CORE - I   PROBLEM SOLVING USING PYTHON

I YEAR / I SEM

Learning Objectives:

- ➢ Describe the core syntax and semantics of Python programming language.
- ➢ Discover the need for working with the strings and functions.
- ➢ Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.
- ➢ Understand the usage of packages and Dictionaries.

SYLLABUS:

UNIT – I

Introduction: The essence of computational problem solving – Limits of computational problem solving-Computer algorithms-Computer Hardware-Computer Software-The process of computational problem solving-Python programming language - Literals - Variables and Identifiers - Operators - Expressions and Data types.

UNIT - II

Control Structures: Boolean Expressions - Selection Control - If Statement-Indentation in Python- Multi-Way Selection -- Iterative Control- While Statement-Infinite loops- Definite vs. Indefinite Loops- Boolean Flags and Indefinite Loops. Lists: List Structures - Lists in Python - Iterating over lists in Python.

UNIT - III

Functions: Program Routines- Defining Functions- More on Functions: Calling Value-Returning Functions- Calling Non-Value-Returning Functions- Parameter Passing - Keyword Arguments in Python - Default Arguments in Python-Variable Scope.

UNIT - V

Objects and their use: Software Objects - Turtle Graphics – Turtle attributes-Modular Design: Modules - Top-Down Design - Python Modules - Text Files: Opening, reading and writing text files - String Processing - Exception Handling.

UNIT - V

Dictionaries and Sets: Dictionary type in Python - Set Data type. Object Oriented Programming using Python: Encapsulation - Inheritance – Polymorphism. Recursion: Recursive Functions.

Learning Outcomes:

- ➢ To Understand the principles of Python and acquire skills in programming in python
- ➢ To develop the emerging applications of relevant field using Python
- ➢ Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
- ➢ Able to develop simple turtle graphics programs in Python

TEXT BOOK:

1. Charles Dierbach, "Introduction to Computer Science using Python - A computational Problem solving Focus", Wiley India Edition, 2015.

REFERENCE BOOKS:

1. Mark Lutz, "*Learning Python Powerful Object Oriented Programming*", O'reilly Media 2018, 5th Edition.
2. Timothy A. Budd, "*Exploring Python*", Tata MCGraw Hill Education Private Limited 2011, 1st Edition.
3. Allen Downey, Jeffrey Elkner, Chris Meyers, "*How to think like a computer scientist: learning with Python*", 2012.
4. Sheetal Taneja & Naveen kumar, "*Python Programming a Modular approach – A Modular approach with Graphics, Database, Mobile and Web applications*", Pearson, 2017.
5. Ch Satyanarayana M Radhika Mani, B N Jagadesh, "*Python programming*", Universities Press 2018.

WEB REFERENCES

- ➢ http://interactivepython.org/courselib/static/pythonds
- ➢ http://www.ibiblio.org/g2swap/byteofpython/read/
- ➢ http://www.diveintopython3.net/
- ➢ http://greenteapress.com/wp/think-python-2e/
- ➢ NPTEL & MOOC courses titled Python programming
- ➢ http://spoken-tutorial.org/tutorial-search/?search_foss=Python&search_language=English
- ➢ http://docs.python.org/3/tutorial/index.html

PRACTICAL - I   PYTHON PROGRAMMING LAB
I YEAR / I SEM
Learning Objectives:

➢ To implement the python programming features in practical applications.
➢ To write, test, and debug simple Python programs.
➢ To implement Python programs with conditionals and loops.
➢ Use functions for structuring Python programs.
➢ Represent compound data using Python lists, tuples, dictionaries , turtles, Files and modules.

LIST OF EXERCISES:

1. Program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2. Program to calculate total marks, percentage and grade of a student. Marks obtained in each of the five subjects are to be input by user. Assign grades according to the following criteria:
   Grade A: Percentage >=80 Grade B: Percentage >=70 and <80
   Grade C: Percentage >=60 and <70 Grade D: Percentage >=40 and <60
   Grade E: Percentage <40
3. Program, to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.
4. Program to display the first n terms of Fibonacci series.
5. Program to find factorial of the given number using recursive function.
6. Write a Python program to count the number of even and odd numbers from array of N numbers.
7. Python function that accepts a string and calculate the number of upper case letters and lower case letters.
8. Python program to reverse a given string and check whether the give string is palindrome or not.
9. Write a program to find sum of all items in a dictionary.
10. Write a Python program to construct the following pattern, using a nested loop
    1
    22
    333
    4444
    55555
    666666
    7777777
    88888888
    999999999
11. Read a file content and copy only the contents at odd lines into a new file.
12. Create a Turtle graphics window with specific size.
13. Write a Python program for Towers of Hanoi using recursion
14. Create a menu driven Python program with a dictionary for words and their meanings.
15. Devise a Python program to implement the Hangman Game.

Learning Outcomes:

➢ Understand the numeric or real life application problems and solve them.
➢ Apply a solution clearly and accurately in a program using Python.
➢ Apply the best features available in Python to solve the situational problems.

CORE - II   COMPUTER ORGANIZATION
I YEAR / II SEM
Learning Objectives:

➢ To understand the basic organization of computers and the working of each component and CPU

➢ To bring the programming features of 8085 Microprocessor and know the features of latest microprocessors.

➢ To understand the principles of Interfacing I/O devices and Direct Memory accesses

SYLLABUS

UNIT - I

Data representation: Data types – Complements- fixed point and floating point representation other binary codes. Register Transfer and Microoperations: Register transfer language- Register transfer- Bus and Memory transfers – Arithmetic, logic and shift micro operations.

UNIT - II

Central processing unit: General register and stack organizations- instruction formats - Addressing modes- Data transfer and manipulation - program control- RISC - Pipelining - Arithmetic and instruction- RISC pipeline - Vector processing and Array processors.

UNIT - III

Microprocessor Architecture and its Operations - 8085 MPU - 8085 Instruction Set and Classifications. Programming in 8085: Code conversion - BCD to Binary and Binary to BCD conversions - ASCII to BCD and BCD to ASCII conversions - Binary to ASCII and ASCII to Binary conversions.

UNIT - IV

Programming in 8085:BCD Arithmetic - BCD addition and Subtraction - Multibyte Addition and Subtraction - Multiplication and Division. Interrupts: The 8085 Interrupt – 8085 Vectored Interrupts –

UNIT - V

Direct Memory Access(DMA)and 8257 DMA controller - 8255A Programmable Peripheral Interface. Basic features of Advanced Microprocessors - Pentium - I3 , I5 and I7

Learning Outcomes:

➢ Describe the major components of a computer system and state their function and purpose

➢ Describe the microstructure of a processor

➢ Demonstrate the ability to program a microprocessor in assembly language.

➢ Classify and describe the operation DMA and peripheral Interfaces.

TEXT BOOKS:

1. M.M. Mano, "Computer System architecture". Pearson, Third Edition, 2007
2. R. S. Gaonkar- "Microprocessor Architecture- Programming and Applications with 8085"- 5th Edition- Penram- 2009.
3. Tripti Dodiya & Zakiya Malek, "Computer Organization and Advanced Microprocessors", Cengage Learning, 2012.

REFERENCE BOOKS:

1. Mathur- "Introduction to Microprocessor"- 3rd Edition- Tata McGraw-Hill-1993.
2. P. K. Ghosh and P. R. Sridhar- "0000 to 8085: Introduction to Microprocessors for Engineers and Scientists"- 2nd Edition- PHI- 1995.
3. NagoorKani- "Microprocessor (8085) and its Applications"- 2nd Edition- RBA Publications- 2006.
4. V. Vijayendran- "Fundamentals of Microprocessors – 8085"- S. Viswanathan Pvt. Ltd.- 2008.

WEB REFERENCES:

➢ NPTEL & MOOC courses titled Computer organization
➢ https://nptel.ac.in/courses/106105163/
➢ https://nptel.ac.in/courses/106103068/

PRACTICAL – II   **COMPUTER ORGANIZATION LAB**
I YEAR / II SEM

Learning Objectives:

➢ To understand the programming features and operations of assembly language programs using 8085 microprocessor kit or Simulator

LIST OF EXERCISES:

I : Addition and Subtraction
     1. 8 - bit addition
     2. 16 - bit addition
     3. 8 - bit subtraction
     4. BCD subtraction

II : Multiplication and Division
     1 . 8 - bit multiplication
     2. BCD multiplication
     3. 8 - bit division

III: Sorting and Searching
     1. Searching for an element in an array.
     2. Sorting in ascending order.
     3. Finding largest and smallest elements from an array
     4. Reversing array elements
     5. Block move
     6. Sorting in descending order

IV: Code Conversion
     l. BCD to Hex and Hex to BCD
     2. Binary to ASCII and ASCII to binary
     3. ASCII to BCD and BCD to ASCII

V: Applications
     1. Square of a single byte Hex number
     2. Square of a two digit BCD number
     3. Square root of a single byte Hex number
     4. Square root of a two digit BCD number

Learning Outcomes:

➢ Implement the arithmetic operations in assembly language programming
➢ Understand the programming logic of 8085 in various aspects

Core - III   **PROGRAMMING IN C++ AND DATA STRUCTURES**

II Year & Third Semester

Learning Objectives

- To enable the students to learn the basic concepts of C++ programming
- To use class and objects to create applications
- To provide the knowledge of basic data structures and their implementations.
- To understand importance of data structures in context of writing efficient programs.
- To develop skills to apply appropriate data structures in problem solving.

SYLLABUS

Unit 1: Introduction to C++; Tokens, Keywords, Identifiers, Variables, Operators, Manipulators, Expressions and Control Structures in C++; Pointers - Functions in C++ - Main Function - Function Prototyping - Parameters Passing in Functions - Values Return by Functions - Inline Functions - Friend and Virtual Functions

Unit-2: Classes and Objects; Constructors and Destructors; and Operator Overloading and Type Conversions - Type of Constructors - Function overloading. Inheritance : Single Inheritance - Multilevel Inheritance - Multiple Inheritance - Hierarchical Inheritance - Hybrid Inheritance. Pointers, Virtual Functions and Polymorphism; Managing Console I/O operations.

Unit 3: Working with Files: Classes for File Stream Operations - Opening and Closing a File - End-of-File Deduction - File Pointers - Updating a File - Error Handling during File Operations - Command-line Arguments. Data Structures: Definition of a Data structure - primitive and composite Data Types, Asymptotic notations, Arrays, Operations on Arrays, Order lists.

Unit-4: Stacks - Applications of Stack - Infix to Postfix Conversion, Recursion, Maze Problems - Queues- Operations on Queues, Queue Applications, Circular Queue. Singly Linked List-Operations, Application - Representation of a Polynomial, Polynomial Addition; Doubly Linked List - Operations, Applications.

Unit-5: Trees and Graphs: Binary Trees - Conversion of Forest to Binary Tree, Operations - Tree Traversals; Graph - Definition, Types of Graphs, Hashing Tables and Hashing Functions, Traversal - Shortest Path; Dijkstra's Algorithm.

Learning Outcomes

After completing the Course, students will learn:

- Articulate the principles of object-oriented problem solving and programming.
- Outline the essential features and elements of the C++ programming language.
- The basic types for data structure, implementation and application.
- Know the strength and weakness of different data structures.
- Use the appropriate data structure in context of solution of given problem.
- Develop programming skills which require to solve given problem.

Recommended Texts
    i.   E. Balagurusamy,1995,Object Oriented Programming with C++, Tata McGraw-Hill Publishing Company Ltd.
    ii.   E.Horowitz and S.Shani,1999,Fundamentals of Data Structures in C++ , Galgotia Pub.

Reference Books
    i.   Robert Lafore, Object Oriented Programming in Microsoft C++, Galgotia publication.
    ii.   H.Schildt, C++,1998,The Complete Reference-1998-TMH Edition, 1998
    iii.   R. Kruse C.L. Tondo and B. Leung ,1997, Data Structures and Program design in C, PHI.
    iv.   Cangsam,Auguenstein,Tenenbaum,Data Structures using C & C++,PHI
    v.   D.Samantha,2005, Classic Data Structures, PHI,New Delhi.

Websites

  (i). www.mrcet.com

 (ii). www.academia.edu

DATA STRUCTURES USING C++

CORE

Paper VI PRACTICAL – III

II Year & Third Semester

Learning Objective :

- To develop programming skills of students, using object oriented programming concepts.
- To deal with practical implementation of Data Structures using C++ language.
- To learn the concept of class ,objects constructors using C++.

Excercises

1. Implement PUSH, POP operations of stack using Arrays.

 2. Implement PUSH, POP operations of stack using Pointers.

3. Implement add, delete operations of a queue using Arrays.

4. Implement add, delete operations of a queue using Pointers.

 5. Conversion of infix to postfix using stack operations

6. Postfix Expression Evaluation.

7. Addition of two polynomials using Arrays and Pointers.

 8. Creation, insertion, and deletion in doubly linked list.

9. Binary tree traversals (in-order, pre-order, and post-order) using linked list.

10.Depth First Search and Breadth first Search for Graphs using Recursion

Learning Outcomes:

- To design, implement, debug and test programs using the fundamental elements of C++ programs
- Able to use various object oriented concepts to solve different problems.
- Able to implement Data Structures using C++ language.

ALLIED   STATISTICAL METHODS AND THEIR APPLICATIONS - I

II B.Sc. & III Semester

Learning Objective:

- To design data collection plans, analyze data appropriately and interpret and draw conclusions from those analyses
- To use tables, graphs, and charts and play a vital role in presenting the data to draw conclusions
- To study probability and mathematical statistics and in the description and development of statistical procedures,
- To gain knowledge of how to use a limited sample to make intelligent and accurate conclusions about a greater population

Syllabus:

UNIT - 1: Nature and scope of statistical methods and their limitations - Classification, tabulation and diagrammatic representation of various types of statistical data - Frequency curves and Ogives - Graphical determination of percentiles, quantiles and their uses, Lorenz curve.

UNIT - 2: Sampling from finite population - Simple random sampling, Stratified and systematic random sampling procedures - Estimation mean and total and their standard errors. Concepts of sampling and non-sampling errors.

UNIT - 3: Measures of location - Arithmetic mean, median, mode, Geometric mean, Harmonic mean and their properties - -merits and demerits. Measures of dispersion - Range, mean deviation, quartile deviation, standard deviation, coefficient of variation, skewness and kurtosis - and their properties.

UNIT - 4: Probability of an event - Finitely additive probability space addition and multiplication theorems - Independence of events - conditional probability - Bayes' theorem.

UNIT - 5: Bivariate frequency table and its uses - scatter diagram – Correlation and Regression lines - linear prediction - Rank correlation coefficient - curve fitting by the method of least squares- Partial and multiple correlation coefficients.

Learning Outcome:

- To understand the basic theoretical and applied principles of mathematical statistics
- To understand the fundamentals of probability theory, statistical reasoning and inferential methods
- To enhance the skill in description, interpretation and exploratory analysis of data by graphical and other means

Books for Study References:

- Mode, E.B.: Elements of Statistics - Prentice Hall
- Wilks, S.S.: Elementary Statistical Analysis - Oxford and IBH
- Snedecor, G.W., & Cochran, W.G.(1967): Statistical Methods, Oxford and IBH

- Simpson and Kafka: Basic Statistics
- Burr, I.W.: Applied Statistical Methods, Academic Press
- Croxton, F.E. and Cowden, D.J.: Applied General Statistics, Prentice Hall
- Ostleo, B.: Statistics in Research, Oxford & 1BH

PRACTICAL   JAVA PROGRAMMING LAB

II Year & Fourth Semester

LEARNING OBJECTIVES:

- Introduces computer programming using the JAVA programming language with object-oriented programming principles
- Implement event-driven programming methods, including creating and manipulating objects, classes, graphics concepts, applet programming concepts etc.
- Learn to design, code and debug JAVA language programs

APPLICATIONS:

1. Substring Removal from a String. Use String Buffer Class.
2. Determining the Perimeter and Area of a Triangle. Use Stream Class.
3. Determining the Order of Numbers Generated randomly using Random Class.
4. Usage of Calendar Class and Manipulation.
5. Implementation of Point Class for Image Manipulation.
6. String Manipulation Using Char Array.
7. Database Creation for Storing E-mail Addresses and Manipulation.
8. Usage of Vector Classes.
9. Interfaces and Packages
10. Implementing Thread based Applications and Exception Handling.
11. Application using Synchronization such as Thread based, Class based and Synchronized Statements.
12. Textfiles (copy, display, counting characters, words and lines)
13. Data file creating and processing for electricity billing.
14. Data file creating and processing for telephone billing

APPLETS:

15. Working with Frames and Various Controls.
16. Working with Dialog Box and Menus.
17. Working with Colors and Fonts.
18. Drawing various shapes using Graphical statements.
19. Working with panel and all types of Layout.
20. Design a simple calculator with minimal of 10 operations
21. Usage of buttons, labels, text components in suitable application
22. Usage of Radio buttons, check box, choice list in suitable application.

LEARNING OUTCOMES:

- Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.
- To design and program stand-alone Java applications and Java Applets.
- Apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.

Core Paper   PROGRAMMING IN JAVA

II Year & Fourth Semester

LEARNING OBJECTIVES:

- To understand the concepts and features of object oriented programming
- To examine key aspects of java Standard API library such as UTIL, IO, applets, GUI based controls
- To learn java's exception handling mechanism, multithreading, packages and interfaces
- To develop skills in internet programming using applets

Syllabus

Unit-1: Introduction to Java-Features of Java-Basic Concepts of Object Oriented Programming-Java Tokens-Java Statements-Constants-Variables-Data Types- Type Casting-Operators-Expressions-Control Statements: Branching and Looping Statements.

Unit-2: Classes, Objects and Methods-Constructors-Methods Overloading-Inheritance-Overriding Methods-Finalizer and Abstract Methods-Visibility Control –Arrays, Strings and Vectors-String Buffer Class-Wrapper Classes.

Unit-3: Interfaces-Packages-Creating Packages-Accessing a Package-Multithreaded Programming-Creating Threads-Stopping and Blocking a Thread-Life Cycle of a Thread-Using Thread Methods-Thread Priority-Synchronization-Implementing the Runnable Interface.

Unit-4: Managing Errors and Exceptions-Syntax of Exception Handling Code-Using Finally Statement-Throwing Our Own Exceptions-Applet Programming-Applet Life Cycle-Graphics Programming-Managing Input/Output Files: Concept of Streams-Stream Classes-Byte Stream Classes-Character Stream Classes – Using Streams-Using the File Class-Creation of Files-Random Access Files-Other Stream Classes.

Unit-5: Network basics –socket programming – proxy servers – TCP/IP – Net Address – URL – Datagrams -Java Utility Classes-Introducing the AWT: Working with Windows, Graphics and Text- AWT Classes- Working with Frames-Working with Graphics-Working with Color-Working with Fonts-Using AWT Controls, Layout Managers and Menus.

LEARNING OUTCOMES:

- Able to apply object oriented programming features and concepts for solving given problem using JAVA
- Able to use java standard API library
- Able to develop interactive programs using applets

Recommended Texts

i.   E. Balagurusamy,2004,Programming with JAVA, 2nd Edition,Tata McGraw-Hill Publishing Co.Ltd.

ii.   Herbert Schildt,2005,The Complete Reference JavaTM2, 5thEdition,Tata McGraw-Hill Publishing Co. Ltd.

Reference Books

i.   Y. Daniel Liang ,2003, An Introduction to JAVA Programming, Prentice-Hall of India Pvt. Ltd

ii.   Cay S. Horstmann and Gary Cornell,2005, Core JavaTM2 Volume I-Fundamentals, 7th Edition- Pearson Education

iii.   Ken Arnold, James Gosling and David Holmes,2003, The JavaTM Programming Language, 3rd Edition, Pearson Education

ALLIED STATISTICAL METHODS AND THEIR APPLICATIONS - II

II B.Sc. & IV Semester

Learning Objective:

- To equip students with consequently requisite quantitative skills that they can employ and build on in flexible ways
- To describe a data set including both categorical and quantitative variables to support or refute a statement
- To perform statistical inference in several circumstances and interpret the results in an applied context
- To demonstrate knowledge of the properties of parametric, semi-parametric and nonparametric testing procedures.

Syllabus:

UNIT - 1: Concepts of random variable - Mathematical expectation - Moments of random variable (raw and central moments) - Moment generating function - Chebycheff's inequality - simple problems.

UNIT - 2: Standard distributions - Binomial, Poisson and Normal distributions - Fitting of distributions.

UNIT - 3: Concept of sampling distributions - standard error - Tests of significance based on t, Chi-square arid F - distributions with respect to mean, variance and correlation coefficient. Theory of attributes and tests of independence in contingency table.

UNIT - 4: Principle of scientific experiments - Randomization, replication, and local control Analysis of variance - One way and two way classification Analysis of CRD and RBD - Latin square designs. Concepts of factorial experiments (without confounding).

UNIT – 5: Non parametric tests- Comparison between parametric and Non-parametric tests- Sign test- Runs test for one and two sample problems- Wilcoxon signed Rank test- Mann Whitney U test.

Learning Outcome:

- To apply statistical methods to real data using the theory and derived formula
- To understand statistical computing, statistical modelling and its limitations
- To learn to communicate the conclusions and inferences clearly

Reference Books:

- Mode, E.B.: Elements of Statistics - Prentice Hall
- Wilks, S.S.: Elementary Statistical Analysis - Oxford and IBH
- Snedecor, G.W., & Cochran, W.G.(1967): Statistical Methods, Oxford and IBH
- Simpson and Kafka: Basic Statistics
- Burr, I.W.: Applied Statistical Methods, Academic Press
- Croxton, F.E. and Cowden, D.J.: Applied General Statistics, Prentice Hall
- Ostleo, B.: Statistics in Research, Oxford & 1BH
- Sydney Siegel- Non-parametric Methods for Behavioural Sciences.
- Daniel, W W- Biostatistics.

ALLIED PRACTICAL

STATISTICAL METHODS AND THEIR APPLICATIONS I AND II

II B.Sc & IV Semester

Learning Objective:

- To solve appropriate statistical methods to collect, organize, display, and analyze relevant data
- To solve the problem of mean, variance, standard deviation and proportions
- To solve parametric, semi-parametric and non-parametric testing problems

Applications:

- Construction of univariate and bivariate frequency distribution with samples of size not proceeding 200
- Diagrammatic and graphical representation of various statistical data and frequency distributions
- Cumulative frequency curve and Lorenz curves
- Computation of various measures of location, dispersion, moments, skewness and kurtosis
- Curve fitting by the method of least squares
  (i) $y = ax + b$; (ii) $y = ax^2 + bx + C$; (iii) $y = ae^{bx}$ (iv) $y = ax^b$
- Computation of correlation coefficients - regression lines (raw data and grouped data) - correlation coefficients, Partial and Multiple Correlation coefficients
- Fitting of Binomial, Poisson and Normal distributions and testing goodness of fit
- Large sample test - tests for proportions
- Exact test based on t, Chi-square, and F distributions with regard to mean, variance and correlation coefficients
- Estimation of mean and r total and their standard errors in simple, stratified and systematic random sampling procedure
- Analysis of variance - one-way and two-way classifications
- Analysis of CRD, RBD and Latin square designs
- Non-parametric tests

Learning Outcome:

- Able to classify and interpret the data by means of diagrams and graph
- Able to calculate and interpret the various measures of central tendency, dispersion, skewness, and Kurtosis
- Able to perform correlation and regression analysis of data.
- Able to use different distributions to solve simple practical problems

Subject: Computer Architecture and Organization
Class: III B.Sc Computer Science

Course Objective:

        To understand the structure, function and characteristics of computer systems.
        To understand the design of the various functional units and components of computers.
        To identify the elements of modern instructions sets and their impact on processor design.
        To explain the function of each element of a memory hierarchy, To identify and compare different methods for computer I/O.

Syllabus:

UNIT - I: Computer Evolution: Pentium and Power PC Evolution. Computer System: Components Function - Interconnection Structures - Bus interconnection - Basics of PCI Bus. Memory: Characteristics - Hierarchy - Cache Memory - Principles - Cache Design - Locality of Reference.

UNIT - II: Main Memory: Static RAM - Dynamic RAM - Types of ROM - Memory Chip Organization - Types of DRAM. External Memory: Magnetic Disk - Basics of RAID - Optical Memory - Magnetic Tapes.

UNIT III: Input/Output: External Devices - I/O Module - Programmed I/O - Interrupt Driven I/O - DMA - I/O Channels & Processors. Computer Arithmetic: ALU - . Integer Representation and Arithmetic - Floating Point Representation and Arithmetic. Instruction Set: Characteristics - Operand Types - Operation Types - Addressing Modes - instruction Formats - Pentium and Power PC Operands, Operations, Addressing Modes (Simple Examples).

UNIT IV: CPU: Organization of Processors and Registers - Instruction Cycle - Instruction Pipelining - Pentium Processor. RISC: Characteristics - Large Register File - Register Optimisation - Architecture - RISC Vs CISC Characteristics - Pipelining.

UNIT V: Control Unit: Micro-Operations - Control of Processors - Hardwired Implementation - Micro Programmed Control Concepts -- Microinstruction Sequencing - General Microinstruction Execution.

References:

1. W. Stallings, Computer Organization and Architecture, 6th edition, PHI, 2003. 2. C. Hamacher, Z. Vranesic, S.Zaky, Computer Organization, 5th edition, Mcgraw Hill, 2002

Course Outcomes:

On completion of the course, student will be able to : Demonstrate computer architecture concepts related to design of modern processors, memories and I/Os. Analyze the performance of commercially available computers.

DATABASE MANAGEMENT SYSTEMS

Core

III Year & Fifth Semester

Learning Objectives

- Gain a good understanding of the architecture and functioning of Database Management Systems.
- Understand the use of Structured Query Language (SQL) and its syntax.
- Apply Normalization techniques to normalize a database.
- Understand the need of transaction processing and learn techniques for controlling the consequences of concurrent data access.

SYLLABUS

Unit 1

Advantages and Components of a Database Management Systems – Feasibility Study – Class Diagrams – Data Types – Events – Normal Forms – Integrity – Converting Class Diagrams to Normalized Tables – Data Dictionary.

Unit 2

Query Basics – Computation Using Queries – Subtotals and GROUP BY Command – Queries with Multiple Tables – Subqueries – Joins – DDL & DML – Testing Queries

Unit 3

Effective Design of Forms and Reports – Form Layout – Creating Forms – Graphical Objects – Reports – Procedural Languages – Data on Forms – Programs to Retrieve and Save Data – Error Handling.

Unit 4

Power of Application Structure – User Interface Features – Transaction – Forms Events – Custom Reports – Distributing Application – Table Operations – Data Storage Methods – Storing Data Columns – Data Clustering and Partitioning.

Unit 5

Database Administration – Development Stages – Application Types – Backup and Recovery – Security and Privacy – Distributed Databases – Client/Server Databases – Web as a Client/Server System – Objects – Object Oriented Databases – Integrated Applications.

Learning Outcomes

- Describe basic concepts of database system

- Understanding of major DBMS components and their function

- Able to write SQL commands to create tables and indexes, insert/update/delete data, and query data in a relational DBMS.

- Apply various Normalization techniques

Recommended Texts

G. V. Post – Database Management Systems Designing and Building Business Application – McGraw Hill International edition – 1999.

Reference Books

1. Raghu Ramakrishnan – Database Management Systems – WCB/McGraw Hill – 1998.

2. C.J. Date – An Introduction to Database Systems – 7th Edition – Addison Wesley - 2000.

Title of the Course/ Paper –IX - **OPERATING SYSTEMS**

Core III Year & Fifth Semester Credit: 4

Learning Objectives:
- To understand the fundamental concepts and role of Operating System.
- To learn the Process Management and Scheduling Algorithms
- To understand the Memory Management policies
- To gain insight on I/O and File management techniques

Unit 1: Introduction: Views –Goals –Types of system – OS Structure – Components – Services - System Structures – Layered Approach -Virtual Machines - System Design and Implementation. Process Management: Process - Process Scheduling – Cooperating Process – Threads - Interprocess Communication. CPU Scheduling : CPU Schedulers – Scheduling criteria – Scheduling Algorithms

Unit-2:– Process Synchronization: Critical-Section problem - Synchronization Hardware – Semaphores – Classic Problems of Synchronization – Critical Region – Monitors. Deadlock : Characterization – Methods for handling Deadlocks – Prevention, Avoidance, and Detection of Deadlock - Recovery from deadlock.

Unit 3: Memory Management : Address Binding – Dynamic Loading and Linking – Overlays – Logical and Physical Address Space - Contiguous Allocation – Internal & External Fragmentation . Non Contiguous Allocation:Paging and Segmentation schemes – Implementation – Hardware Protection – Sharing - Fragmentation.

Unit-4: Virtual Memory :: Demand Paging – Page Replacement - Page Replacement Algorithms – Thrashing. – File System: Concepts – Access methods – Directory Structure – Protection Consistency Semantics – File System Structures – Allocation methods – Free Space Management.

Unit-5 : I/O Systems: Overview - I/O Hardware – Application I/O Interface – Kernel I/O subsystem – Transforming I/O Requests to Hardware Operations – Performance. Secondary Storage Structures : Protection – Goals- Domain Access matrix – The security problem – Authentication – Threats – Threat Monitoring – Encryption..

Learning Outcomes:
- Understand the structure and functions of Operating System
- Compare the performance of Scheduling Algorithms
- Analyze resource management techniques

Recommended Texts

i. Silberschatz A., Galvin P.B., Gange,. 2002 , Operating System Principles ,Sixth Edition, John Wiley & Sons.

Reference Books

i. H.M. Deitel ,1990, An Introduction to Operating System,- Second Edition,Addis on Wesley

RDBMS LAB

Core : PRACTICAL – V

III Year & Fifth Semester   SUBCODE:SAE51   Credit: 4

Learning Objectives:

This course introduces fundamental programming skills using the Visual Basic Integrated Development environment. Students will learn program design, validation of user input, and how to create menu driven programs and multiple form applications.

SYLLABUS

Create database and performing the operations given below using a Menu Driven program: Insertion, (b)Deletion, (c)Modification, (d)Generating a reports (Simple) for the following Systems using any RDBMS package :

1. Payroll
2. Mark sheet Processing
3. Savings bank account for banking
4. Inventory System
5. Invoice system
6. Library information system
7. Student information system
8. Income tax processing system
9. Electricity bill preparation system
10. Telephone directory maintenance

Learning Outcomes:

The student will demonstrate knowledge of visual programming by

1. Creating a visual program to solve a problem.

2. Interpreting a series of instructions used in a visual program.

3. Identifying the basic structures of program (sequence, decision, and repetition).

4. Creating a GUI incorporating good design principles for a programming project.

Elective:III Year & Fifth Semester   SUBCODE: SEE5A   Credit: 4

Learning Objectives:

      This course provides the skills and knowledge required to use essential features and capabilities of Visual BASIC, a programming system used to produce Graphical User Interfaces and applications in a Windows environment. It includes basic programming concepts, problem solving, programming logic, and the design of event-driven programming.

SYLLABUS

Unit 1:

Customizing a Form - Writing Simple Programs - Toolbox - Creating Controls - Name Property - Command Button - Access Keys - Image Controls - Text Boxes - Labels - Message Boxes - Grid - Editing Tools - Variables - Data Types - String - Numbers.

Unit-2:

Displaying Information - Determinate Loops - Indeterminate Loops - Conditionals - Built-in Functions - Functions and Procedures.

Unit 3:

Lists - Arrays - Sorting and Searching - Records - Control Arrays - Combo Boxes - Grid Control - Projects with Multiple forms - DoEvents and Sub Main - Error Trapping.

Unit-4:

VB Objects - Dialog Boxes - Common Controls - Menus - MDI Forms - Testing, Debugging and Optimization - Working with Graphics.

Unit-5 :

Monitoring Mouse activity - File Handling - File System Controls - File System Objects - COM/OLE - automation - DLL Servers - OLE Drag and Drop.

Learning Outcomes:

      1. Understand Visual Basic applications.
      2. Understand how to perform operations and store results.
      3. Understand the concept of data-driven program execution flow control in Visual Basic programming.
      5. Understand loops to do repetition.

Recommended Texts:

1. Gary Cornell - Visual Basic 6 from the Ground up - Tata McGraw Hill - 1999.
2. Noel Jerke - Visual Basic 6 (The Complete Reference) - Tata McGraw Hill – 1999

Web Reference:

      https://www.vbtutor.net
      https://www.csus.edu/indiv/s/scanland/mis15/index_htm_files

Course Objectives

- To provide a solid conceptual understanding of the fundamentals of data communications.
- To learn the basic concepts of data communications.
- To learn the layered architecture of communication protocols.
- To learn digital signal transmission and encoding techniques.
- To learn multiplexing techniques.
- To learn the concepts and techniques in error detection and correction.
- To learn LAN architectures and systems.
- To learn the fundamental issues driving network design

Course Outline

Unit 1: Introduction to Data Communication, Network, Protocols & standards and standards organizations - Line Configuration - Topology - Transmission mode - Classification of Network - OSI Model - Layers of OSI Model.

Unit-2: Parallel and Serial Transmission - DTE/DCE/such as EIA-449, EIA-530, EIA-202 and x.21 interface - Interface standards - Modems - Guided Media - Unguided Media - Performance - Types of Error - Error Detection - Error Corrections.

Unit-3: Multiplexing - Types of Multiplexing - Multiplexing Application - Telephone system - Project 802 - Ethernet - Token Bus - Token Ring - FDDI - IEEE 802.6 - SMDS - Circuit Switching - Packet Switching - Message switching - Connection-Oriented and Connectionless services.

Unit-4: History of Analog and Digital Network - Access to ISDN - ISDN Layers - Broadband ISDN - X.25 Layers - Packet Layer Protocol - ATM - ATM Topology - ATM Protocol.

Unit-5: Repeaters - Bridges - Routers - Gateway - Routing algorithms - TCP/IP Network, Transport and Application Layers of TCP/IP - World Wide Web.

1. Recommended Texts

        i.Behrouz and Forouzan,2001,Introduction to Data Communication and Networking, 2nd Edition,TMH.

2. Reference Books

i.Jean Walrand 1998,Communication Networks (A first Course),Second Edition, WCB /

  McGraw Hill.

  ii. Behrouz and Forouzan,2006,Data Communication and Networking,3nd Edition ,TMH.

Course Outcomes

- Interpret the components, tools and techniques of communication systems
- Illustrate the TCP/IP and OSI Reference model and identify their differences in implementation within and across enterprises.
- Explain how information can be sent via communication interfaces and links.
- Determine the various modulation and error detection and correction techniques and their application in communication systems.

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DATA MINING

ELECTIVE-II

BSc III YEAR/VI SEMESTER

Learning Objectives

1. To introduce students to the basic concepts and techniques of Data Mining
2. To develop skills of using recent data mining software for solving practical problems.
3. To gain experience of doing independent study and research.
4. Develop and apply critical thinking, problem-solving, and decision-making skills.
5. Develop and apply enthusiasm for learning. Class participation is encouraged in this course.
6. classroom discussions and learning by communicating interest, suggestions for improvements, additional readings and Internet resources, is a major goal. Express diligence, enthusiasm, patience, and thoroughness in dealing with complicated analysis and procedures and less-than- perfect-constantly evolving technology

SYLLABUS

Unit-1: Introduction: Data mining – Functionalities – Classification – Introduction to Data Warehousing – Data Preprocessing : Preprocessing the Data – Data cleaning – Data Integration and Transformation – Data reduction

Unit-2: Data Mining, Primitives, Languages and System Architecture: Data Mining – Primitives – Data Mining Query Language, Architectures of Data mining Systems. Concept Description, Characterization and Comparison: Concept Description, Data Generalization and summarization, Mining Class Comparison

Unit-3: Mining Association Rules: Basics Concepts – Single Dimensional Boolean Association Rules From Transaction Databases, Multilevel Association Rules from transaction databases – Multi dimension Association Rules from Relational Database and Data Warehouses.

Unit-4: Classification and Prediction: Introduction – Issues – Decision Tree Induction – Bayesian Classification.Classification based on A-16 2 Concepts from Association Rule Mining – Other Methods. Prediction – Introduction – Classifier Accuracy.

Unit-5: Cluster Analysis: Introduction – Types of Data in Cluster Analysis, Partitioning Methods – Hierarchical Methods Density Based Methods – GRID Based Method – Model based Clustering Method.

Learning Outcomes:

1.Understand data mining principles and techniques: Introduce DM as a cutting edge business intelligence method and acquaint the students with the DM techniques for building competitive advantage through proactive analysis, predictive modeling, and identifying new trends and behaviours.

2. Building basic terminology.

3. Learning how to gather and analyze large sets of data to gain useful understanding.

4. Learning how to produce a quantitative analysis report/memo with the necessary information to make decisions.

5. Describing and demonstrating basic data mining algorithms, methods, and tools

6. Identifying business applications of data mining

7. Overview of the developing areas - web mining, text mining, and ethical aspects of data mining.

RECOMMENDED TEXT i.J.Han and M. Kamber,2001,Data Mining Concepts and Techniques,Harcourt India Pvt. Ltd - New Delhi.

REFERENCE BOOKS 1. K.P. Soman , Shyam Diwakar, V.Ajay ,2006, Insight into Data Mining Theory and Practice, Prentice Hall of India Pvt. Ltd - New Delhi.

WEBSITE, E-LEARNING RESOURCES i http:// www.academicpress.com ii. http://www.mkp.com

SOFTWARE ENGINEERING

III Year & VI Semester

Learning Objectives

- To understand and apply the software development life cycle for a project
- To understand software requirements and the role of project management
- To understand appropriate Design principles to S/W project development
- To understand and implement the software testing approaches with software measurement parameters and risks
- To understand quality control and ensure good quality software

SYLLABUS

UNIT - I:
Introduction to Software Engineering: Definitions - Size Factors - Quality and Productivity Factors - Managerial Issues - Planing a software project : Defining the problem - Developing a Solution Strategy - Planning the Development Process - Planning an Organization structure - Other Planning Activities.

UNIT - II:
Software Cost Estimation: Software cost factors - Software Cost Estimation Techniqes - Staffing-level Estimation - Estimating Software Maintenance Costs - The Software Requirements Specification – Formal Specification Techniques - Languages and Processors for Requirements Specification.

UNIT - III:
Software design: Fundamental Design Concepts - Modules and Modularization Criteria - Design Notations - Design Techniques - Detailed Design Considerations - Real-Time and Distributed System Design - Test Plans - Milestones, walkthroughs, and Inspections.

UNIT - IV:
Implementation issues: Structured Coding Techniques - Coding Style - Standards and Guidelines - documentation guidelines -Type Checking - Scoping Rules - Concurrency Mechanisms.

UNIT - V:
Quality Assurance - Walkthroughs and Inspections - Static Analysis - Symbolic Execution - Unit Testing and Debugging - System Testing - Formal Verification: Enhancing Maintainability during Development - Managerial Aspects of Software Maintenance - Source Code Metrics - Other Maintenance Tools and Techniques.

Learning Outcomes

- To apply software engineering principles and techniques
- To introduce the methodology of planning, developing and testing a software project
- To develop, maintain and evaluate large-scale software systems
- To produce efficient, reliable, robust and cost-effective software solutions

Books for Study:

1. R.Fairley, Software Engineering Concepts, Tata McGraw-Hill Edn. 1997.

2. R.SPressman, Software Engineering, Fourth Ed., McGraw Hill, 1997.

WEB APPLICATIONS LAB

Core: PRACTICAL – VI

III Year & Sixth Semester　　　　SUBCODE: SAE61　　　　Credit: 5

Learning Objectives:

The students will be able to: · Analyze a web page and identify its elements and attributes. Create web pages using JavaScript / VB Script(Client side programming) and ASP.NET . This course gives training in web design and applications.

SYLLABUS

VB SCRIPT & JAVASCRIPT

1. Write a program outputs the squares, roots, cubes and complements of integers between 1 and 100.

2. Create a calculator.

 3. Write a script to Sort numbers and strings

4. Create a program to generate a hit counter

5. Create a program to verify whether email address provided by user is valid or invalid.

6. Write a program to scroll the text on status bar.

7. The form consists of two multiple choice list and one single choice list

　　　a. the first multiple choice list display the major dishes available.

　　　b. the second Multiple choice list display the stocks available.

　　　 c. The single choice list display the miscellaneous (Milkshakes, soft drinks, softy available etc.)

8. Write a script to create a digital clock.

 9. Create a web page using two image file which switch black and white one another as the mouse pointer moves over the image. Use the On Mouse over and On Mouse event, onDblclick handler

 10. Build a WWW page with an image and 3 buttons., Pick three favorite graphics, Label the buttons and make each one swap in the graphic you have chosen

11. Create a frameset that has two frames, side by side.

　　　1. Make the left-hand frame contain a form with 3 radio buttons

　　　2. The buttons should be for three search engines:

a. Yahoo (http://www.yahoo.com)

b. Altavista (http://www.altavista.com)

c. Infoseek (http://www.infoseek.com)

3. When the user clicks on of the option buttons, the frame on the right hand side should be loaded with the right search engine.

12. Write a program to implement Employee database with all validation

ASP

1. Create a login form, to expire, if the user does not type the password within 100 seconds

2. Create an employee database and manipulate the records using command object in ASP

3. Develop an application to illustrate the usage of Request and Response Objects in ASP.

4. Write an ASP program using Request Object to give the exact list of headers sent by the browser to the Web server.

5. Create an Active Server Page to display the records one by one from a student database. The student database should contain roll no, name, marks & total.

6. Design an ASP application that describes books in the Online Bookshop.(Use AD Rotator Component, Content Rotator Component, Content Linking Component)

7. Create a document and add a link to it. When the user moves the mouse over the link it should load the linked document on its own (User is not required to click on the link).

8. Create a document, which opens a new window without a toolbar, address bar, or a status bar that unloads itself after one minute.

9. Create a document that accepts the user's name in a text field form and displays the same the next time when the user visits the site informing him that he has accessed the site for the second time, and so on.

Learning Outcomes:

At the end of the course, students should be able to:

• Design and implement dynamic websites with good aesthetic sense of designing and latest technical know-how's.

• Have a Good grounding of Web Application Terminologies, Internet Tools and other web services.

WEB TECHNOLOGY

Core Paper -XIV

III Year & Sixth Semester   SUBCODE: SAE6B   Credit: 4

Learning Objectives:

The main objective of the course is present the basic web technology concepts that are required for developing web applications. The key technology components are descriptive languages, server-side program elements and client-side program elements. This course introduces the concepts of ASP, VB Script , Java Script.

SYLLABUS

Unit 1:

Introduction to` VBScript - Adding VBScript Code to an HTML Page - VB Script Basics - VBScript Data Types - VBScript Variables - VBScript Constants - VBScript Operators – mathematical- comparison - logical - Using Conditional Statements - Looping Through Code - VBScript Procedures – type casting variables - math functions –date functions – string functions –other functions - VBScript Coding Conventions - Dictionary Object in VBScript - Err Object

Unit-2:

Introduction to Javascript – Advantages of Javascript – Javascript syntax - Data type – Variable - Array – Operator & Expression – Looping – control structures - Constructor Function – user defined function Dialog Box .

Unit 3:

Javascript document object model – Introduction – Object in HTML – Event Handling – Window object – Document object – Browser object – Form object – Navigator object – Screen object – Build in object – User defined object – Cookies.

Unit-4:

ASP.NET Language Structure – Page Structure – Page event , Properties & Compiler Directives . HTML server controls – Anchor, Tables, Forms, Files . Basic Web server Controls – Lable, Text box, Button, Image Links, Check & radio Button, Hyperlink, Data List Web Server Controls – Check box list. Radio button list, Drop down list, List box, Data grid, Repeater.

Unit-5:

Request and Response Objects, Cookies, Working with Data – OLEDB connection class, command class, transaction class, data adaptor class, data set class. Advanced issues – email, Application issues, working with IIS and page Directives, error handling. Security – Authentication, IP Address, Secure by SSL & Client Certificates

Learning Outcomes:

- Students are able to develop a dynamic webpage by the use of java script and VB Script
- Design and development of web-pages and web-applications using ASP.NET
- Use of development tools General competencies: - Use of web technology - Retrieval of information, use of documentation and standards

Recommended Texts

i.I.Bayross, 2000, Web Enable Commercial Application Development Using HTML, DHTML, Javascript, Perl CGI, BPB Publications.

ii. A.Russell Jones, Mastering Active Server Pages 3, BPB Publications.

Reference Books

i. HathleenKalata, Internet Programming with VBScript and JavaScript, Thomson Learning

ii. Mike McGrath, XML Harness the Power of XML in easy steps, Dreamtech Publications

iii. T.A. Powell, 2002,Complete Reference HTML , TMH.

iv. J.Jaworski, 1999, Mastering Javascript, BPB Publications.

v. Powell, Thomas; Schneider, Fritz, JavaScript: The Complete Reference, 2nd edition2004, TMH

BASICS OF TOURISM

ELECTIVE- II

BA TTM III YEAR/V SEMESTER

Learning Objectives

1. The objectives of tourism is to visit such places for the purpose of faith,education, curiosity, entertainment, fun and happiness
2. Understand the concepts of travel and tourism
3. The framework of the system, types and form of tourism as well as the impacts of tourism.
4. To learn basics about Computers.
5. To Construct the table of Tourism places , food, timing etc.

SYLLABUS

UNIT 1 – Introduction: The Structure of Computers – Computers and Functions – Overview of Computer Organisations – Computer Representation of information – The Arithmetic Logic Unit – The Control Unit – Memory – Input and Output Devices – Storage Devices

UNIT 2 – Word Processing: Creating Word Documents – Editing Document Text, Applying Text Enhancements – Aligning and Formatting, Adding Lists – Numbers – Symbols and the date and time replacing and checking text getting into print. Formatting pages – Working with columns – Constituting high quality tables – Managing data in Word – Creating customized merge documents – Publishing online Forms

UNIT 3 – Data Planning and Creating Tables – Creating and Using Forms – Modifying Tables – Working with External Data – Creating the Relational Data Base – Enhancing Form Design – Producing reports Creating Queries

UNIT 4 – Internet: Introduction to Internet – Resources of Internet – Hardware and Software requirements of Internet – Internet Service Providers – Internet Addressing – Mail using Mail from a Shell Account – Introduction to Web – Using the Web

UNIT 5 – Tourism: Introduction to Tournet, Features of Tour Manager: Costing, Reservation and Cancellation, Requests, Preparation of Exchange orders, Invoicing and Accounts

LIST OF PRACTICAL EXPERIMENTS

1. Creating Mail merged documents in MS WORD for example, Interview call letters

2. Typing tables in Ms Word

3. Creating a Timetable for tour in MS-EXCEL

4. Draw a graph in EXCEL

5. Draw a graph to compare prices across year of multiple products

6. Preparing Tour budget using EXCEL

7. Creating a Power Point presentation to promote a product.

8. Creating a PPT Slide show with clip art and image files

9. Spelling checking, formatting and printing in WORD

10. Update files in MS-Access

11. Use reports to generate summaries in Ms-Access

12. Use PPT Facilities to create and automate slide show (including transition)

13. Computing variance analysis using EXCEL

14. Using data from Ms-Access to mail, merge a document in MS-WORD

15. Drawing various types of graphs in EXCEL

Learning Outcomes:

1. 1. Display an understanding of the production, implementation, and impacts of tourism development locally, nationally, and internationally.

2. Demonstrate cultural and environmental sensitivity through an appreciation for various forms of diversity in our worlds.

3. Conduct research ethically, as evidenced through effective research design and implementation.

4. Write clearly and concisely in the conventions of tourism studies.

5. Exhibit effective oral communication through personal interaction as well as classroom presentations, individually or as part of a group, to a larger audience.

6. Demonstrate critical thinking and analytical skills through writing and verbal assessments

7. Possess skills and experience relating to the management and production of tourism in a professional setting.

BOOKS FOR REFERENCES

1. V. Rajaraman – Introduction to Computer Science

2. Gini Courter, Annette Marquis – Microsoft Office 2000

3. Harely Han – Internet Complete Reference

OFFICE AUTOMATION LAB

NME
I YEAR / II SEM

Learning Objectives:

➢ To acquire knowledge in working with MicroSoft office using MS-Word, MS-Excel, and MS-Power point

LIST OF EXERCISES:

MS-WORD
1. Text Manipulation: Write a paragraph about your institution and Change the font size and type, Spell check, Aligning and justification of Text
2. Bio data: Prepare a Bio-data.
3. Find and Replace: Write a paragraph about yourself and do the following. Find and Replace - Use Numbering Bullets, Footer and Headers.
4. Tables and manipulation: Creation, Insertion, Deletion (Columns and Rows). Create a mark sheet.
5. Mail Merge: Prepare an invitation to invite your friends to your birthday party. Prepare at least five letters.

MS-EXCEL
1. Data sorting-Ascending and Descending (both numbers and alphabets)
2. Mark list preparation for a student
3. Individual Pay Bill preparation.
4. Invoice Report preparation.
5. Drawing Graphs. Take your own table.

MS-POWERPOINT
1. Create a slide show presentation for a seminar.
2. Preparation of Organization Charts
3. Create a slide show presentation to display percentage of marks in each semester for all students
   1. Use bar chart(X-axis: Semester, Y-axis: % marks).
   2. Use different presentation template different transition effect for each slide.

Learning Outcomes:

➢ Implement the Microsoft office tools in the office environment for Accounts maintaining, Documenting, and giving presentations using PowerPoint

OFFICE AUTOMATION

NME
I YR / I SEM

Learning Objectives:

➢ To provide an in-depth training for students in Microsoft Office which has different components like MS Word, MS Excel and Power point. The course is highly practice oriented rather than regular class room teaching.

SYLLABUS

UNIT - I
Introductory concepts: History - Generation - Classification - Block diagram - Memory unit – CPU.

UNIT - II
Input Devices: Key board, Mouse and Scanner. Output devices: Monitor, Printer. Introduction to Operating systems & its features: DOS – UNIX – Windows. Introduction to Programming Languages: C, C++ and its features.

UNIT - III
Word Processing: Open, Save and close word document; Editing text – tools, formatting, bullets; Spell Checker - Document formatting – Paragraph alignment, indentation, headers and footers, numbering; printing – Preview, options, merge .

UNIT - IV
Spreadsheets: Excel – opening, entering text and data, formatting, navigating; Formulas – entering, handling and copying; Charts – creating, formatting and printing.

UNIT - V
Power point: Introduction to Power point - Features – Understanding slide types – creating & viewing slides – creating slide shows. Applying special object – including objects & pictures – Slide transition – Animation effects.

Learning Outcomes:
After completion of the course, students would be able to work with
➢ Documentation using MS-Word
➢ Accounting operation using MS-Excel
➢ Make small presentations with Powerpoint presentation

TEXT BOOKS:
1. Alexis Leon and Mathews Leon, "*Fundamentals of information technology*", Leon Press 1999, 2nd Edition.
2. Peter Norton, "*Introduction to Computers*", Tata McGraw Hill.

REFERENCE BOOK:
1. Jennifer Ackerman Kettel, Guy Hat-Davis and Curt Simmons, "*Microsoft 2003*", Tata McGraw Hill.

WEB REFERENCE:
➢ NPTEL & MOOC courses titled Office Automation.
➢ https://www.livewireindia.com/microsoftoffice_automation_software_training.php