured design
- Function v/s Object Oriented approach
- Design Specification, Verification
- Introduction: Detailed Design
- Module Specification, Desirable properties, functional module specification,
Data abstraction specification
- PDL, Logic/ Algorithm Design
- Design Verification – Design Walkthrough, Critical
Design review,
Consistency checkers

4. Coding and Testing

- Introduction: Coding, Top Down and Bottom Up approach for coding
- Structured programming, Information Hiding
- Programming style, Internal documentation
- Verification (code reading)
- Introduction : Testing, Error, Fault, Failure & Reliability
- Testing process, Top down and bottom up approach for testing
- Levels of Testing

– Functional Testing v/s. Structural testing

MAIN REFERENCE BOOKS :

1. S. Parthasarthy & B. W. Khalkar : System Analysis & Design, 1st Edition, Master Ed. Cons., Nashik .
2. James A. Senn : Analysis & Design of Information System 2nd Edition, McGraw-Hill International
3. An Integrated Approach to Software Engineering : By Pankaj Jalote, Narosa Publishing House, Second Edition, 1997

BVoc – Semester V

Course : Organizational Development
Code: US05FBVS04

Credits : 3
Lectures per week : 3
All units carry equal weightage.

Unit 1: ORGANISATION DEVELOPMENT

- Concept, Organization Development & Management development, features & Objectives of organization Development, Values of Organization Development, process of organization development.

Unit 2: TECHNIQUES OF ORGANISATIONAL DEVELOPMENT

- Sensitive training, Managerial Grid, Survey feedback, Process of consultation, system for Management and Management by Objectives.

Unit 3: ORGANIZATIONAL CHANGE

- Meaning, Nature, Reasons for organizational Change, Factors in organizational change
- Planned Change: Meaning, Factors in planned Change, Objectives of planned change and process of planned change.

Unit 4: ORGANIZATIONAL EFFECTIVENESS

- Concept, Approaches to measure effectiveness, Goal approach, Behavioural approach, system-resource approach strategic constituencies approach. Criteria for Organizational Effectiveness.

Basic Text & Reference Books :-

Organizational Behavior: L. M. Prasad

Organizational Behavior: K Ashwathapa

Human Resource Management L. M. Prasad

Principles and practice of Management: S Sachdeva Management: Theory & Practice : C. B. Gupta