ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

I SEMESTER	**COMPUTER SCIENCE**	Time: 4 Hrs/Week
CS 1601 (3)	**PROGRAMMING IN “C”**	Max. Marks: 100
w.e.f. 2017 – 2020 (“17AE”)	**SYLLABUS**	

COURSE OBJECTIVES:

1. Learn how to solve common types of computing problems.
2. Learn data types and control structures of C
3. Learn to map problems to programming features of C.
4. Learn to write good portable C programs.

COURSE OUTCOMES:

Upon successful completion of the course, a student will be able to:

1. Analyse a given problem and develop an algorithm to solve the problem
2. Improve upon a solution to a problem
3. Use the 'C' language constructs in the right way
4. Design, develop and test programs written in 'C'

UNIT – I: ALGORITHMS AND FLOW CHARTING: Implementation of algorithms & flowcharts, Overview of C, Constants, variables and Data types, Operators and Expressions, Managing input and output operations, Decision Making and Branching, Decision Making and Looping.

UNIT - II: FUNCTIONS: Need for user defined functions, Elements of user defined functions, Definition of functions, Return values and their types, functions calls, function declarations. Category of functions, nesting of functions, recursion, passing arrays to functions, storage classes.

UNIT – III:ARRAYS: One-dimensional Arrays- Declaration and Initialization, Two-dimensional Arrays, Initializing Two-dimensional Arrays, Multi-dimensional Arrays.

STRINGS: Declaration and Initializing String Variables, Reading and writing of strings, comparison of two strings and String Handling Functions and passing strings to functions.

UNIT–IV:POINTERS: Introduction, Understanding Pointers, accessing address of a variable, declaring a pointer variable, accessing a variable through its pointer, chain of pointers, pointer expressions, pointers increments and scale factors.

Pointers and arrays, pointer and character string, Array of pointers, pointers as function arguments, functions returning pointers, pointers to functions.

UNIT – V: Structures: Defining and Declaring Structures, Accessing structure members- structure initialization-copying and comparing structure variables, operations an individual members, array of structures, arrays within structure, structures within structures unions.

File Management: Introduction, defining and opening a file, closing a file, input/output operations on files, error handling during I/O operations, random access to files. DMA: malloc, calloc, free, realloc.

Text Books:

1. Programming in Ansi C – 4th edition E. BalaGuruSwamy , Tata Mc Graw Hill, 2004.

REFERENCE BOOKS

1. E Balagurusamy: —COMPUTING FUNDAMENTALS & C PROGRAMMING – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
2. Let us C – Yashwant Kanetkar, Bpb Publications, New Delhi

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ST.JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

I SEMESTER **COMPUTER SCIENCE** Time: 3 Hrs/Week
C 1651 (2) **PROGRAMMING IN "C"** Max. Marks: 50
w.e.f. 2017 – 2020 ("17AE") **PRACTICAL SYLLABUS – I A**

STUDENT ACTIVITY:

1. Write a program for preparing the attendance particulars of students of your college at the end of semester according to following guidelines
   a. Above 60 % promoted
   b. Above 65% condoned
   c. Below 65% detained
2. Write a program for creating timetable or your class taking work load of faculty into consideration.

PROGRAMMING IN C LAB

1. Find out the given number is perfect number or not using c program.
2. Write a C program to check whether the given number is Armstrong or not.
3. Write a C program to find the sum of individual digits of a positive integer.
4. A Fibonacci sequence is defined as follows: the first and second terms in the sequence are 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence. Write a C program to print the Fibonacci series
5. Write a C program to generate the first n terms of the Fibonacci sequence.
6. Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.
7. Write a C program to find both the largest and smallest number in a list of integers.
8. Write a C program that uses functions to perform the following:
   a. Addition of Two Matrices
   b. Multiplication of Two Matrices
9. Write a program to perform various string operations
10. Write C program that implements searching of given item in a given list
11. Write a C program to sort a given list of integers in ascending order

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