

7. To determine the frequency of A.C. mains with a Sonometer using non magnetic wire.
8. To draw the characteristics curves of a Semiconductor Diodes (Si or Ge).
9. To study the V-I characteristics of a Zener Diode.
10. To study the performance of a Half-wave, Full-wave & Bridge wave rectifier without filters.
11. To verify Stefan's law by estimating the temperature of a torch bulb filament from resistance measurement.
12. To study the Hall Effect and to calculate the Hall Coefficient and Charge Carrier Concentration of a given sample.
13. To study the dependence of Refractive Index(μ) of the material of the prism on the Wavelength(λ) of light; and hence(1) to determine the Dispersive Power of the material of prism;(2)to verify the Cauchy Relationship $\mu = a + b/\lambda^2$, and to estimate the values of a & b(3)to plot a graph of $d\mu/d\lambda$ versus λ .
14. To determine the band gap by measuring the resistance of a Thermistor at different temperatures.
15. To determine the energy band gap of a semiconductor diode (Ge) using Four Probe Method.
16. To study the wavelength of He-Ne Laser.

Introduction to 'C' Programming

CSL 1022

3 - 0 - 0 = 3

Course Outcomes

CO1	Knowledge and understanding of programming.
CO2	Ability to write simple programs in C language by using basic control structures (conditional statements, loops, switches, branching, etc.).
CO3	Understanding the concept of programming using functions, arrays, strings, pointers and structures, and implement the various operations on them.
CO4	Ability to create a programmable model for a problem given.

Course Contents

Introduction: Concept of problem solving, Problem definition, Program design, Techniques of Problem Solving (Flowcharting, algorithms, pseudo code), Structured programming concepts

Fundamentals: C character set, Tokens, identifiers and keywords, constants and variables, Data types, Data Type Modifiers Structure of a C Program, , Types of Statements: declarations, arithmetic statements and arithmetic operations, , Operators: Arithmetic, relational and equality, logical, assignment and compound assignment, Operators classification based on number of operands: Unary, Binary and Ternary (conditional, unary operations), operator's precedence & associativity, library functions, single character input and output, entering and writing data.

Control Statements: Statement and blocks, Decision making structures: if else and its types, Looping structures: while, for, do while, Case control structures: switch, break and continue statements, nested control structures.

Arrays: Definition, types, initialization, processing an array, 2 Dimension Arrays, Sorting, Searching, Copy, Insertion, Deletion of elements in array.

Functions and pointers: Functions definition, prototype, passing parameters, recursion, pointers, pointers and arrays, pointers and Functions,

String: Operations on String, built in functions, string and functions

User defined data types and Additional Features of C: Structures, Array of Structures, Array within Structures, Structures within Structures, Union, Enumerations, Pre-processor Directives

Reference Books:

1. Gottfried, Byron S., "Programming with C", Tata McGraw Hill
2. Balagurusamy, E., "ANSI C", Tata McGraw-Hill
3. Yashwant Kanetker, "Let us C", BPB
4. C, The Complete Reference, Scholdt, TMH
5. Programming with C, S. Kaicher, Macmillan
6. C For Yourself, Asian Inst. of Tech AIT
7. Structured Programming Approach Using C, B. Forouzen, Thomas Learning

'C' Programming Lab

CSP 1022

0 - 0 - 2 = 1

List of experiments :

1. Write a program to know the number of bytes of data type contains
2. Write a program to display the ASCII code of a variable on the screen
3. Write a program to find the sum of digits of a 4 digit number
4. Write a program to reverse a 4 digit number
5. Write a program to swap the values of two variables with/without using third variable
6. Write a program to display if a number is even or odd
7. Write a program to display that a person is eligible for voting
8. Write a program to display greatest among two/ three numbers
9. Write a program to read number between 1-7 & display corresponding day of week
10. Write a program to read marks of five subjects and compute percentage and display grade of

- students based on percentage
11. Write a program to check whether the year entered is leap year or not
 12. Write a program to print the relation between 2 numbers as equal to, less than or greater than
 13. Write a program to read lower case character and display it in upper case
 14. Write a program to convert Celsius into Fahrenheit
 15. Write a program to swap the values to two variables with the help of temporary variable
 16. Write a program to make a calculator
 17. Write a program to print 1 to 10 in ascending and descending order on screen
 18. Write a program to print sum of all even/ odd numbers between 1 to n
 19. Write a program to print multiplication table of n
 20. Write a program to find factorial of a number
 21. Write a program to find sum of all numbers between m to n
 22. Write a program to read a number and print each digit on separate line
 23. Write a program to find the sum of digits of a number
 24. Write a program to reverse a number
 25. Write a program to find if the number is Palindrome or not
 26. Write a program to read +ve numbers from user till user enters 0 & display for each number whether it is even or odd
 27. Write a program to read character from user till user enters special character and display count of vowels and digits
 28. Write a program to print all leap years between year m to n
 29. Write a program to read a number and find if it is an Armstrong number or not
 30. Write a program to print all prime number between n to m
 31. Write a program using switch case to read one number and perform 1. Sum of digit 2. Reverse of number 3. Number is palindrome or not
 32. Write a program using switch case to read operator and perform (+, -, /, *) operators of operands
 33. Write a program to sort an array of type integer
 34. Write a program to reverse an array element in the array
 35. Write a program to check if the array is palindrome or not
 36. Write a program to insert an element in sorted array at its right place
 37. Write a program to delete all the duplicate numbers from the array
 38. Write a program to read temperature recorded for the month of September. Display the highest and lowest temperature recorded
 39. Write a program to read total marks of 90 students. Find the average marks scored by the class. Display the number of students having marks below average and total number of students marks equal to or above average.
 40. Write a program to read n numbers in an array. Display the count of total -ve numbers, +ve numbers and total zero. Your program must derive m which should be added to all -ve numbers so as they are converted to either zero or +ve number.
 41. Write a program to sum the two arrays into another array.
 42. Write a program to add two matrix using multi-dimensional arrays
 43. Write a program to multiply to matrix using multi-dimensional arrays
 44. Write a program to find transpose of a matrix
 45. Write a program to find the length of a string
 46. Write a program to find the total number of vowels in the string
 47. Write a program to find the number of vowels, consonants, digits and white space in string using Switch - case
 48. Write a program to concatenate two strings
 49. Write a program to find the total number of words in a sentence
 50. Write a program to reverse a sentence
 51. Write a program to remove all characters in a string except alphabet
 52. Write a program to sort elements in different orders in string
 53. Write a program to insert a character in a string
 54. Write a program to delete a character in a string
 55. Write a program to insert a word in a string
 56. Write a program to search a word in a string
 57. Write a program to delete a word in a string
 58. Write a program to find the length of each string in a 2-dimensional array
 59. Write a program to find sort each string in a 2-dimensional array
 60. Write a program to display prime numbers between intervals using function
 61. Write a program to check prime or Armstrong number using user-defined function
 62. Write a program to check whether a number can be expressed as sum of two prime numbers using function
 63. Write a program to find the sum of n natural numbers using function
 64. Write a program to calculate factorial of a number using function
 65. Write a program to reverse a sentence using function
 66. Write a program to calculate power of a number using function
 67. Write a program to convert binary number to decimal and vice-versa using function
 68. Write a program to store information (name, roll and marks) of student using structure
 69. Write a program to add two distances (in inch-feet) system using structure
 70. Write a program to add two complex numbers by passing structure to a function
 71. Write a program to calculate between two time period using structures and functions

72. Write a program to store information of 10 students using structure and display the roll no, name and total marks of each student structures and functions
73. Write a program to swap numbers of an array using call by reference
74. Write a program to find largest number in an array using function
75. Write a program to multiply two matrices by passing matrix to function

Professional Communication

LNL 1411

2 – 0 –0= 2

Course Outcomes

CO1	Have an advance knowledge about communication skills, their evolving nature and how to use them effectively.
CO2	Use knowledge of technology and can use it to communicate effectively in various settings and contexts.
CO3	Communicate appropriately and effectively within various organizations, also with global audience in a constantly changing technological ambience and demonstrate the ability to analyze a problem and devise a solution.
CO4	Employ skills that are necessary for career development and also to demonstrate an ability to work with a variety of personality types.
CO5	Deliver effectively formal and informal oral presentations to a variety of audiences in multiple contexts.
CO6	Contribute ethically, responsibly, and effectively as local, national, international, and global citizen and leader.

Course Contents:

Unit 1: General Communication

Purpose of Communication; Process of Communication; Importance of Communication; The Seven C's of the Effective Communication; Differences between Technical and General Communication. Barriers to Communication and Measures to Overcome the Barriers to Communication; Scope and Types of Communication Network; Formal and Informal Communication Network; Upward Communication; Downward Communication; Horizontal Communication; Diagonal Communication

Unit 2: Written Communication

Email: How to write a Formal E-mail

Letter Writing Cover Letter: Format of Letter Writing: Block and Modified, etc. ; Formal and Informal Letter Writing; Formal Letter Formats

Note Making and Notice Writing: Purpose; Format; Points to remember while writing a Note and Notice. Minutes and Agendas: Difference between Minutes and Agendas; Purpose; Format; Points to remember while drafting Minutes and Agendas

Unit 3: Job Application

Resume and CVs: Contents of Good Resume; Guidelines for Writing Resume; Different Types of Resumes; Difference between CVs and Resume

Cover Letter; Reason for a Cover Letter to Apply for a Job-Format of Cover Letter; Different Types of Cover Letters

Unit 4: Report Writing

Technical Report Writing: Difference between Business Report and Engineering Report; Characteristics of writing a good report; Guidelines for Report Writing; Steps in Report Writing; Structure of Report; Types of Reports and Different Formats.

Reference Books:

1. Raman, Meenakshi and Sangeeta Sharma. *Technical Communication: Principles and Practice*. Oxford University Press, 2015.
2. Choudhury, Soumitra, and Anjana Neira Dev. *Business English*. Pearson Publication, 2008.
3. Mukerjee, Hory S. *Business Communication*. New Delhi: Oxford University Press, 2013.
4. Williams, D. *Communication Skills in Practice: A Practical Guide for Health Professionals*. London, United Kingdom: J.Kingsley, 2007.
5. Pandey, O. N. *Technical Writing*. New Delhi: S.K. Kataria & Sons, 2014.

Professional Communication Lab

LNP 1411

0 – 0 –2= 1

Unit 1

Oral Communication

Speaking Skills: Kinds of Speaking Skills, Effective ways of Speaking, Public Speaking

Listening Skills: Stages of Listening Process, Strategies of Listening, Types of Listening

Professional Speaking: Interview Process, Characteristics of Job Interview, Pre Interview Preparation Techniques, Answering Strategies, Frequently asked Interview questions, Projecting a positive image and Body Language

Group Discussion: Definition, Methodology of Group Discussion, Techniques for Individual Contribution, Group Interaction Strategies, Helpful Expression and Evaluation, Practical Sessions