Course Title: Programming Fundamentals and 'C' Programming **Credit: 1**
Nature of the Course: Lab. **Number of hours per week:**
Level: CSIT.115 **(2 hrX3times or 3 hr x 2 times) 6**
Year: First **Total hours: 48**
Semester: First

hout the semester and Practical examination will be conducted at the end of academic year. The practical exam will be graded on the basis of the following marking scheme:

In-Semester Evaluation (Lab Book or Journal)	20 %
Final Exam Written	60 %
Final Exam Oral	20 %

Following are the guideline for the lab work:

1. There should be a lab book for the practical work related to the subject
2. The lab book will contain details of all practical's to be conducted in the lab
3. Students should read the lab book before coming to the lab
4. Every practical should have:
    a. Title
    b. Objectives
    c. Description
    d. Examples
    e. Self Activities
        i. Objective questions
        ii. Sample programs to be typed and executed
    f. Task list to be decided by the lab in-charge.
    g. Outputs to be verified by the lab in-charge.
5. Each practical should be conducted in the following manner:
    a. Explanation by lab in-charge – 10 minutes
    b. Self activities by students
    c. Lab in-charge will allocate tasks to each student (selection from a list / modify given task / specify new task)
    d. At the end of the slot, the lab in-charge has to verify the outputs and give a remark (Complete / Incomplete / Needs Improvement)

Assignment List for Lab Work

All the students will have to complete the following set of programming. Lab in-charge may assign additional assignment depending upon the time available.

1. Assignment to demonstrate use of data types, simple operators (expressions)
2. Assignment to demonstrate decision making statements (if and if-else, nested structures)
3. Assignment to demonstrate decision making statements (switch case)
4. Assignment to demonstrate use of simple loops
5. Assignment to demonstrate use of nested loops
6. Assignment to demonstrate menu driven programs.
7. Assignment to demonstrate writing C programs in modular way (use of user defined functions)
8. Assignment to demonstrate recursive functions.
9. Assignment to demonstrate use of arrays (1-d arrays) and functions
10. Assignment to demonstrate use of multidimensional array(2-d arrays) and functions
11. Assignment to demonstrate use of pointers
12. Assignment to demonstrate concept of strings (string & pointers)
13. Assignment to demonstrate array of strings.
14. Assignment to demonstrate use of bitwise operators.
15. Assignment to demonstrate structures (using array and functions)
16. Assignment to demonstrate structures and unions

17. Assignment to demonstrate command line arguments and pre-processor directives.
18. Assignment to demonstrate file handling (text files)
19. Assignment to demonstrate file handling (binary files and random access to files)
20. Assignment to demonstrate graphics using C

Recommended Books

- Deitel, C.: **How to Program**, 2/e (With CD), Pearson Education.
- Al Kelley, Ira Pohl: "**A Book on C**", Pearson Education.
- Brian W. Keringhan & Dennis M. Ritchie: "**The C programming Language**", PHI
- Bryons S. Gotterfried: "**Programming with C**," TMH
- Stephen G. Kochan: "**Programming in C**", CBS publishers & distributors.
- Yashavant Kanetkar: "**Let us C**", BPB Publications
- Herbert Schildt - **Complete C Reference**
- Forouzan and Gilberg: **Structured Programming approach using C,** Thomson learning publications