Course Plan and Evaluation Scheme

(B. Tech 2nd Semester, 2019-20)

1. Course Code: CS110

2. Course Title: Computer Programming

3. L-T-P: (3-1-0)

4. Credits: 04

5. Semester: B. Tech 2nd Semester

6. Academic Year: 2019-20

7. Course Instructors:

S1: B. R. Chandavarkar

S2: Marwa Mohiddin

S3: Vaishnavi

S4: Sourabh Kanti Addya

S5: Ajay Pratap

S6: Sharath Yaji

8. Teaching Department: Computer Science and Engineering

9. Objective of the course:

The aim of this course is to impart knowledge to analyze, solve, design and code Real-life problems using the C language by

- Learning the basic concepts of computing and problem solving methodologies.
- Analyzing and applying the concepts of programming using 'C' language.

10. Course (Learning) Outcomes (COs):

CO1-Understanding a functional hierarchical code organization.

CO2- Ability to define and manage data structures based on the problem subject domain.

CO3-Understanding a concept of object thinking within the framework of the functional model.

CO4- C programming based model to solve the real world problems

Mapping of COs with Program Outcomes (POs):

(Strength of correlation: S-Strong, M-Medium, W-Weak)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	S	S	M	S	M	S	W	W	S	S	S
CO2	S	S	S	S	S	S	S	M	W	M	S	S
CO3	S	S	S	S	S	S	M	M	M	S	M	S
CO4	S	S	S	S	S	M	S	M	S	M	M	S

11. Course Coverage:

Sl. No. (A)	Topic	Content	Duration (hrs.)
1	Introduction to C Programming language	Types of programming languages, Features of C, Structure of a C program, executing a C program, Characteristics and applications.	1
2	C fundamentals	Constants, Variables, identifiers, keywords and Data types, Storage classes.	2
3	C input/output functions	Unformatted and formatted Input Output functions.	2
4	Operators and expressions in C	Arithmetic, Relational, Logical, assignment, conditional, increment or decrement, bitwise, special operators, associativity and precedence of operators.	2
5	Introduction to computer	Characteristics block diagram, parts of the computer and different kinds of memory, hardware and software, algorithm and flowchart.	2

6	Decision making and branching	Different forms of if statements, switch case, continue, goto, break.	5
7	Decision making and looping	for, while, do-while, nested loop, jumps in loops.	5
8	Arrays	Single and Multi-dimensional array.	5
9	Strings	String handling functions and operations.	3
10	Functions in C	Categories, arrays within functions, nesting of functions, Recursion, Parameter passing methods.	5
11	Structures and Unions	Introduction, structure and array, structure and function, nesting of structures, Bitfields and Unions.	4
12	Pointers in C	Introduction, operations.	3
13	File management in C	Types of files, file modes and file functions, command line arguments.	3
14	Object oriented programming	Introduction, Object oriented features,Comparison of Object Oriented Language with C.	3
15	Cyber security	Introduction	1
Total No. of Hrs.			**46**

12. Reference Books:

[1] Balagurusamy, “C Programming” 3rd edition

[2] Yashwanth Kanetker, “Let Us C”

[3] Byron S Gottfried “Programming with C”

[4] Brian Kernighan and Dennis Ritchie “The C Programming Language”

[5] Balagurusamy, “Object oriented programming using C++”

[6] Herbert Schildt, “C: The Complete Reference”

13. Evaluation Plan:

Sl. No. (B)	Items	Weightage (%)	Remarks
1	End-Sem Exam	40	-
2	Mid-Sem Exam	20	-
3	Class Test	30	Sum of two tests, each of 15% weightage
4	Instructor's Discretion	10	Assignments, Quizzes, Mini-Project, etc.

Note:

- Sl. No. B1-B3 (Table 2) are common for S7-S12 sections
- Grading are common for S7-S12 sections
- Syllabus:
    - Class Test-1: A1-A6
    - Mid-Sem: A1-A8
    - Class Test-2: A9-A11
    - End-Sem: A1-A15
- Tutorial: Discussing at-least two challenging problems

14. Assessment Pattern (Bloom's Taxonomy to design rubrics for evaluating student performance)

Level No.	Knowledge Level	Evaluation Component					Assessment (%)
		Class Test (30%)	Tutorials (5%)	Assignments (5%)	Mid Sem (20%)	Final Exam (40%)	
K1	Remember	10%	0%	0%	10%	10%	8
K2	Understand	20%	20%	20%	20%	15%	18
K3	Apply	20%	20%	10%	25%	25%	22.5
K4	Analyse	20%	20%	10%	20%	25%	21

K5	Evaluate	20%	20%	10%	15%	15%	15.5
K6	Create	10%	20%	50%	10%	10%	15
							100%

Course Instructors: **HOD**

S1: B. R. Chandavarkar

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S5: Ajay Pratap

S6: Sharath Yaji