Annexure 2

PROGRAMMING FOR PROBLEM SOLVING LAB

Course Code: CSE 124 **Credit Units: 02**
Total Hours: 40

Course Objective:
The objective of this course module is to acquaint the students with the basics of programming in C.

Course Contents:
Lab Experiments are based on the course Programming For Problem Solving (CSE 104)

List of experiments/demonstrations:

Tutorial 1: Problem solving using computers: **(2 Hours)**
Lab1: Familiarization with programming environment

Tutorial 2: Variable types and type conversions: **(2 Hours)**
Lab 2: Simple computational problems using arithmetic expressions

Tutorial 3: Branching and logical expressions: **(4 Hours)**
Lab 3: Problems involving if-then-else structures

Tutorial 4: Loops, while and for loops: **(4 Hours)**
Lab 4: Iterative problems e.g., sum of series

Tutorial 5: 1D Arrays: searching, sorting**: (4 Hours)**
Lab 5: 1D Array manipulation

Tutorial 6: 2D arrays and Strings**: (4 Hours)**
Lab 6: Matrix problems, String operations

Tutorial 7: Functions, call by value: **(4 Hours)**
Lab 7: Simple functions

Tutorial 8 &9: Numerical methods (Root finding, numerical differentiation, numerical integration): **(4 Hours)**
Lab 8 and 9: Programming for solving Numerical methods problems

Tutorial 10: Recursion, structure of recursive calls: **(4 Hours)**
Lab 10: Recursive functions

Tutorial 11: Pointers, structures and dynamic memory allocation: **(4 Hours)**
Lab 11: Pointers and structures

Tutorial 12: File handling: **(4 Hours)**
Lab 12: File operations

Laboratory Outcomes:

- To formulate the algorithms for simple problems
- To translate given algorithms to a working and correct program
- To be able to correct syntax errors as reported by the compilers
- To be able to identify and correct logical errors encountered at run time
- To be able to write iterative as well as recursive programs
- To be able to represent data in arrays, strings and structures and manipulate them through a program
- To be able to declare pointers of different types and use them in defining self- referential structures.
- To be able to create, read and write to and from simple text files.

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Examination Scheme:

IA			EE			
A	**PR**	**Practical Based Test**	**Major Experiment**	**Minor Experiment**	**LR**	**Viva**
5	10	15	35	15	10	10

Note: IA –Internal Assessment, EE- External Exam, A- Attendance, PR- Performance, LR – Lab Record, V – Viva.