COURSE STRUCTURE
AND
DETAILED SYLLABUS

ELECTRONICS AND COMMUNICATION ENGINEERING

For
B.TECH FOUR YEAR DEGREE PROGRAMME
(Applicable for the batches admitted from 2020-2021)

VAAGDEVI COLLEGE OF ENGINEERING
(Autonomous)
Bollikunta, Warangal-506 005
Telangana State, India.

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)

B.TECH. ELECTRONICS & COMMUNICATION ENGINEERING

COURSE STRUCTURE
(R20 Regulations applicable for the batches admitted from Academic Year 2020-21)

I SEMESTER

S.No.	Course Code	Title of the Course	L	T	P	Credits
1		Linear Algebra & Calculus	3	1	0	4
2		Programming for Problem Solving	4	0	0	4
3		Modern Physics	3	0	0	3
4		Chemistry	3	0	0	3
5		Engineering Drawing	0	0	4	2
6		Physics Lab	0	0	3	1.5
7		Programming for Problem Solving Lab	0	0	3	1.5
8		Induction Program				
		Total Credits	**13**	**01**	**10**	**19**

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)

LINEAR ALGEBRA AND CALCULUS

B. TECH- I Semester **L/T/P/C**
3/1 /0 /4

Pre-requisites: None

Course Objectives:

To learn

- Concept of rank of matrix and apply to find the consistency of system of linear equations.
- To determine Eigen values, Eigen vectors of matrices.
- Analyse the nature of sequence and series.
- Geometrical approach to the mean value theorems and their applications.
- To find extreme value of function of two and three variables.

UNIT-I

Matrices: Types of Matrices: Symmetric, Skew-symmetric, orthogonal, Hermitian,Skew-Hermitian, Unitary matrices, Rank of a matrix by Echelon form and Normal form, System of linear equations: Solving system of Homogeneous and Non-Homogeneous equations.

UNIT-II

Eigen Values and Eigen vectors: Linear Transformation and Orthogonal Transformation: Eigen values, Eigen vectors and their properties, Diagonalization of a matrix, Cayley-Hamilton Theorem (without proof); finding inverse and power of a matrix by Cayley-Hamilton Theorem;

UNIT-II

Sequences and Series: Definitions, limit, Convergent, Divergent and Oscillatory sequences and Series. Comparison test, p-test, D-Alembert's ratio test; Cauchy's Integral test; Cauchy's n^{th} root test. Alternating series: Leibnitz test, Absolute and Conditionally Convergence.

UNIT-IV

Calculus: Mean value theorems: Rolle's theorem, Lagrange's Mean value theorem with their Geometrical Interpretation and applications, Cauchy's Mean value Theorem. Taylor's Series. Definition of Improper Integral: Beta and Gamma functions and their applications.

UNIT-V

Multivariable calculus (Partial Differentiation and applications): Definitions of Limit and continuity. Partial Differentiation, Total derivative; Jacobian, Functional dependence and independence, Maxima and Minima of functions of two and three variables using method of Lagrange's method of undetermined multipliers.

TEXT BOOKS

1. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 42^{nd} Edition, 2012.
2. Erwin kreyszig, Advanced Engineering Mathematics, 9^{th} Edition, John wiley& Sons, 2006.
3. T.K.V. Iyengar, Engineering Mathematics-I, S. Chand, 2018.

REFERENCES

1. G.B. Thomas and R.L. Finney, Calculus and Analytic geometry, 9th Edition, Pearson, Reprint, 2002.
2. N.P. Bali and Manish Goyal, A text book of Engineering Mathematics, Laxmi Publications, Reprint, 2008.
3. Ramana B.V., Higher Engineering Mathematics, Tata McGraw Hill New Delhi, 11th Reprint, 2010.

Course Outcomes:

On successful completion of this course, students will be able to:

CO1: Understand the principles of matrix to calculate the characteristics of system of linear equations using multiple methods.
CO2: Determine Eigen values, Eigenvectors of matrices.
CO3: Analyse the nature of sequence and series to identify the convergence.
CO4: Evaluate limits of single-variable functions graphically and computationally.
CO5: Calculate Partial derivatives, extreme of functions of multiple variables.

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VAAGDEVI COLLEGE OF ENGINEERING
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PROGRAMMING FOR PROBLEM SOLVING

B. TECH- I Semester **L/T/P/C**
4/0 /0 /4

Pre-requisites: None

***Course Objectives*:**

- To provide the necessary knowledge on general engineering problem solving methodologies.
- To provide necessary foundations for step by step computer program development and to present the basic concepts in C programming language.
- To prepare the students to write modular and readable C Programs.
- The Course introduces the essential concepts like abstract data types, user defined data types.
- To analyze the performance of algorithms and how to use such knowledge for later processing with the help of files.
- Aims to train the students to write working programs to solve problems.

UNIT -I

Introduction: Steps in Problem Solving, Algorithms, Flowcharts, Pseudo code, Types of Programming Languages, Introduction to C, History of C, Structure of a C Program.

Introduction to C Programming: The C Character Set, Identifiers and - Keywords, Data Types, Constants and Variables, Declarations, Expressions & Statements, Input / Output Statements (Formatted and Unformatted), Creating and Running a C program.

Operators and Expressions : Unary Operators, Arithmetic Operators, Relational and Logical Operators, Assignment Operators, Conditional operator, Bitwise Operators, special operators, Precedence & Associativity, Type Casting and Type Conversion.

UNIT – II

Control Statements: Branching Statements – if, if-else, else- if, nested-if. Switch statement. Un - conditional Branching Statement- goto. Looping Statements- while, do-while, for, nested loops. Break & Continue.

Functions : Introduction, Defining a Function, Types of Functions, Accessing a Function, Function Prototypes, Passing Arguments to a Function – call by value, Recursion.

Storage Classes: Automatic Variables, External (Global) Variables, Static Variables, Register.

UNIT – III

Arrays: Definition - Single Dimensional Arrays, Multi Dimensional Arrays, Declaration, Initialization, Reading & Writing elements in to an Array, Passing Arrays to Functions. Linear Search, Binary search, Bubble sort.

Strings: Declaration and Initialization of Strings, Reading and Writing a String, String Manipulation Functions, String as Array of Characters, Array of strings, Sorting of Strings.

Structures and Unions: User-Defined Data Types , Defining a Structure, Processing a Structure, Array of Structures, Nested Structures, Passing Structures To Functions.
Unions. Typedef, Enumerated types - enum.

UNIT – IV

Pointers: Introduction, Pointer Declarations, Pointer to Pointer, Operations on Pointers -Pointer Arithmetic, Dynamic Memory Allocation – Malloc(), Calloc(), Realloc(), Free(). Pointers and Functions - call by Reference, Pointers and Arrays (one dimensional, two dimensional), Array of Pointers. Structures and Pointers, Self-Referential Structures.

UNIT- V

File Handling: Introduction, Text Files and Binary Files, File Handling Functions-Opening and Closing a File, File Opening Modes, Reading and Writing a File. Random Access File Functions – fseek() , rewind(), ftell(). Command Line Arguments, C Preprocessor Directives.

TEXT BOOK:

1 . Byron Gottfried, ***"Programming with C"*** . Third Edition(Schaum's Outlines) McGraw Hill.

REFERENCE BOOKS:

1. B.A. Forouzan and R.F. Gilberg ,*"C Programming and Data Structures"* , Cengage Learning (3rd Edition)
2. Pradip Dey & Manas Ghosh, *"Programming in C"*, 2nd Edition , Oxford University Press,2013.
3. E. Balaguruswamy , *"Programming in ANSI C "* ,McGraw-Hill Education, 2008.

Course Outcomes:

CO1: Understanding how problems are posed and how they can be analyzed for obtaining solutions.
CO2: Learning of sequencing, branching, looping and decision making statements to solve scientific and engineering problems.
CO3: Implementing different operations on arrays and creating and using of functions to solve problems.
CO4: Understanding and exploring the various methods of memory allocations.
CO5: Ability to design and implement different types of file structures using standard methodology.

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VAAGDEVI COLLEGE OF ENGINEERING
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MODERN PHYSICS

B. TECH- I Semester **L/T/P/C**
3/0 /0 /3

Pre-requisites: None

Course Objectives:

- To provide sufficient depth in the concepts of Quantum mechanics and their applications
- To impart a thorough knowledge in Wave optics for engineering applications.
- To enrich the fundamental concepts and working principles of lasers in advancement of technology and research.
- To understand the concepts in semiconductor physics to develop various devices
- To study the concepts , working principles of optical fibres and their applications in various fields

***UNIT I*: Quantum Mechanics**

Introduction to Quantum mechanics, Waves and Particles, de-Broglie's hypothesis, Davisson and Germer's Experiment, Uncertainty principle, Time- Independent Schrodinger equation, Significance of Wave function, Particle in one dimension box.

***UNIT II*: Wave Optics**

Introduction to wave optics, Huygens's principle, superposition of waves, interference of light by division of wave front and division of amplitude; Thin film interference due to reflected light, Newton's rings (qualitative). Farunhofer diffraction due to a single slit, double slit and circular aperture, Diffraction gratings and their resolving power

***UNIT III:* Lasers**

Characteristics of lasers, Interaction of light with matter (absorption, spontaneous emission, stimulated emission). Relation between Einstein's Coefficients; Principle and working of lasers, population inversion, Pumping mechanism, Types of Lasers- Ruby laser, He-Ne laser, CO_2 laser and semiconductor diode laser, applications of lasers in the field of science, Engineering and Medicine.

***UNIT IV*: Physics of Semiconductors and devices**

Classification of materials in to conductors, semi- conductors and insulators, calculation of carrier concentration in intrinsic and extrinsic (N-type) semiconductors, carrier generation and recombination, Direct and indirect band gap semiconductors. Formation of P-N junction, Energy diagram of P-N diode, LED, Types of semiconductor photodetectors, working principles and characteristics of PIN diode, Solar Cell.

***UNIT V:* Optical Fibres**

Introduction, principle behind optical fibres, Acceptance angle and Cone, Numerical aperture, Types of Optical Fibers, step and graded index fibers, losses in optical fibers, applications of optical fibers.

Text Books:

1. A Text Book of Engineering Physics, Dr. M.N. Avadhanulu, Dr. P.G. Kshrisagar-S.Chand.
2. Modern Engineering Physics (Vol-I & II), Dr. K. Vijaya Kumar, Dr. S. Chandralingam – S.Chand.
3. Engineering Physics, P.K.PalaniSwamy, ScitechPublicatiobs.
4. Electric Devices & Circuits – Millman&Halkies.

References Books:

1. Haliday and Resnick, Physics-Wiley
2. J. Singh Semiconductor Optoelectronics: Physics and Technology, Mc. Graw-Hill inc(1995).

Course Outcomes:

On successful completion of this course, students are able to:

CO1: Understands the basic principles and hypothesis of quantum mechanics

CO2: Analyse and apply the concepts of wave optics for accurate determination of the interference in thin films, Newton's rings and the diffraction in single slit etc.

CO3: Describes the characteristics and working of lasers and their applications in various fields.

CO4: Classify the materials on the basis of energy band gap, and evaluates the carrier concentration of given semiconductors for device applications

CO5; Apply the concepts of the light propagation in optical fibres in optical communication systems

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VAAGDEVI COLLEGE OF ENGINEERING
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CHEMISTRY

B. TECH- I Semester **L/T/P/C**
3/0 /0 /3

Pre-requisites: None

Course Objectives:

- To bring adaptability to the concepts of chemistry and to acquire the required skills to become a perfect engineer.
- To acquire the knowledge of electrochemistry, different batteries.
- To acquire the knowledge of corrosion and it's control methods which are essential for the Engineers and in industry.
- To acquire the knowledge of water treatment which is essential for the Engineers in industry.
- To acquire the knowledge of resistors and capacitors.
- To acquire the skills and knowledge to organic reactions and importance of polymers in engineering and everyday life.

UNIT-I

Electrochemistry & Batteries (12 Lectures)

Introduction to electrochemistry, conductance-specific, equivalent and molar conductance, units and their relation. Electrochemical and Electrolytic cells, Galvanic cell, measurement of e.m.f. and single electrode potential, Nernst's equation and its applications, Electro chemical series-applications.
Batteries: primary cells-lithium cells. Secondary cells – Pb-acid storage cell, lithium-ion cells, Fuel cells-hydrogen-oxygen fuel cell. Methanol-oxygen fuel cell-advantages and applications, Reserve batteries - silver peroxide-zinc alkaline cell.

UNIT-II

Water Technology (10 Lectures)

Introduction, types of hardness, units and Numerical problems. Estimation of hardness of water-EDTA method. Boiler troubles-scales and sludges. Treatment of Boiler feed water-Ion-exchange process. De-salination of brackish water-Reverse Osmosis. Domestic water treatment-specifications and steps involved in the treatment of potable water.

UNIT-III

Corrosion & It's control methods(8 Lectures)

Corrosion: Introduction, causes of corrosioin, types of corrosion-dry and wet corrosion-mechanism of electrochemical corrosion. Caustic embrittlement and boiler corrosion. Factors affecting on corrosion and corrosion control methods- cathodic protection (sacrificial anodic protection and impressive current cathodic protection) and surface coatings (anodic and cathodic), Methods of application of metal coatings-Hot dipping (galvanization and tinning) and electroplating of copper.

UNIT-IV

Polymers (8 Lectures)

Polymers: Introduction to polymers, classification of polymers, mechanism of free radical addition polymerization, properties of polymers-crystallinity, melting point, boiling point and glass transition temperature. Conducting polymers-classification, mechanism of conduction in conducting polymers-poly acetylene and ploy aniline, applications.

UNIT-V: Chemistry of Passive Devices (10 Lectures)

Resistors: Types of resistors, colour codes, composition resistors-carbon resistor, film type resistor, wire -wound resistor**.**

Capacitors: Electrolytic capacitors family tree, Charge principle, Basic materials and construction.

SUGGESTED READING:

(i) Text book of Engineering Chemistry by Jain & Jain.
(ii) Text book of Engineering Chemistry, CENGAGE learning by Prasanta Rath, B. Ramadevi, Ch. Venkata
Ramana Reddy & Subhendu Chakroborty.
(iii) University chemistry, by B. H. Mahan
(iv) Engineering Chemistry by Shashi Ch

Course Outcomes:

The basic concepts included in this course will help the student to gain:
CO1: The knowledge of electrochemical cells, different batteries
CO2: The required principles and concepts of corrosion, control methods.
CO3: The knowledge of water treatment.
CO4: The knowledge of polymers and their importance in day to day life.
CO5: The required principles and concepts of passive devices.

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VAAGDEVI COLLEGE OF ENGINEERING
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ENGINEERING DRAWING

B. TECH- I Semester **L/T/P/C**
0/0 /4 /2

Pre-requisites: None

Course Objectives:

- Use of various command, object properties in AUTOCAD.
- Learn the basic convention of drawings, dimensioning, scales and conic sections like ellipse, parabola and hyperbola.
- Learn projection of points, lines viewed in different positions.
- Learn projections of plane surfaces and solids viewed in different positions.
- Gain knowledge of sections of solids and their usage in real time applications and conversion of orthographic projection to isometric projection vice-versa.

UNIT – I

Chapter-I Introduction to Computer Graphics: Listing the computer technologies that impact on graphical communication, Demonstrating knowledge of the theory of CAD software -The Menu System, Toolbars Standard, Object Properties, Draw, Modify and Dimension.

Chapter-II Introduction to Engineering Drawing:

Principles of Engineering Graphics and their significance, ISO and ANSI standards for coordinate dimensioning- usage of Drawing instruments, lettering

a. Conic sections including the Rectangular Hyperbola (General method only);
b. Roulettes-Cycloid, Epicycloid, Hypocycloid
c. Involute
d. Scales – Plain, Diagonal and Vernier Scales.

UNIT –II

Principles of Orthographic Projections in First Angle Projection- Conventions

Projections of Points

Projection of lines: Parallel, Perpendicular inclined to one plane and inclined to both the planes.

Unit-III

Projection of planes: Plane parallel, perpendicular and inclined to one reference plane. Planes inclined to both the reference planes.

Projection of Regular Solids-Projection of regular solids, Cube, prisms, pyramids, tetrahedron, Cylinder and cone, axis inclined to one plane and both planes, Projections of Regular Solids.

UNIT-IV

Projections of Sections and sectional views of right angular solid-Prism, Cylinder, Pyramid, Cone.

Development of surfaces of Right Regular Solids – Prism, Pyramid, Cylinder and Cone.

Unit-V

Isometric Projections:

Principles of Isometric projection – Isometric Scale, Isometric Views, Conventions; Isometric Views of lines, Planes, Simple and compound Solids; Conversion of Isometric views to Orthographic views and Vice-versa, Conventions.

TEXT BOOKS

1. Agrawal B & Agrawal C.M. (2012), Engineering Graphics, TMH Publications.
2. Bhatt N.D., Panchal V.M. & Ingke P.R., (2014), Engineering Drawing, Charotar Publishing House.

REFERENCES

1. Narayana, K.L. & P Kannaiah (2008), Text book on Engineering Drawing, SciTech Publishers.
2. (Corresponding set of) CAD Software Theory and User Manuals.
3. Engineering Graphics. P I Varghese Tata McGraw Hill Education Pvt. Ltd.
4. Engineering Drawing – P.J.Shan S.Chand Publishers.
5. Engineering Drawing – Johle/Tata McGraw Hill Book Publishers.

Course Outcomes:

The students will be able to

CO1: Understand various commands, modify the applications and object properties in AUTOCAD

CO2: Analyse the Projections of Points and solids

CO3: Estimate the use of drawings, dimensioning, scales and conic sections

CO4: Compare the Conversion of Isometric views to Orthographic views

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VAAGDEVI COLLEGE OF ENGINEERING
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PHYSICS LAB

B. TECH- I Semester **L/T/P/C**
0/0 /3 /1.5

Pre-requisites: None

Course Objectives:

The laboratory course will develop student's knowledge in/on...

- Determination of frequency of AC supply by Sonometer
- Determination of the wavelengths, slit widths with high degree of accuracy from diffraction phenomena using conventional light and laser light
- Determination of time constant of RC circuit and optical fibre characteristics.
- Determination of Solar cell, LED and LASER diode etc. characteristics
- Determination of the wavelength and radius of curvature of Plano convex lens using Newton's rings

Name of the Experiment

1	Torsional Pendulum- Determination of rigidity modulus of materials of a wire
2	Determination of energy gap of material of a p-n junction
3	Study of LED diode V-I & P-I characteristics
4	Determination of dispersive power of a material of a prism-spectrometer.
5	Bending losses of optical fibres and evaluation of numerical aperture of a given optical fibre
6	Study of decay charge & determination of time constant of RC circuit
7	Study of characteristics of Solar cell
8	Determination of wavelength of laser source- Diffraction grating
9	Determination of frequency of AC supply - Sonometer
10	Study of LASER diode V-I & L-I characteristics
11	Determination of wavelength and radius of curvature of Plano convex lens using Newton Rings Experiment.
12	Study of P-N diode Characteristics.

Course Outcomes:

CO1: Estimate the frequency of tuning for and AC supply with the help of stretched strings
CO2: Analyze as well as compare the intensity distribution of interference and diffraction patterns
CO3: Draw the characteristics of electrical and electronic circuits and evaluate the dependent parameters
CO4: Explore and understand the applications of semiconducting devices
CO5: Evaluates the wavelength and radius of curvature of Plano convex lens by Newton's rings

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VAAGDEVI COLLEGE OF ENGINEERING
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PROGRAMMING FOR PROBLEM SOLVING LAB

B. TECH- I Semester **L/T/P/C**
0/0 /3 /1.5

Pre-requisites: None

Course Objectives:

- To provide the necessary knowledge on general engineering problem solving methodologies.
- To provide necessary foundations for step by step computer program development and to present the basic concepts in C programming language.
- To prepare the students to write modular and readable C Programs.
- The Course introduces the essential concepts like abstract data types, user defined data types.
- To analyze the performance of algorithms and how to use such knowledge for later processing with the help of files.
- Aims to train the students to write working programs to solve problems.

WEEK-1

1. a) Write a C program to find the areas of shapes like circle, square, rectangle and triangle

1.b) write a C program to demonstrate Type Casting and Type Conversion.

WEEK-2

2. a) Write a C program to find the roots of a quadratic equation.

2. b) Write a C program to find greatest of any 3 numbers.

2. c) Write a C program, which takes two integer operands and one operator from the user, Performs the operation and then prints the result. (Consider the operators +,-,*, /, % and use Switch Statement)

WEEK-3

3. a) Fibonacci sequence is defined as follows: the first and second terms in sequence are 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence. Write a C program to generate the first n terms of the sequence.

3. b) A positive integer d is said to be a factor of another positive integer N if when N is divided by d, the remainder obtained is zero. For example, for number 12, there are 6 factors 1, 2, 3, 4, 6, 12. Every positive integer k has at least two factors, 1 and the number k itself. Given two positive integers N and k, write a program to print the k^{th} largest factor of N.

Input Format: The input is a comma-separated list of positive integer pairs (N, k).

Output Format: The k^{th} highest factor of N. If N does not have k factors, the output should be 1.

Constraints:

- $1<N<10000000000$
- $1<k<600$.

You can assume that N will have no prime factors which are larger than 13.

Example

- **Input**: 12,3
- **Output**: 4

3.c) Write a C program to find the second largest number in a set of n numbers.

WEEK-4

4. a) Write a C program to generate Pascal's triangle.

4. b) Write a C program to find the LCM(Least Common Multiple) and GCD (greatest common divisor) of two given integers.

4. c) Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.

WEEK-5

5.a) Write a C program to find sum of series 1+x^1+x^2+x^3+.....+x^n using functions.

5. b) Write a C program to find factorial of a given number using Recursion.

5. c) Write a C program to demonstrate the use of Storage Classes

WEEK-6

6. a) Write a C program to find both the largest and smallest number in a list of integers.

6. b) N monkeys are invited to a party where they start dancing. They dance in a circular formation, very similar to a Gujarati Garba or a Drum Circle. The dance requires the monkeys to constantly change positions after every 1 second.

The change of position is not random & you, in the audience, observe a pattern. Monkeys are very disciplined & follow a specific pattern while dancing.

Consider N = 6, and an array monkeys = {3, 6, 5, 4, 1, 2}.

This array (1-indexed) is the dancing pattern. The value at monkeys[i], indicates the new of position of the monkey who is standing at the ith position.

Given N & the array monkeys[ ], find the time after which all monkeys are in the initial positions for the 1st time.

Constraints

1<=t<=10 (test cases)

1<=N<=10000 (Number of monkeys)

Input Format

First line contains single integer t, denoting the number of test cases.

Each test case is as follows -

Integer N denoting the number of monkeys.

Next line contains N integer denoting the dancing pattern array, monkeys [].

Output

t lines,

Each line must contain a single integer T, where T is the minimum number of seconds after which all the monkeys are in their initial position

6.c) Write a C program to insert an element at a given position in an Array using functions.

WEEK-7

7. Write a C program to perform all of the following:

a) Matrix Addition and subtraction

b) Matrix Multiplication

c) Find Transpose and test if a matrix is symmetric or not

d) A traditional chess board consists of 8 rows and 8 columns. Write a program to count the number of safest places that a King can be positioned when 3 queens (ministers) are placed at different positions on the chess board.

WEEK-8

8. a) Write a C program to perform linear search

8. b) Write a C program to perform binary search

8. c) Write a C program to sort the elements using bubble sort

WEEK-9

9. a)Write a C program to insert a sub-string in to a given main string at a given position.

9. b) Write a C program to count number of characters, words and sentences in a given text.

9. c) Write a C program to determine if the given string is a palindrome or not.

9. d) Write a C program to sort the given names in alphabetical order.

WEEK-10

10. a) Write a C program to implement array of structures.(use student structure) and write functions to

i. to search student data using hall ticket number.
ii. to sort the student records based on the total marks.

10. b) Write a menu driven C program that uses functions to perform the following operations on complex numbers stored in a structure:
i.Reading a complex number
ii.Writing a complex number
iii.Addition of two complex numbers
iv.Multiplication of two complex numbers

10. c) Write a C program to demonstrate Unions and enum.

WEEK-11

11.a) Write a C program for Pointer Arithmetic.
11.b) Write a C program to swap two numbers using Call by value and Call by reference.
11.c) Write a C program to demonstrate calling of a function (like add, subtract, multiply) using a function pointer.

WEEK-12

12.a)Write a C program using pointer to create a two dimensional matrix, to input values in to the matrix and to display the matrix and its transpose. Free the memory properly.
12.b)Write a C program to demonstrate on structures and pointers.
12.c) Write a C program for dynamic creation of structures using pointers

WEEK-13

13.a)Write a C program to count no of alphabets, no of digits, no of special symbols, no of white spaces and no of tabs in a given text file.

13.b) Write a C program which copies one text file to another text file and verify the correctness.
13.c) Write a C program which copies one binary file to another binary file and verify the correctness.

WEEK-14

14.a) Write a C program to produce reverse of the content of a text fie into another text file and verify the result.
14.b) Write a C program to merge two text files into a third text file (i.e., the contents of the first file followed by those of the second are put in the third file) and verify the correctness.

WEEK-15

15.a) Write a command-line C program to reverse the first n characters in a file.
(Note: The file name and n are specified on the command line.)
15.b)Write a C Program that removes all comment lines from a C source file.

TEXT BOOK:

1. Byron Gottfried, ***"Programming with C"*** . Third Edition(Schaum's Outlines) McGraw Hill.

REFERENCE BOOKS:

1. B.A. Forouzan and R.F. Gilberg ,*"C Programming and Data Structures"* , Cengage Learning (3rd Edition)
2. Pradip Dey & Manas Ghosh, *"Programming in C"*, 2nd Edition , Oxford University Press,2013.
3. E. Balaguruswamy , *"Programming in ANSI C "* ,McGraw-Hill Education, 2008.

Course Outcomes:

CO1: Understand basic structure of the C Programming, data types, declaration and usage of variables,

control structures and all related concepts.

CO2: Ability to understand any algorithm and Write the C programming code in executable form.

CO3: Implement Programs using functions, pointers and arrays, and use the pre-processors to solve real time problems.

CO4: Ability to use file structures and implement programs on files.

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