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For Complete Course: 180 140 1105 2895 4000
Semester : I                           Hours/week : 5
Code : 08UCA1301                                      Credits : 3

Allied-I : BASIC MATHEMATICS AND STATISTICS

Objectives: To provide knowledge of various branches of business mathematics and to motivate the students to apply the techniques.

UNIT-I

UNIT-II

UNIT-III

UNIT-IV

UNIT-V

Text Books:

Core-I(a) : PROGRAMMING IN C

Objectives: To learn the syntax of all the statements and to provide programming skills in C.

UNIT-I
Evolution and Basic Structure of C Programs – Data Types – Variables – Operators – Library Functions.

UNIT-II

UNIT-III
Arrays – Strings – Structures – Unions

UNIT-IV

UNIT-V
Files – I/O Operations on Files – Random Access Files.

Text Book:
Core-I (a) : C PROGRAMMING LAB

1. Simple Programs
   (i) Simple Interest
   (iii) Calculating area of rectangle, square and triangle

2. Programs using if–else Statement
   (i) Program to find odd or even of a given number
   (ii) Program to find biggest of three numbers(using & without using logical operators)

3. Programs using Loop control structure (for, while and do while Loop)
   (i) Sum of digits & Factorial of a given number using loops.

4. Programs using Switch control structure
   (i) To simulate simple calculator.

5. Programs using functions
   (i) To find the value of nCr (using recursion).
   (ii) Swapping two number using function and pointers.(Call by reference)

7. Programs using Arrays
   (i) Matrix Manipulations (Addition, Subtraction and Multiplication)
   (ii) Sorting numbers (Ascending and Descending)

8. String manipulations (without using string functions )
   (i) Palindrome
   (ii) Alphabetical order

9. Program using files:
   (i) Payroll Preparation
   (ii) Mark Sheet Preparation
Core-II: PRINCIPLES OF PROGRAMMING

Objectives: To learn the syntax of all the statements and to provide programming skills in C.

UNIT-I
Evolution and Basic Structure of C Programs – Data Types – Variables – Operators – Library Functions.

UNIT-II

UNIT-III
Arrays – Strings – Structures – Unions

UNIT-IV

UNIT-V
Files – I/O Operations on Files – Random Access Files.

Text Book:
Skill Based Elective-I: OFFICE AUTOMATION

Objectives: To understand the basic concepts MS-Windows, MS-Word, MS-Excel and MS-PowerPoint

UNIT-I


UNIT-II

MS-WORD - Word basics - Formatting text and documents - Working with headers, footers and foot notes - Tabs, Tables and Sorting.

UNIT-III


UNIT-IV


UNIT-V

MS-POWERPOINT - Creating a new slide - Formatting text and slide, working with slide show - Insert files, picture, textbox sounds, Chart and Object - Different slide views - Using Auto correct, Auto format and Macros.

Text Books:

Allied-II : DIGITAL PRINCIPLES & APPLICATIONS

Objectives: To understand the principles of digital logic circuits and their design.

UNIT I
Number Systems – Decimal, Binary, Octal and Hexadecimal systems – Conversion from One System to Another.
– Binary Addition, Subtraction, Multiplication and Division – Binary Codes – 8421, 2421, Excess-3, Gray, BCD
– Alphanumeric Codes – Error Detection Codes.

UNIT II
Basic Logic Gates – Universal Logic – Boolean Laws and Theorems – Boolean Expressions – Sum of Products –
Product of Sums – Simplification of Boolean Expressions – Karnaugh Map Method – Implementation of Boolean
Expressions using gate networks.

UNIT III
Combinational Circuits – Multiplexers – Demultiplexers – Decoders – Encoders – Arithmetic Building Blocks –
Half and Full Adders – Half and Full Subtractors – Parallel adder – 2’s Complement Adder-Subtractor – BCD
Adder.

UNIT IV
Sequential Circuits – Flip Flops – RS, Clocked RS, D, JK, T and Master-Slave Flip Flops – Shift Register –
Counters – Asynchronous and Synchronous counters – Mod n Counter – Ring Counter.

UNIT V
Microprocessors : Introduction – Intel 8085 Architecture – Instruction Formats – Addressing Modes – Instruction
Set : Data Transfer Instructions – Arithmetic & Logic Instructions – Jump Instructions – Simple Programs (8-bit
Addition, Subtraction, Multiplication, Division, Multibyte Addition, Multibyte subtraction, Sum of Series, Block
Data Transfer, Biggest and Smallest Number)

Text Books
1. Albert Paul Malvino and Donald P. Leach, Digital Principles and Applications, Tata
2. Badri Ram, Fundamentals of Microprocessors and Microcomputers, Fifth Edition,
Allied-III : OPERATIONS RESEARCH

Objectives: To provide an overall idea about the various operations research techniques and their applications.

UNIT-I

UNIT-II
Solutions of LPP - Simplex Method - Use of Artificial Variables - Charne's Big-M Method - Two Phase Simplex Method.

UNIT-III

UNIT-IV
Sequencing Problems – Processing of \( n \) Jobs through 2 Machines – Processing of \( n \) Jobs through 3 Machines – Processing of 2 Jobs through \( m \) Machines.

Game theory – Characteristics of Games – Two-Person Zero – Sum Games – Maximin – Minimax Principle – Games without Saddle Points – Mixed Strategies – Graphical Solution of Solving \( 2 \times n \) and \( m \times 2 \) Games – Dominance Property.
UNIT-V

Network Scheduling by PERT / CPM – Basic Concept – Construction of Networks – Critical Path Method – Computation of Various Floats – PERT Algorithm – Statistical Considerations – Comparison of PERT and CPM.

Text Book:


Reference Books:


Semester : II                                        Hours/week : 6
Code : 08UCA2403                                       Credits : 4

Core-III : PROGRAMMING IN COBOL

Objectives: To give the syntax of statements in COBOL language. To impart the programming skills in COBOL.

UNIT-I

UNIT-II

UNIT-III

UNIT-IV
PERFORM statement - Table Handling – OCCURS clause and subscripting – Assigning Values to Table Elements – Multi-dimensional Tables – PERFORM Verb and Table Handling – PERFORM with TIMES option – PERFORM with UNTIL option – PERFORM with VARYING option.

UNIT-V

Text Book:

UNIT I : 3.1 – 3.8, 4.1, 4.2, 5.1 – 5.6
UNIT II : 6.1 – 6.6
UNIT III : 8.3 – 8.5, 9.1, 9.2.1, 10.1, 10.2, 10.2.1, 10.3
UNIT IV : 10.5, 11.1 – 11.4
UNIT V : 13.1 – 13.4, 14.1, 14.4

Reference Book:
Allied-IV : PRINCIPLES OF ACCOUNTANCY

Objectives: To provide the basic knowledge of the financial accounting including double entry book keeping, preparation of journal, subsidiary book, ledger, trial balance and balance sheet.

UNIT-I

UNIT-II

UNIT-III
Trail balance – Preparation – Errors disclosed and errors not disclosed by its suspense account – Rectification of errors.

UNIT-IV
Preparation of final accounts – Trading account, Profit and loss account, Balance sheet – Adjusting and closing entries.
Methods of Depreciation (fixed percentage on original cost methods and diminishing balance method only)

UNIT-V

80% - Problems
20% - Theory

Text Book:
Core - IV: OBJECT ORIENTED PROGRAMMING WITH C++

Objectives: To give the concepts of Object Oriented Programming, the syntax of statements in C++ language and to impart the programming skills in C++.

UNIT-I

UNIT-II
Classes and Objects – Specifying a Class – Defining Member Functions – A C++ program with Class – Static Members – Arrays of Objects – Objects as Function Arguments – Friendly Functions – Returning Objects.

UNIT-III

UNIT-IV

UNIT-V

Text Book:
Core-V : COBOL PROGRAMMING LAB

1. Program to compute simple interest and compound interest using
   a) COMPUTE verb
   b) Arithmetic verbs

2. Program to find the biggest of three numbers using
   a) IF … ELSE statement
   b) Nested IF statement.

3. a) Program to find the given number is odd or even.
   b) Program to convert the temperature given in Fahrenheit into Celsius.

4. Program to determine the following using PERFORM with UNTIL option.
   a) Sum of digits of a given number.
   b) Factorial of a given number.

5. The following table shows three categories of employees working in a University
   and their PF contributions with their category code. Write a program to compute the
   PF contribution using GO TO with DEPENDING Phrase.

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<td>Reader</td>
<td>15 % of Basic Pay</td>
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<td>Lecturer</td>
<td>10 % of Basic Pay</td>
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6. Program to find largest of ‘N’ given numbers using OCCURS clause.

7. Program to create and process the following applications using sequential files:
   a) Mark list preparation
   b) Payroll preparation
   c) Electricity bill preparation

8. Program to sort a file.

9. Program to merge the files.
Skill Based Elective-II : WEB DESIGN

Objectives: To present the fundamental concepts of Internet, Internet Technologies, Network Topologies and to give the knowledge on HTML.

UNIT-I


UNIT-II

Internet Technologies - Modem, Internet Addressing, Physical Connections, Telephone Lines. Internet Browsers - Internet Explorer, Netscape Navigator.

UNIT-III


UNIT-IV

Introduction to HTML - History of HTML, HTML Documents, Anchor Tag, Hyper Links. Head and body sections - Header Section - Title, Prologue, Links, Colorful Web Page, Comment Lines.

UNIT-V

Designing Body Sections - Heading printing, Aligning the headings, Horizontal rule, Paragraph, Tab Settings, Lists, Unordered Lists, Ordered Lists.

Text Books:


2. Kris Jamsa and Ken Cope, *Internet Programming*
Non Major Elective-III : PROGRAMMING IN C++

Objectives: To give the concepts of Object Oriented Programming, the syntax of statements in C++ language and to impart the programming skills in C++.

UNIT I

UNIT II
Classes and Objects – Specifying a Class – Defining Member Functions – A C++ program with Class – Static Members – Arrays of Objects – Objects as Function Arguments – Friendly Functions – Returning Objects.

UNIT III

UNIT IV

UNIT V

Text Book:
Objectives: To understand the principles of digital logic circuits & their design. To understand the working of a central processing unit architecture of a computer.

UNIT-I

UNIT-II

UNIT-III
Central Processing Unit: General Register Organization – Stack Organization – Instruction Formats – Addressing Modes – Data Transfer and Manipulation – Program Control.

UNIT-IV

UNIT-V
Memory Organization: Memory Hierarchy – Main Memory – Auxiliary Memory – Associative Memory – Cache Memory – Virtual Memory.

Text Book:

Unit-I : 4.1 – 4.7
Unit-II : 5.1 – 5.4, 5.6 – 5.7, 6.1 – 6.4
Unit-III: 8.1 – 8.7
Unit-IV: 11.1 – 11.4, 11.6 – 11.7
Unit-V : 12.1 – 12.6
Core-IV (a) : PROGRAMMING IN C++

Objectives: To give the concepts of Object Oriented Programming, the syntax of statements in C++ language and to impart the programming skills in C++.

UNIT-I

UNIT-II

Classes and Objects – Specifying a Class – Defining Member Functions – A C++ program with Class – Static Members – Arrays of Objects – Objects as Function Arguments – Friendly Functions – Returning Objects.

UNIT-III

UNIT-IV

UNIT-V
Text Book:

**UNIT I** : 1.2, 1.5, 1.6, 1.8, 2.6, 3.1 – 3.24
**UNIT II** : 4.1 – 4.7, 4.9, 5.3 – 5.5, 5.11 – 5.16
**UNIT III** : 6.1 – 6.4, 6.7, 6.11, 7.1 – 7.5, 7.7
**UNIT IV** : 8.1 – 8.3, 8.5, 8.6, 8.9, 9.1 – 9.7
**UNIT V** : 10.1 – 10.5, 11.1 – 11.5

Reference Book:
Core-VII : JAVA PROGRAMMING

**Objectives:** To understand the basic concepts of Object Oriented Programming with Java language

**UNIT-I**


**UNIT-II**

Java as an OOP Language – Defining Classes – Modifiers – Packages – Interfaces.

**UNIT-III**


**UNIT-IV**


**UNIT-V**

Text Book:

Reference Book:
Core-VIII: DATABASE MANAGEMENT SYSTEMS

Objectives: To provide the concepts of database management systems and RDBMS including transaction management and concurrency control.

UNIT-I

UNIT-II

UNIT-III

UNIT-IV

UNIT-V

Text Book:
Objective: To understand the concepts of Visual Basic and to develop simple applications.

UNIT-I


UNIT-II


UNIT-III


UNIT-IV


UNIT-V


Text Book:

1. Simple Programs using Control Statements
   a) Biggest among the 3 numbers using if..else statement
   b) Sum of the digits using while and do..while loop
   c) Sorting the set of elements using for loops
   d) Perform all the arithmetic operations using switch statement

2. Simple Programs using Recursive Functions
   a) Factorial of the given number
   b) nCr value of the given numbers

3. Program using String Handling functions
   a) Count the number of vowels, consonants and words in a given sentence
   b) Arrange the set of names in Alphabetical order

4. Classes and Objects
   a) Define a class Circle and find out the area and circumference of a circle.
      [Use overloaded Constructors and static constant value of PI ]
   b) Define a class Complex and pass the Complex type objects to add() method and it should return a
      same type object as return value.

5. Inheritance, Interfaces and Packages
   a) Program using single Inheritance
   b) Program using Multiple Inheritance
   c) Prepare a student information system using set of classes in a package

6. Multithreading
   a) Create a Thread using Thread class
   b) Create a Thread using Runnable Interface

7. Exception Handling
   a) Write Java Programs to handle the following Exceptions
      i. DivideByZeroException
      ii. ArrayIndexOutOfBoundsException
      iii. NumberFormatException
      iv. NullPointerException

8. Streams and Applet
   a) Program to copy the characters from one file in to another File
   b) Program to concatenation of two files
   c) An Applet program to prepare a BIO-DATA format
   d) An Applet program to display geometrical objects
Core-X (b) : WEB DESIGN LAB

1. Develop a HTML document and perform the basic alignments on the headers and format the document using suitable tags.

2. Develop a HTML document to display the advantages and disadvantages of Internet using ordered and unordered list tags facilities.

3. Develop a home page for your company with suitable name, logo, pictures, background design and color text with links.

4. Design a web page of your meals menu for a week using table tag with its attributes.

5. Develop a simple application by using frame controls.

6. Develop a web page to display the Resume registration form with suitable controls.

7. Develop a JavaScript that reads five integers and determines the largest and the smallest integers in the group.

8. Develop a JavaScript for a recursive function to calculate the Fibonacci value of a given number.

9. Develop a JavaScript function to display current date and time using date object.

10. Develop a VBScript to add two integers.

11. Develop a VBScript to validate an HTML form.

12. Develop a VBScript to show how to set up multiple values for a cookie.
Elective-II: MULTIMEDIA AND ITS APPLICATIONS

Objectives: To understand the concepts and technologies involved in Multimedia and its applications.

UNIT-I


UNIT-II


UNIT-III


UNIT-IV


UNIT-V


Text Book:

Skill Based Elective-III : E-COMMERCE

Objectives: To provide the concepts of E-Commerce and its technologies, networking, internet and security issues.

UNIT-I

E-commerce and overview – Types of E-commerce solutions – Social and Ethical Issues surrounding E-commerce – Applications of E-Commerce

UNIT-II

Electronic Communication and Essential Tools for E-commerce: Data Communication – Forms of data transmission – Data Transmission techniques – Communication channel bandwidths – Types of communication channel – Transmission modes

UNIT-III


UNIT-IV


UNIT-V


Text Book:

Skill Based Elective-III: PC HARDWARE AND TROUBLESHOOTING

Objectives: To provide the basic concepts of PC hardware components. To assemble and troubleshoot a PC.

UNIT-I


UNIT-II


UNIT-III


UNIT-IV

Keyboard – Keyboard Switch – Keyboard Organization – Keyboard Type – Troubleshooting Keyboard – Mouse – Mouse Type – Connecting Mouse – Mouse Resolution – Scroll Mouse/Wheel Mouse – Using a Mouse – Mouse Installation – Troubleshooting Mouse – Cleaning the Mouse – Swapping Mouse Buttons.

UNIT-V

Hard Disk Drive – Installing/Upgrading Hard Disk Drive (Hardware & Software Perspective) – HDD Troubleshooting – Making Your Own Computer.

Text Book:

Core-XI: COMPUTER NETWORKS

Objectives: To learn the concepts of data communication technologies and computer networks. To understand the applications, management and security aspects in networks.

UNIT-I

UNIT-II

UNIT-III

UNIT-IV

UNIT-V

Text Book:
Core-XII : SOFTWARE ENGINEERING

Objectives : To provide knowledge of the various phases of software engineering process.

UNIT-I

UNIT-II

UNIT-III

UNIT-IV

UNIT-V

Text Book :

Reference Book:
Objectives: To provide basic knowledge of the real time projects of the IT industry. To develop mini real time softwares using any platforms such as Java, VB, .NET, etc.
Major Based Elective-II: WAP and WML

**Objectives:** To learn the concepts and security features of Wireless Application Protocol. To understand WML and WML script.

**UNIT-I**


**UNIT-II**


**UNIT-III**


**UNIT-IV**

Java, XML and WAP – Introduction to Servlets – Introduction to JSP – Design Considerations – ColdFusion – WAP and ColdFusion – ColdFusion Studio/HomesSite Editing Features for WAP Development.

**UNIT-V**


**Text Book:**

Semester : VI  
Hours/week : 5

Code        : 08UCA6503                  
Credits : 5

Major Based Elective-III : OPERATING SYSTEMS

Objectives : To provide fundamental concepts of all managements in an Operating System.

UNIT-I

Evolution of operating system-basic concepts & terminology –an operation system resource manager –views of operating system –types of operating system –I/O programming-Interrupt structure & processing –Interrupt types – Interrupt mechanism-Interrupt handle processing.

UNIT-II

Single contiguous allocation – example of multiprogramming-Partitioned memory management-Paged memory management-Demand paged memory management-Segmented memory management-Segmented and Demand paged memory management-Swapping and Overlays.

UNIT-III


UNIT-IV


UNIT-V

Simple file system- general model of a file system- logical file system-physical file system-Security threats and goals-Security policies and mechanisms -Case Studies : MS-DOS & UNIX (Commands , System calls & implementation ).
Text Book:


Reference Book:

Skill Based Elective - V : TALLY LAB

1. Architecture and customization of Tally
2. Configuration of Tally
3. Tally Screens and Menus
4. Creation of new company and groups.
5. Preparation of voucher entries.
   a. Payment voucher
   b. Receipt voucher
   c. Sales voucher
   d. Purchase voucher
   e. Contra voucher
   f. Journal voucher
6. Ledger Creation
7. Preparation of Trail balance
8. Preparation of Profit and loss statement.
10. Preparation of Bank Reconciliation Statement
Skill Based Elective-VI : SHELL PROGRAMMING

Objectives : To provide the fundamental concepts of Unix and shell programming.

UNIT-I

Introduction to UNIX – Files and Commands – Directories – The Shell.

UNIT-II


UNIT-III


UNIT-IV

Filters – The grep Family – Other Filters – The Stream Editor sed – The awk Pattern Scanning and Processing Language – Good Files and Good Filters.

UNIT-V


Text Book :


Reference Book: