MCA Program Structure and Credits Mapping :

					Marks		
Semester	Course Code	Paper	Credit	Contact Hours	Internal	External	Total
1	DCA – 501	Business Communication Skills	4	12	30	70	100
1	DCA – 502	C-programing	4	12	30	70	100
1	DCA – 503	Software Engineering	3	9	30	70	100
1	DCA – 504	Fundamentals Of Computers	4	12	30	70	100
1	DCA – 505	Discrete Mathematics	2	6	30	70	100
1	DCA – 506	Lab - C Programming	1	3	30	70	100
2	DCA – 507	Database Management System	4	12	30	70	100
2	DCA – 508	M.I.S.& BUSINESS Intelligence	3	9	30	70	100
2	DCA – 509	Operating System Concepts	3	9	30	70	100
2	DCA – 510	Object Oriented Prog With C++	3	9	30	70	100
2	DCA – 511	Enterprise Resource Planning	4	12	30	70	100
2	DCA – 512	Lab - Object Oriented Prog With C++	1	3	30	70	100
3	DCA – 513	Advance Database Management System	3	9	30	70	100
3	DCA – 514	Data Communication & Computer Network	3	9	30	70	100
3	DCA – 515	Data Structure Using C++	3	9	30	70	100
3	DCA – 516	Object Oriented Analysis & Design	4	12	30	70	100
3	DCA – 517	Web Technologies	3	9	30	70	100
3	DCA – 518	Lab - Data Structure Using C++	2	6	30	70	100
4	DCA – 519	Design & Analysis Of Algorithm	4	12	30	70	100
4	DCA – 520	Information Security & Audit	4	12	30	70	100
4	DCA – 521	Java Programming	4	12	30	70	100
4	DCA – 522	Mobile Computing	1	3	30	70	100
4	DCA – 523	Optimization Technique	4	12	30	70	100
4	DCA – 524	Lab - Java Programming	1	3	30	70	100
5	DCA – 525	Software Project Management	4	12	30	70	100
5	DCA – 526	Advance Development Technology	4	12	30	70	100
5	DCA – 527	Advanced Internet Technologies	6	18	30	70	100
5	DCA – 528	Software Testing & Quality Assurance	4	12	30	70	100
5	DCA – 529	Current/Emerging Trends in Information Technology	4	12	30	70	100
5	DCA – 530	Lab-Advanced Internet Technologies	1	3	30	70	100
6	DCA – 531	Project	16	48	30	70	100

* One Credit of Lab Course would have 30 hours of lab based practical. Similarly project work would need 30 hours of project based activities for project preparation.

Year 1: Syllabus

Business Communication Skills

Chapter 1 -Attitudes

Introduction : Concept - Types of Attitude: (Positive VS Negative Attitude, Winning VS Losing Attitude) - Formation of Attitude - Importance of Positive Attitude: Benefits of Individuals, Benefits of Organizations - Steps in developing positive Attitude: Building Congnitive Component, Building affective Component, Behavioral Component - Summary - Self Assessment Questions

Chapter 2-Goal Setting

Introduction - Concept of Goals - Goals and Periodicity - Characteristics of Goals: Objectives are Futuristic, Objectives are Concrete, Objectives are Attainable, Objectives are Measurable, Objectives should be Acceptable, Guidelines to Personality Development - Importance of Goals - Significance of Goal setting: Goal setting is a basic function of Management, Goal setting replaces hunches by Judgment, Goal setting involves rational processes, Goal setting involves balancing - Activity in Goal Setting - Common Obstacles to Goal Achievement - Methods of Achieve set goals: Work Planning, Progress chasing, Performance Enhancing - Summary - Self Assessment Questions

Chapter 3 - Time Management

Introduction - Importance of Time: Survival of the Fastest, Chance of Recovery, Time impacts Health, Prerequisite for success - Techniques of Time Management - Priorization of activities: The 80/20 Role, Goals and Tasks Analysis, Set Goals, Identify tasks, Identifing your strenght and weaknesses, Ways of Organizing Work, Scheduling, Weekly Activity descriptions and times - Avoiding Time waters: Process Related Factors, Procrastination, perfectionism, Lack of Self-discipline, Crisis Management, Interruptions - Summary - Self Assessment Questions.

Chapter 4 -Enhancing Creativity

Introduction - Creative Mind - Elements of Creativity: Curiosity, Imaginativness, Flexibility, Originality - Factors Influencing Creativity: Stimulating factors, Facilitating Factors - Influence of flexibility - Methods of Enhancing creativity: Thinking Process, Mind Developing Methods, Meditation, Self-Awareness, Light-heartedness, Dreams, Tips to Enhance Creativity - Summary - Self Assessment Questions

Chapter 5 -Creative Problem Solving

Introduction - Creative Problem solving - Techniques of creativity: Brainstroming : Attributes Listing - Ideas in creative problem solving: Idea generation, Idea screening, Rough-cut business evaluation, The idea funnel, Stage-gate systems, Idea Development, Idea Evaluation , Beware of Idea killers - Summary - Self Assessment Questions

Chapter 6 -Stress Management

Introduction - Definitions: Dynamic Condition, Desire, Opportunity, constraint or demand, Important but uncertain outcome - Types of Stress: High Stress, Moderate Stress, Low or Mild stress, Distress, Eustress - Linkage between Stress and Time Management - Stress levels and Consequences: General Consequences for the individuals, Consequences for the Organization, Consequences for the Family - Sources of Stress - Stress Coping Ability: Stress Threshold, Stress Resiliency - Measures to Manage Stress - Principles of Stress Management - Summary - Self Assessment Questions

Chapter 7- Communication Skills

Introduction - Definition of Communication - Significance - Disasters of Non-communication - Communication Gap: Gender Gap, Psychological Gap, Generation Gap, Spatial Gap, Cultural Gap, Knowledge Gap, Status Gap, Credibility Gap - Communication Skills - Summary - Self Assessment Questions

Chapter 8- Process of Communication

Introduction - Process of Communication: Action Model/ Bull's-eye Theory, Interaction Model/ Ping-Pong Theory - Feedback - Key for Effective Communication - Guidelines to effective communication - Forms of Communication: Communication Media, Oral Communication, Written (Print) Communication, Nonverbal Communication - Summary - Self Assessment Questions

Chapter 9 -Listening Skills

Introduction - Concept of Listening - Significance of Listening - Types of Listening: Active Listening, Inactive Listening, Attentive Listening, Appreciative Listening, Empathetic Listening, Sympathetic Listening, Inattentive Listening - Listening Skills - Active and Attentive Listening: Processing Strategies, Bottom-up Processing, Top-down Processing, Barriers, Guides to Effective Listening - Benefits of Listening - Summary - Self Assessment Questions

Chapter 10- Body Language

Introduction - Concept of Body Language - Effects of Right Body Language - Postures and Meanings - Right Posture - its Importance - Summary - Self Assessment Questions

C-Programming

Chapter 1.An Overview of C

Structure:-History, Developing of C, Where C Stands?, Program Developing Cycle, The Form of a C Program, Structure of a 'C' Program, Compilers and Interpreters, Executing A 'C' Program

Chapter 2.Variable, Data Types, Operator And Expression

Structure:- Introduction, Character Set, C Tokens , Data Types in c, Variables, Data Declaration and Definitions, User Defined Type Declaration, Operation and Expressions, Type Conversation in Expressions, Precedence and Associativity of Operators

Chapter 3.Built In I/O Functions

Structure:- Introduction, Unformatted Console I/O Operations, Formatted Console I/O Operations

Chapter 4.Control Statement

Structure:-Introduction, Selection/Decision Making Statements, Iterative Statements, Jump Statements, Compound Statement, Null Statement

Chapter 5.Array And String

Structure:-Introduction, Array Declaration, One Dimensional Array, Multidimensional Arrays, Strings

Chapter 6.Pointers

Structure:-Introduction, Memory Organization, Basic of Pointers, Application of Pointers, Using pointers, Pointers Expression, Precedence of & AND * Operators, Pointer to pointer, Pointers to Constant Objects, Constant Pointer, Dyanamic Memory Allocation, Pointer and Arrays, Pointers and Character String, Array of Pointers

Chapter 7.Function

Structure:-Introduction, What is a Function?, Functions and Structured Programming, How a Function Works?, Library and User Defined Functions, Function Declaration and Definition , Writing a Function, Calling a Function , Types of Functions, Methods of passing Arguments, Arrays and Functions, Pointers and Function, Recursion

Chapter 8.Storage Classes And Scope

Structure:-Meaning of Terms, Scope, Storage Classes

Chapter 9.Structurev, Union, Enumeration And typedef

Structure:-Structures, Structures and Enumerated Data Type, Union, Differnce between Structure and Union

Chapter 10.C Preprocessor

Structure:-What is a Preprocessor?, Preprocess Directives

Chapter 11.File Handling

Structure:-Introduction, Stream, Types of Files, Operation on a File, Error Handling during I/O Operations, Random Access to Files

Chapter 12.Bitwise Operators

Structure:-Introduction, Application, Bit Fields

Chapter 13.Graphic In C

Structure:-Introduction, Basic Concepts, Drawing Simple Graphic Objects, Output Text

Chapter 14.Command Line Arguments

Structure:-Introduction, Advantages of Command Line Arguments

Discrete Mathematics

Chapter 1:-Mathematical Logic

Structure:-1.Introduction, Connection, Implication, Propositional Equivalences, Tautological Implication, Normal Forms, Theory of Interence for Statement Calculus, Predicate Calculus

Chapter 3:-Permulations and Combination

Structure:-Introduction, Principles of Counting, Permulations, Combination

Chapter 4:-Number of Non-Negative Integer Solutions

Structure:- Introduction, Integer Solution of Linear Equation, Binomial identities

Chapter 5:-Principles of Inclusion and Exclusion

Structure:- Introduction, Principle of Inclusion and Exclusion, Derangements

Chapter 6:-Algebraic Structures

Structure:-Introduction, Algebraic System, Groups Permutation, Subgroups , Group Code, Decoding

Fundamental of Computer

Chapter-1.Introduction to Digital Computer

Structure-Introduction, Digital Computer, Layers in Modern Computer, Types of Software, Programming Languages Software

Chapter-2.Data Representation and Boolean Algebra

Structure-Introduction, Decimal Number System, Binary Number System, Octal Number System, Hexadecimal Number System , Signed Binary Numbers, Binary Arithmetic, Digital Codes, Logic gates, De Morgans's Theorems, Duality Theorem, Boolean Algebra Rules and Laws, Standard (canonical) Representations for Logical Functions (SOP AND POS), K-Map

Chapter-3.Combinational Circuits and Sequential Circuits

Structure-Introduction, Adders, Encoder, Decoder, Multiplexer, Demultiplexer, Sequential Circuits, Flip Flops, Shift Registers, Introduction to Counters

Chapter-4.Memory System

Structure-Introduction, Classfication of Memory, Memory Hierachy, Primary Memory, ROM, Cache Memory, DMA (Direct Memory Access)

Chapter-5.CPU Organization

Structure-Introduction, CPU building blocks, CPU Registers and Bus Characteristics, Interface, Local Bus, Addressing Modes, Interrupts, Instruction and Execution cycle, Hardwired and Micro Program control, RISC and CISC, Pipelining:Data path, Time Space Diagram, Hazards

Software Engineering

Chapter 1.Overview of System Analysis and Design

Structure:-System Concepts, Categories of Information System, Software development Life Cycle(SDLC), Different Approaches and Models for System, The Role and Task of System Analyst, Skills required for a Good Software Analyst

Chapter 2.Software Requirement Specifiaction Technique

Structure:Activities in Requirement Determination, Requirement Anticipation , Requirement Investigation, Requirement Specification, Solved Cases Study

Chapter 3.Information Requirement Analysis

Structure:-Decision Analysis Tools, Functional Decomposition Diagram(FDD), Process Modeling with Data Flow Diagrams, Entity Relationship Diagram:Identify Entity and Relationship, Data Dictionary, Solved Case Study

Chapter 4:-Designing of Input, Output and Program

Structure:-System Design, Design of Input and Control, Design of Output, User Interface Design, Design of program Specifications, Solved Case Study

Chapter 5:-Maintaining

Structure:-Introduction, Why We Need Software maintence, Types of Maintenance, Maintainance Cost, Introduction to Legacy, Reverse Engineering, Documentation

Chapter 6:-Case Tools

Structure:-Introduction to Case Tools, Types of CASE Tools, Advantages and Disadvantages of Case Tools

Chapter 7:-Current Trends in Software Engineering

Structure:-Introduction, Software Enginnering for Projects and Products, Web Enginnering, Agile Process

Database Management System

Chapter -1 Basic Concept

Structure:-Database and Database User, Data Independance

Chapter-2 Database Design Using ER Model

Structure:-Data Models, ER Model for Conceptual Design, Relationships, Relationship Sets, Mapping Cardinalities, Types of Keys, ER-Diagram

Chapter-3 Relational Model

Structure:-Relational Data Model, Relational Algebra, SQL-A Relational Database Language, Indexing, Views, Security in SQL, Triggers

Chapter-4 Conventional Data Models and Systems

Structure:-Networks Data Models and IDMS System, Hierachical Data Model

Chapter 5-Relational Database

Structure:-Introduction , Function Dependencies , Undersirable Properties of A Bad Database Design, E.F Codds Rules, Steps Followed By Application Developer, Normalization Process, Denormalisation, Loseless Joins, Decompositions

Chapter 6-Storage and File Structure

Structure-Introduction, Overview of Physical Storage Media, Magnetic Disks, Raid, Tertiary Storage, Storage Access, Organization of Records in Files, Data Dictionary Storage, Factors Used for Evaluation of The Above Techniques

Chapter 7-Transaction and Concurrency Contro

Structure-Concept of Transaction, Properties of Trasaction , State of Transaction Implementation of Atomicity and Durability, Concurrency Executions, Concurrency Control Techniques, Concurrency Control

Chapter 8-Crash Recovery and Backup

Structure-Why Recover IS Needed?, Storage Structure, Recovery and Atomicity, Failure With Loss of Nonvolaties Storages, Recovery and Atomicity, Failure with Loss of Nonvilatile Storage, Recovery From Catastrophic Failure, Remote Backup Systems

Chapter 9-Security and Privacy

Structure-Introduction, Discretionary Access Control Method , Mandatory Access Control Method, Uses of View in Security Enforcement , Overview Of Encryption Technique for database

Chapter 10-NON-SQL Database

Structure-A Relational Database Management System, NoSQL Emerged From a Need, What is NoSQL

ENTERPRISE RESOURCE PLANNING

CHAPTER-1.Enterprise Resource Planning

Structure-Introduction, What is ERP?, Need of ERP, Advantages of ERP, Disadvantages of ERP, Benefit of ERP, Limitation, Growth of ERP

CHAPTER-2.ERP and Related Technologies

Structure-Business Process Re-Engineering (BPR), Management Information System (MIS), Decision Support System (DSS), Executive Support System(ESS), Data Warehouse , Data Mining, On-Line Analytical Processing(OLAP), Supply Chain Management(SCM), Customer Relationship Management (CRM)

CHAPTER-3.RRP Modules and Vendors

Structure:RRP Modules, RRP Modules for Finance, RRP Modules for Production Planning, Control and Management, RRP Modules for Sales and Distribution, RRP Modules for Human Resource management, RRP Modules for Inventory Control System, RRP Modules for Quality Management, RRP Market, Disadvantages of Non-ERP System, Benefits of Integration, Standardization of Data code

CHAPTER-4 ERP Implementation Life Cycle

Structure:-ERP Implementation Life Cycle, Role of Organization Management

CHAPTER-5.ERP Case Studies

Structure:-Post Implementation Review, ERP Case Study, ERP Demo Tool: ERP Next, ERP Next Demo, Customization

Management Information System and Business Intelligence

Chapter-1.System and Information Concepts

Structure-General System Model, Types of Systems, Subsystems, Feedback Control, Organizational Structure and Function, System Approach to Organization, Law of Requisite Variety, Control by Exception, Information Concepts, Quality of Information

Chapter-2.Management Information System

Structure-Meaning and Definitions, Role of MIS, MIS and Other Academic Disciplines, Structure of MIS based on Management Activity and Functions, Systems Concept Of MIS

Chapter-3.Decision Making Systems, Modelling and Analysis

Structure-Decision Making Definition and Concept, Phases of Decision Making Process, Modelling Process, Static and Dynamic Models, Sensitivity Analysis, Heuristic Programming, Simulation

Chapter-4.Decision Support System

Structure -Definition of Decision Support System, Characteristics and Capabilities of DSS, Application of DSS, Case:Google Analytic

Chapter-5.Expert System

Structure-Basic Concepts of Expert System, Expert System Architecture, How Expert Systems Work, Expert System Applications, Comparison, Mycin:Case Study

Chapter-6.Executive Information and Support Systems

Structure-Enterprise and Executive Information System -Concept and Definition, Enterprise and Executive Support System-Concept and Definition, Need for Executive Information Systems, Characteristics of Executive Information Systems, Integrated EIS and DSS, EIS Implementation

Chapter-7.Business Intelligence

Structure- Problems Faced by corporate bodies, Data Mart, Data Warehousing and Mining , Data Visualization and Presentation, Designing a physical Database, Deploying and Supporting the BW/BI System, BI Architecture:Spreadsheets, OLAP, Decision Engineering, LIS, BI Tool - Concept of Dashboard, BI Applications in Various Domains, BI Analytics, Introduction to XLMiner

Object Oriented Programming C++

Chapter-1.Principle of OOP's

Structure-Introduction, What is Object Oriented Development?, Object Oriented Methodology, Overview of procedure Oriented programming, What is Object Oriented Programming?, Object Oriented Languages

Chapter-2.Basics of C++

Structure-A Brief History of C and C++, Difference between C and C++, Features of C++, Advantages and Disadvantages of C++, Applications of C++, Writing and Executing a C++ Program, Program Structure and Rules, Sample C++ Program, Comments, Return Type of MAIN(), Namespace std, Header File, Output Statement (COUT), Input Statement (CIN)

Chapter-3.Expression

Structure-Introduction, C++ Tokens, Data types , Declaration of Variables, Initialization of Variables, Reference Variables, Operators, Type Cast Operator, Memory Management operators, Expression, Statement, Symbolic Constant, Type Compatibility

Chapter-4.function in C++

structure-Introduction, Passing Information-Parameters, Default Arguments, Constant Arguments, Function Overloading, Inline Functions, Recursive Functions

Chapter-5.Classes and Objects

Structure-Introduction, Class, Member Functions, Making an Outside Function Inline, Nesting Of Member Functions , Private Member Function, Arrays within a Class, Memory Allocation for Objects, Arrays of Objects, Objects as Function Arguments, Returning Objects, Const Member Function, Static Class Members, Pointer to Members, Local classes, Friend Functions, Unions and classes, Object Composition and Delegation

Chapter-6.Constructor and Destructor

Structure-Introduction, Constructor, Multiple Constructors in a class, Constructor with Default Arguments, Dynamic Initialization of Objects, Const Object, Destructor

Chapter-7.Operator Overloading and Type Conversion

Structure-Introduction, Overloading Unary Operators, Overloading Binary Operators, Limitations of Operator Overloading, this pointer, Overloading<<and>>Operators, Manipulation of String, Types Conversion

Chapter-8.Inheritance

structure-Introduction, Single Inheritance, multiple Inheritance, Multlevel Inheritance, Hierarchical inheritance, Hybrid Inheritance, Container Classes, Virtual Base Classes, Construction in Derived classes, Virtual Function, Pure Virtual Functions, Abstract Classes

Chapter-9.The C++ I/O System Basics

Structure-Introduction, C++ Strems, C++ Stream Classes, Unformated I/O Operations, Formatted I/O Operations, Manipulators

Chapter-10.Working With Files

Structure-Introduction, Creating a Stream, Opening a File, Closing a File, Checking For Failure With File Commands, Detecting the End-of-file, file Pointers and their Manipulation, Reading/Writing a character From a File, Write()and read() Functions, Buffers and Sychronization, Other Functions, Random Access File Processing, Updating a File :Random Access, Command Line Arguments

Chapter-11.Template

Structure-Introduction, Generic Functions, A Function with Two Generic Data Types, Explicity Overloading a generic Function, Overloading Function Templates, using Standard Parameters with Template Function, Generic Functions Restrictions, Generic Class, Using Default Arguments with Template Classes, Template Parameters, Template Specialization, The Typename and Export Keywords

chapter-12.Exception Handling

Structure-Introduction, the STI Programming Models, Containers, Algorithms, Iterators, Function Objects, Allacators, Adaptors

Chapter-13.Introduction to Standard Template library

Structure-Introduction, The STL Programming Model, Containers, Algorithms, Iterators, Function Objects, Allocators, Adaptors

Chapter-14.Namespace

Structure-Introduction, Defining a Namespace, The Standard Namespace, Nested Namespace, Unnamed Namespace, Namespace Alias

Chapter-15.New Style Caste and RTRI

Structure-Introduction, New-Style Casts, Static_cast, Dynamic_cast, Const_cast, Reinterpret_cast, Run-Time Type Information(RTTI), A Simple Application of Run-Time Type ID, Typied can be applied toTemplates classes

Operating system

Chapter 1-Introduction

Structure:-Introduction, View of Operating System, View of Operating System, System Calls , System Programs, Operating System Structure, Concept of Virtual Machine

Chapter 2-Process Management

Structure:-Process Concept, Process Control Block, Process Scheduling, Process Operations, Interprocess Communication, Communication in Client-Server, RTOS(Real Time OPerating System)

Chapter 3-CPU Scheduling

Structure:-Introduction, Scheduling Concept, Cpu-I/O Burst Cycle, Scheduling Criteria, Sceduling Algorithms, Sceduling Evalution, Simulation

Chapter 4-Process Synchronization and Deadlock

Structure:-Synchronization Concept, Critical Section Problem, Monitor, Deadlock Concepts , Deadlock Prevention and Avoidance, Deadlock Detection, Deadlock Recovery

Chapter 5-Memory Management

Structure:-Concept, Memory Management Techniques, Contiguous and Non-Contiguous Allocation, Logical to Physical Address, Paging, Segment with Paging, Virtual Memory Concept, Demand Paging, Page Replacement Algorithm, Allocation of Frames, Thrashing

Chapter 6-File Management

Structure:-Introduction, File Structure, Protection, File System Implementation, Directory Structure, Free Space Management, Allocation Methods, Efficiency and Performance, Recovery, NFS and NTFS.SAMBA Concept

Chapter 7-Disk Management

Structure:-Disk Structure, Disk Scheduling Algorithm, Disk Management, Swap Space Concept and Management, RAID Structure, DIsk Performance Issues

Chapter 8-Distributed Operating System

Structure:-Introduction, Centralized Versus Distributed Processing, Advantages Of Distributed OS, Types of Distributed OS, Conceptual of Global OS, NOS Architecture

Chapter 9-Case Study of Window OS and Non-Windows OS

Structure:-An Introduction To Modern Mobile Operating Systems, Which Smartphone OS is the best?, Case Study, NON_WINDOW O.S

Year 2: Syllabus

ADVANCE DATABASE MANAGEMENT SYSTEM

CHAPTER-1.Advance Database management System -Concepts and Architectures

Structure-Centralized, Client-Server, Server System, Parallel, Distributed, Web Based Systems

CHAPTER-2.Parallel Databases

Structure-Introduction to Parallel Databases, Parallel database Architecture, Inpute-Outpute parallelism, Interquery and Intraquery parallelism,Interoperational and Intraoperational Parallelism, Design of parallel System, Parallelism on Multicore Processors

CHAPTER-3.Distributed Database

Structure-Introduction to Distributed Database, Distributed DBMS Architectures, Homogeneous and Heterogeneous Databases, Distributed Data Storage, Distributed Transactions, Commit Protocols, Availability, Cloud Based Database, Concurrency Control and Recovery in Distributed Database, Directory System

CHAPTER-4.Specialty Database and Applications

Structure-Object Oriented database - OR and OO, Temporal Database, Spatial Data and Geographic Database , Multimedia Data, Mobility and Personal Database

CHAPTER-5.Data Warehousing

Structure-Introduction to Data Warehousing, Architecture, Dimensional Data Modeling, OLAP, OLAP and Data Cubes, Data Preprocessing

CHAPTER-6.Knowledge Base System and Data Mining

Structure-Knowledge Discovery in Databases (KDD), Association Rules, Market Basket Model and Confidence, Classification, Clustering, Approaches to Other Data Mining Problems, Applications of Data Mining

CHAPTER-7.Data Exchange Through XML

Structure-Structure of XML Data, XML Schema, XML Document and Database Schema Storing and Extracting XML Document, XML Querying XML Data, Application Program Interface to XML, XML Applications

DATA COMMUNICATION AND COMPUTER NETWORKS

CHAPTER-1.Data communication Networks and Reference Models

Structure-Components of Data Communication, Network Criteria, Connection-Oriented Networks, Connectionless Networks, Some Example of N/WS, Wireless LANS:802.11, 802.11X, Gigabit, Interconnection of Networks: Internetworks, Network Model, TCP/IP MODEL

CHAPTER-2.Physical Communication

Structure-Introduction, Hardware Architecture, Transmission Techniques, Wireless Transmission Switching

CHAPTER-3.Link Layer Communication

Structure-Introduction , Types of Errors, Error Detection, Error Detection Techniques, Error Correction, Error Correction Techniques, Framing , Flow Control, Error Control, HDFC(High Level Data Link Control), P2P (Peer to Peer) Protocol

CHAPTER-4.IP Addressing & Routing

Structure-Internet Protocol, IP Packet Format, Addresses, IP Addresses, Network mask, Network Address, Boardcast Address, IP address Classes, Loopback Address, Routing, IP Routing Concepts, IP Routing Table, Properties of Streams, Packet Formats, What TCP does?, TCP Connection

CHAPTER-5.IPv6

Structure-Introduction, Packet Format, Addressing Scheme, Types of Addressing, Security, Applications and Limitations of IPv6, Comparison between IPv4 and IPv6

CHAPTER-6.Domain Network Services (DNS)

Structure-Introduction to DNS, Domain Namespace, Domain Name, Authoritative Hosts, Resource Records and Zones, Delegating Authority, Zone Transfer , DNS NOTIFY, DNS Protocol, DHCP & Scope Resolution

CHAPTER-7.Network Applications

Structure-Introduction, Hyper Text transfer Protocol(HTTP), HTTP Communications, Email: Sending & Receiving Emails,Email Addressing , Message Structure, MIME - Multipurpose Internet Mail Extentions, SMTP- Simple Mail Transfer Protocol with Examples, Mail Exchangers -Delivering a Message ,Mail Boxes , POP-post Office Protocol , IMAP- Internet Message Access Protocol, FTP- File Transfer Protocol, Telnet - Remot Communication Protocol, Proxy Server ,Proxy Web Servers

CHAPTER-8.Network Security

Structure-Introduction, Threat, Attracts, Cryptography/Cryptology, Security Services, Digital Signature, IP Security or IPSec, SSl, Virtual Private Networks (VPNs), Firewall

CHAPTER-9.Advance Network Techniologies

Structure-Wi-Fi, IEEE Standard -802.3, IEEE Standard -802.4(Token Bus), IEEE Standard -802.5(Token Ring) , IEEE Standard -802.11, IEEE Standard -802.11X, WiMax, LTE (Long Term Evolution), Cloud Computing, Grid Computing, HSPA (High Speed Packet Access), IPTV (Internet Protocol Television), FTTH(Fiber to The Home), GPON

DATA STRUCTURE USING C++

CHAPTER-1.Introduction to Data structure

Structure-Introduction, Definition of Data structure, Need of Data structure, Implementation of Data structure, Data Definition, Data Object, Data Type, Abstract data Types (ADT), Data structure and Structured Types, Atomic Type, Classification of Data structure, Representation of Data structure, Data structure Operations, What is Algorithm?, Algorithm design Tools, Complexity, Big 'O' Notation, Algorithm Analysis, Time space Trade off, Null Character, Refinement Stages

CHAPTER-2.Array

Structure-Introduction, What is an Array, Types of Array, Operations on Arrays, Applications of Arrays, Polynomial Representation using Arrays, Sparse Matrices, Pros and Cons of Arrays

CHAPTER-3.Linked List

Structure-Introduction, Drawbacks of Sequential Storage, Concept of Linked List, Implementation of Linked List, Operations on Linked List, Singly Linked List, Representation of Polynomial, Circular Linked List, Doubly Linked List, Doubly Circular Linked List, Comparison of Sequential (Array) and Linked Organizations (Linked List), Comparison Singly Linked List and Doubly Linked List, Generalized Linked List, Header Linked List

CHAPTER-4. Stack

Structure-Introduction , Definition of stack, Primitive Operations on Stack , Implementation of stack, Detail Operations of Stack, Application of stack, Recursion, Expression Conversion and Evaluation, Multiple Stacks, Matching Parenthesis in an Expression, Reversing a String

CHAPTER-5.Queue

Structure-Introduction , Definition of Queue, Primitive Operations on Queue, Representation of Queue, Types of Queue, Doubly Ended Queue (DE-QUE), Applications of Queues, Multiple Queues , CPU Scheduling Algorithms

CHAPTER-6.Tree

Structure-Introduction, Tree Terminology, Types of Trees, Searching in Trees

CHAPTER-7.Binary Threaded Tree

Structure-Introduction to AVL Tree or Height Balanced Trees, B-Tree , B+ trees, B* Tree, Expression Tree

CHAPTER-8.Graph

Structure-Introduction, Graph, Graph Terminology, Graph -Abstract Data Type , Representation of Graphs, Traversal of Graphs, Applications of Graphs, Algorithms for Minimal Spanning Trees, Spanning Tree , Shortest Path Algorithm for Graph

OBJECT ORIENTED ANALYSIS AND DESIGN

CHAPTER-1.Introduction to OOAD and Object Paradigm

Structure-Two Views of Software Developments:SSAD and OOAD, Why Object -Orientation, The Object Paradigm

CHAPTER-2.Object Oriented Methodologies

Structure-Object Oriented Methodology, Diagramming and Notational Techniques Using the UML, Analysis Diagramming Techniques, Design and Diagramming Techniques,

Generalization, Aggregations and Composition, Associations

CHAPTER-3.Object Oriented Systems Development Process

Structure-Rational Unified Process, Four Major Phases, Requirements Engineering, Problem Analysis, Understanding Stakeholders Need, Use Case Model: Writing Requirements

CHAPTER-4.Analysis

Structure-Behavioural Analysis, Domain Analysis or Business Object Analysis, Use Case Driven Object Oriented Analysis : The UML Approach, Identify the Classes, Containment and Composition, Aggregation, Inheritance, Subtypes and IS -A Hierarchies, Association and Link Relationships, Diagramming System Events

CHAPTER-5.Design Phases

Structure-Translation Analysis Concept into Design, Optimizing Classes: The Multi-Tiered Architecture View, Mapping, Object to Object: Visibility, Collaboration Diagram, Sequence Diagram, Specification Class Diagram, Specifying Object Interfaces, Designing the Data Access Layer, Design User Interface Layer, Designing System Interfaces, Controls and Security

CHAPTER-6.Design Refinement

Structure-Designing for Extensibility, Design for Reusability, Checking Completeness and Correctness

CHAPTER-7.Persistent Object and Database Issues

Structure-Introduction, The Codd Data Management, Object Persistence, Object Oriented Database Management System, Object-Oriented versus Relational Database, Mapping object to Relational Data Structure

CHAPTER-8.Testing of Object Oriented Applications

Structure-Introduction, Testing Strategy, Impact of Object Oriented Testing, Testing Business Process, Metrics and Quality, Discovering Reusable Pattern

CHAPTER-9.Patterns

Structure-What is a Pattern?, Benefits of Pattern, Using Patterns During Analysis, Using Patterns During Design

WEB TECHNOLOGIES

CHAPTER-1.HTML and CSS

Structure-HTML , HTML Sheet

CHAPTER-2.JavaScript

Structure-Client Side Scripting, Server Side Scripting, Introduction to JavaScript, Data Types and Literals, Operators, Control Structures and Looping, User Defined Functions, Perdefined Functions, Arrays, Document Objects Model(DOM), DOM Objects, Window Object, Navigator Object, History Object, Location object, Core Language Object, Event Handling in JavaScript, Form Object and Validation on Forms

CHAPTER-3.JQuery and AJAX

Structure-Introduction to JQuery, Anotamy of JQuery Script, Traversing the DOM, Selecting Elements With JQuery, Refining and Filtering Selections, Selecting Form Elements, Working with Selection - Chaining, Getters and Setters, CSS Styling and Dimensions, Manipulating Elements, Manipulating Attributes, Utility Methods, Events, Animating Effects, Plugins, JQuery UI and Forms, AJAX Overview ,JQuery's ALAX related methods,AJAX and Forms,AJAX Events

CHAPTER-4.Apache HTTP Server

Structure-Concept of Web Server, Editing httpd.conf Configuration file,Configuration Directives in httpd.conf, Add Site to /etc/hosts file, DocumentRoot,ErrorLog,Listen, Directory,Files,Location,Redirect,virtual Hosts ,Modules, Creating .htaccess, .htpasswd file, Configuring httpd.conf, Secure Web Server

CAHPER-5.XML

Structure-Introduction to XML, Features of XML, XML and CSS Using XML, Data Source Object (DSO), DTD and Schemas, XML Namespaces, XSL Transformation(XSLT), SAX and DOM Parsers, Introduction to SOAP

Design and Analysis of Algorithm

Chapter-1.Introduction

Structure-Introduction, Asymptotic Notations

Chapter-2.Elementary Data Structures

Structure-Introduction, Heaps and Heap Sort, Set and Disjoint Set, Union and Find operations, Sorting in Linear Time

Chapter-3.Divide and conquer

Structure-Divide and Conquer, General Strategy

Chapter-4.Greedy Method,

Structure-General Strategy, Job Sequencing with Deadlines, Optimal Merge Patterns, Minimal Spanning Trees, Dijkstra's Algorithm (Single Source Shortest Path)

Chapter-5.Dynamic Programming

Structure-Introduction, General Strategy, Multistage Graph, Optimal Binary Search Tree (OBST), 0/1 Knapsnack, Travelling Salesperson Problem, Flow Shop Scheduling

Chapter-6.Backtracking

Structure-Introduction, Backtracking General Strategy, N-Qqeen's Problem, Graph Coloring, Hamitonian Cycle, 0/1 knapsack problem

Chapter-7.Branch and Bound

Structure-Introduction, General Strategy, 0/1 Knapsack Problem, Travelling Salesperson Problem (TSP)

Chapter-8.NP-Hard and NP_Complete Problems

Structure-Introduction, Basic Concepts, P Vs NP Problems, Non-deterministic Algoithms, Decision Problem Vs Optimization Problem, The classes NP-Hard and NP-Complete

Information Security and Audit

Chapter 1:-Introduction to Information Security

Structure:-Introduction, History and Evolution of Information Security CIA Triangle, Component of Information Security(S), Control in IT Environment, Steps For Developing

Chapter 2:-Need of Information Security

Structure:-Introduction, Threats to Information Security,Risk to Information Systems, Information Security In Organization ,Introduction To Cyber Crimes And Attacks, Information Security Policy ,Policy Definition and Security Life Cycle

Chapter 3:-Information Security Policy and Standards

Structure:-Security Principles , Types of Information Security Policies-Administrative and Technical, A Structure and Framework of Compressive Security Policy, Security Policy Standard and Practices

Chapter 4:-Domain of IT Security

Structure:-Introduction, Various Security Policies, E-mail and Digital Signature , Outsourcing , Software Development and Acquistion , Network and Telecom, BCP and DRP, Security Organization Structure, Domains Related Security Based Cases Studies

Chapter 5:-IT GOVERNANCE

Structure:-What is IT Governance, Good Governance, Objectives and Dimensions, Foundation, Structure, Processes, IT Governance Framework-COBIT, ITIL, ISO 17799, IT Governance Maturity Model

Chapter 6:-Auditing Concept

Structure:-Introduction, Information System Audit(SA), Auditing Technique

Chapter 7:-Controls

Structure:-Controls, Evidance Collection, Evaluation and Reporting Methodologies

Chapter 8:-Ethical Hacking

Structure:-Introduction, what are Ethics ? , Ethical Hacking

JAVA PROGRAMMING

Chapter-1.Fundamentals of Object Oriented Programming

Structure-Introduction, Concept of OOP, Structure of Procedure Oriented Programming, Structure of Object Oriented Programming, Difference Between Procedure Programming and Object Oriented Programming Language, Features of C++, Fundamentals of Object Oriented Programming, Why Java is not 100% Object Oriented Language?

Chapter-2.Introduction to JAVA

Structure-Introduction , History of Java, The Byte Code, Java Development Kit (JDK), Java Virtual Machine (JVM), Java Runtime Environment, Advantages of Java, Disadvantages of Java

Chapter-3.Programming Concepts of Basic Java

Structure- Java Program Structure, Compilation and Execution of Java Program , Command Line Argument, Class Path Problem, Constants,Variables and Data types, Operators and Expressions, Type Conversion(Casting), Operator Procedence in Precedence in Java, Decision Making and Branching, Array Class

Chapter-4.Java Classes

Structure-Java Classes, Creating Objects, Differentiate between Class and Object, Accessing Class Members, Types of Classes in Java, Constuctor, Constuctor Overloading, Difference between Constructor and Methods, Methods Overloading, Nesting of Methods, Static, The this Keyword , Nested and Inner Classes, Garbage Collection, Wrapper Classes, Autoboxing and Unboxing, Enumerated types

Chapter-5 Inheritance

Structure-Inheritance:Extending a Class, Access Modifier, Abstract Class and Abstract Methods, Methods Overriding, Differentiate Betweeen Method Overloading and Method Overloading, Final Keyword, Super Keyword, Down Casting and Up Casting, Dynamic Method Dispatch

Chapter-6.Packages and Interfaces

Structure-Introduction, Problem with Multiple Inheritances, Java Interface, Implementing Interfaces, Accessing Interface Variable, Java Packages, Java API Packages, Using System Packages, Static Import, Package Visiblity, Adapter Classes

Chapter-7.Exception Handling

Structure-Java-Managing Errors And Exceptions, Exception, Exception Handling Mechanism, Throws, Difference between throw and throws keyword, Finally Statement, Throwing User Defined Exception, Nested Try Statement

Chapter-8.Multithreading

Structure-Introduction, Java Multithreaded Programming, Java Thread, Main Thread, Creating Threads, Life Cycle of a Thread, Using Thread Methods, Thread Priority, Synchronization, Thread Scheduler

Chapter-9.Abstract Window Toolkit

Structure-Abstract Window Toolkit, Why Abstract Window Toolkit?, Java.awt Packages, AWT Classes, Components, Container Class, Layout Managers, Event Handling, Delegating the Event, Event Sources., Event Listeners, Event Classes, Event Listener Interfaces, Handling Mouse Events, Handling Keyboard Events, Anonymous Inner Classes

Chapter-10.Swing

Structure-Introduction, Java Foundation Classes, JFC Technologies , Featues of Swing, Difference between Swing Packages and AWT, Pros and Cons of Swing, Swing Components, Java Swing Packages, Swing Basic Containers, Working with Swing

Chapter-11.Applets

Structure-Introduction of Java-Applet, Types of Applets , Differentiate between Applets and Application, Creating an Executable Applet, Steps involved in Developing and Testing in Applets, Running the Applet using Applet viewer, Adding Applet to the HTML file, Applet Structure and Elements, Applet Class, Applet Life Cycle, Applet Skeleton, Applet Tag, Aligning the Display, Designing a Web Page, Comman Methods used in Displaying the Output, Displaying Numerical Values, Getting Input From the User, Updated() method, Repaint()method, Status Window, getCodeBase(), How to use an Audio Clip, Java-Graphics Programming, Using Control Loop in Applets, Drawing Bar Charts, Line Graph, The Color Class, Using Fonts with Applets

Chapter-12.Java Utility Packages

Structure- Hasing, Vector, Differentiate between Array and Vector, Math Class, Enumeration, Iterator , System, Random, String Class, String Buffer Class

Chapter-13.Streams and File

Structure-Introduction, Java.io.file Class, Java Stream Classes, Byte Streams Class, Character Stream Class, Difference between Byte Stream Classes and Character Stream Classes, Differentiate between Input Stream class and Reader Class, Differentiate between Output Stream Class and Writer Class, File Streams, File Input Stream and File Output Stream Data, Input Stream and Data Output Stream, Buffered Reader and Buffered Writer Class, File Reader and File Writer class, Print Writer, Filter Streams, Push back Input Stream, Pipe Stream, .Random Access File, Stream Tokenizer, File Operation, Serialization and Deserialization

Mobile Computing

Chapter-1.Introduction to Mobile Communication and Computing

Structure-Introduction, Application and Limitations, Cellular overview, Cellular Networks, Cellular Concept, .Location Management, Handoffs

Chapter-2.Wireless LANs and Application Overview

Structure -WLAN, Wireless Applications, MAC issues, Mobile IP, Mobile Ad-hoc Network (MANET), TCP Issues, Disconnected Operations, Data Broadcasting, Mobile Agents

Chapter-3.GSM

Structure-Air-Interface,Channel,Timing, Mobile Services, System Architecture, Protocol, WAP Architecture

Chapter-4.Access Technologies

Structure-Bluetooth, GPRS, 802.11 MAC, CDMA, Mobile Phone Technologies

Chapter-5.Database Issues

Structure-Introduction, Hoardind Techniques, Caching Invalidation Mechanisms, Client Server Computing with Adaption, Power Aware and Context Aware Computting, Transactional Modes,Query Processing,Recovery and Quality of Service Issues

Chapter-6.Platform/Operating Systems for Application Development

Structure-Palm OS, Windows CE, Embedded Linux, Introduction to J2ME, Symbian OS

Chapter-7.Android Application Development

Structure-Overview of Android, Devices Running Android, Why Develop for Android?, Features of Android, Architecture of Android,Libraries, Software Development Kit

Chapter-8.Designing the User Interface

Structure-Introduction, Introducing Views and View Groups, Introducing Layouts,Creating New Views, creating and using Menus

Chapter-9.Starting with Application Coding

Structure-Introducing Intents, Introducing Adapters, Using Internet Resources, Introducing Dialogs , Capturing Data and Time, Validating and Handling Input Data

Chapter-10.Accessing Location Based Services Application

Structure-Selecting Location Provider, Finding your Location, Creating Map Based Activities

Chapter-11.Data Storage,Retrieval and Sharing

Structure-File System in Android, Internal and External Storage, saving and loading Files, File Management Tools

Chapter-12.Introduction to SQLite

Structure-Introduction , Creating SQLite Database, Editing Tasks with SQLite, Cursors and Content values, Working with Android Database

Chapter-13.Peer to Peer Communication

Structure-Introduction, Accessing Telephony Hardware, Introducing Android Instant Messages, Gtalk Service:Using,Binding and Making Conection, Managing chat Session, Sending and Receiving Data Messages, Introducing SMS, Using,Sending,Listening SMS Messages

Chapter14.Accessing Android Hardware

Structure-Introduction, Audio,Video,Using Camera, Introducing Sensor Manager, Android Telephony, Using Bluetooth, Manage Network and Wi-Fi Connections

Chapter-15.Pulishing Android Application to Market

Structure-Introduction

Optimization Techniques

Chapter 1.Linear Programmimg

Structure:-Introduction, Construction of LP Model, Graphical Method, Linear Programming:Simplex Method, Simple Algorithm: maximization Case , Simplex Algorithm :minimization Method, Special Cases in Simplex Method, Two phase Method, Linear Programming:Duality , Constructing the Dual Problem, Interpreting Primal-Dual Optimum Solution, Dual Simplex Method ,Transportation Problem,Test for Optimally, Variations in Transportation Problem

Chapter 2.Sequential Model and Related Problems

Structure:-Introduction, Processsing n Jobs through one Machine, Processing n Jobs through Two Machines

Chapter 3.Queuing Theory

Structure:-Introduction, Characteristics of Queuing Model, Waiting Time and Idle Time Costs, Transient and Steady States of the System, Single-Channel Queuing Therory

Chapter 4.Replacement Theory

Structure:-Introduction, Types of Failure, Replacement of Item Whose Effiency Deteriorates with Time, Replacement of Items that fail Completely,Individual Replacement Policy, Group Replacement policy

Chapter 5.Inventory Theory

Structure:-Introduction, Inventory Control Problem, Inventory Models with Deterministic Demand

Chapter 6.PERT & CPM

Structure:-Introduction, Network, Measure of Activity, Frequency Distribution Curve for PERT, PERT Computations, Slack,Critical Path, Probability of Meeting the Scheduled Dates, CPM Computations, Critical path, Float, Negative Float and Negative Slack, Updating(PERT and CPM)

Year 3: Syllabus

Advanced Development Technology

Chapter-1.Creating Web Forms Applications

Structure -Introduction, Creating ASP.NET Web Application, Introduction to Microsoft Visual Studio 2005, Creating New ASP.NET Project, ASP.NET Page Life Cycle, Namespaces, ASP.NET State Management

Chapter-2.Creating a User Interface

Structure - Introduction, Using Controls, Navigation between Web Forms

Chapter-3.Data Binding

Structure - Introduction to Data Binding, Data Source Control, SqIDataSource Control, Gridview Control Using Data Source Control, Details View Control Using Data Source Control, FormsView Control, Control Data Bound and Data Filtering

Chapter-4.Storing and Retrieving Data with ADO>NET

Structure - Introduction, ADO.NET Object, Transaction processing in ADO>NET

Chapter-5.Catching and Correcting Errors

Structure- Introduction, Using Try..catch Exception, using Error Pages, Logging Exception

Chapter-6.Web Services

Structure - Introduction, Foundational Elements of Web Services, Building/Creating of Web Services, Calling the Web Service on the Client Slide

Chapter-7.Testing Web Appication

Structure - Introduction, Creating Test cases, Tracing Web Application, Debugging the Web Application

Chapter-8.Building and Deploying Web Applications

Structure - Introduction, Building a Web Application, Deploying Web Application, Configuring the UI of Web Setup Project

Chapter-9.Maintaining Security

Structure - Introduction, Authentification and Authorization, Authentification in ASP.NET

Chapter-10.Use of Ajax on the Web Forms

Structure - Introduction, ASP.NET AJAX Control Toolkit

Advanced Internet Technology

Chapter 1:-The basic principles of Internet Technology

The basics of sites creation using language HTML – Structure-Overview of Internet, HTTP Request and Responce, Cookies - Introduction to PERL and CGI - Client-side programming and Server-side programming - Cascading Style Sheets - Dynamic Web pages creation - Services creation, which based on databases

Chapter 2.Apache Tomcat Server

Introduction, Obtaining and Installing Apache Tomcat, Tomcat Directory Structure, Web Application Directory Structure, Configuring Tomcat, Deploying Web Application, Tomcat Manager, Configuration Tomcat to Connect to a Database, Configuration Security on Tomcat

Chapter 3:-Servlets

Introduction, Servlet vs CGI, Servlet Life Cycle, Coading, Generic Servlet, Writting Servlet to Handle GET and POST Method, Session Tracking in Servlet, Servlet ang JDBC, WritingThread-Safe Servlet

Chapter 4:-JSP

Structure-Introduction, Why Jsp?, JSP Directives, Writing Simple JSP Pages, Scripting Element, Default Object in JSP, JSP Actions, Managing Session Using JSP, JSP with Beans

Chapter 5:-Spring-Hibernate Framework

Structure-Introduction, Overview of the Spring Framework, Invesion of Control/Dependancy Injection, Aspect Oriented Programming, Spring MVC Architecture, Bean Factory and Application Context, Listening on Events, DispatcherServlet, Error Handling Strategy, JDBC with Spring-Working with the HSQLDB, Hibernate with Spring, Hibernate Configuration in Spring, Hibernate Session, DAO Persistence ORM, Hibernate Mapping, Integrating Spring MVC with Hibernate in Web Application

Chapter 6:-PHP

Structure-Introduction, Overview of PHP Capabilitites, PHP and Web Server Architecture Model, Obtaining,Installing and Configuration PHP, PHP Language Core, PHP Session and Cookie Variables, Sending E-Mail, PHP and HTTP Environment Variables, Processing HTML Forms Using Get and Post, Database Operation with PHP

7. Web sites testing and publications

Current/Emerging Trends in Information Technology

Chapter 1:-Social Networking

Structure-Social Networking Definition, Overview of Social Networking Sites, Categories of Social Media, Features, Need for Social Networking Sites, Advantages of Social Networking Sites, Disadvantages of Social Networking Sites, Security issues with Social Networking Sites, Examples of Social Networking Sites

Chapter 2:-Cloud Computing

Structure-Introduction, History, Definition, Architecture for Cloud Computing, Cloud Types, Cloud Computing Services Models, Advantages of Cloud Computing, Disadvantages of Cloud Computing, Cloud Security

Chapter 3:-Enterprise Content Management

Structure-Enterprise Content Management(ECM), Content Management System, Electronic Document Management(EDM)

Chapter 4:-e-Learning

Structure-Introduction, Types of e-learning, e-coaching and Telemonitoring, e-learning Models, e-learing Tools and Technologies, Case Study

Chapter 5:-e/m-Commerce

Structure-Introduction, Electronic, Point of Sales System(POS), m-Commerce, Mobile ATM(ICIC Bank Case Study), Application for Mobile Computing,Case Study

Software Testing & Quality Assurance

Chapter 1:-Software Quality Assurance Fundamentals

Structure-Introduction, Defination, SQA Planning and Standards, SQA Activities, Building Blocks of SQA, Quality factors, Software Quality Metrices, Process Improment-Process and Product Quality-CMM,Six Sigma

Chapter 2:-Software Realiability

Structure-Introduction, Realibility Measures, Realibility Models

Chapter 3:-Software Verification and Validation Activties

Structure-Introduction, Verification and Validation Concepts, Verification and Validation Planning, Software Inspections, Automated Static Analysis, Clean Room Software Development, Case study:Software Inspection Checklist Preparation

Chapter 4:-Software Testing Fundamental

Structure-Introduction, Software Testing, Types of Software Bugs, Bug Life Cycle, Testing Life Cycle, Test Plan, Test Cases, Cases Studies on Test plan &Test Cases

Chapter 5:-Black Box White Box Testing

Structure-Introduction, Fundamental Testing(Black Box), Cause-Effect Graph, Structure Testing, Domain Testing, Non-Functional Testing, Black Box Testing, White Box Testing, Grey Box Testing, Black Box vs Greay Box vs White Box

Chapter 6:-Different Types of Testing

Structure-Introduction, Unit Testing, Integration Testing, System Testing, Regression Testing, Installation Testing, Usability Testing, Acceptance Testing-Alpha testing and Beta testing, Static Versus Dynamic, Testers Workbench, Manual Versus Automatic Testing

Chapter 7:-Static and Dyanamic Testing

Structure-Introduction, Static Testing Techniques, Review Types, Review Reporting and Record Keeping Review Guildelines, Data Flow Analysis, Control Flow Analysis, Cyclomatic Analysis, Case Study:Cyclomatic Complexity

Chapter 8:-Testing Specialized System and Application

Structure-Introduction, Testing Object Oriented Software, Testing Web-Based Applications, Computer Aided Software Testing Tools(CAST)

Software Testing & Quality Assurance

Chapter 1:-Software Quality Assurance Fundamentals

Structure-Introduction, Defination, SQA Planning and Standards, SQA Activities, Building Blocks of SQA, Quality factors, Software Quality Metrices, Process Imprement-Process and Product Quality-CMM,Six Sigma

Chapter 2:-Software Realiability

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