LESSON PLAN
B.Sc.CSIT

Subject: **Fundamentals of Computer Programming**

Offered in: (Year/Part) **1/1** **Course code:** **CSC-102**

Allocated Time:

Teaching method	Period/Week	Total Periods
Lecture	3	45
Tutorial	1	15
Laboratory/Workshop	3	22.5

Topic (S):

Topic	Outline and Depth				Depth Code	Period
	(Use of the following codes to indicate requirements: Depth, Assignment, weeks)					
	Dm: Demonstration	De: Derive	Ex; Exercise	Dis: Discussion		
	Tu: Assign Tutorial	Nu: Numerical	Pe: Principal	As: Assignment		
	B: Brief	E: Explain	Sd: Definition	Pro: Programming		
1	**Problem solving with computer**					**2.0**
1.1	Problem analysis				E	0.2
1.2	Algorithm and flow chart				E, Ex	0.5
1.3	Structure of C program				E	0.2
1.4	Coding				E, Pro	0.2
1.5	Compilation & Execution				E	0.2
1.6	Debugging				E, Pro	0.5
1.7	Testing & Documentation				E, Pro	0.1
1.8	History of C				E, Pro	0.1
2	**Elements of C**					**4.0**
2.1	C tokens				E	0.25
2.2	Escape Sequence				E	0.25
2.3	Delimiters				E	0.25
2.4	Variables				E, Pro	0.5
2.5	Data types				E, Pro	1.0
2.6	Constants/Literals				E, Pro	0.5
2.7	Expressions				E, Pro	1.0
2.8	Statements and Comments				E, Pro	0.25
3	**Input and Output**					**4.0**
3.1	Conversion specification				E	0.5
3.2	I/O operation				E, Ex, Pro	1.0
3.3	Formatted I/O				Sd, Ex, Pro	2.5
4	**Operators and expressions**					**4.0**
4.1	Introduction				Sd, Ex	0.5
4.2	Arithmetic, Relational, Assignment, Comma operators				Sd, Pro, Ex	1.0

4.3	Logical or Boolean, Ternary, Bitwise, Increment/Decrement operators	Sd, Pro, Ex	2.5
5	**Control statement**		**4.0**
5.1	Branching	E, Pro, Ex	1.0
5.2	Looping	E, Pro, Ex	1.5
5.3	Conditional statement	E, Pro, Ex	1.0
5.4	Continue, Break, exit statement	E, Pro, Ex	0.5
6	**Array**		**6.0**
6.1	Introduction	E, Sd	0.5
6.2	Array Declaration	E, Pro	0.5
6.3	Initialization of array	E, Pro	0.5
6.4	Sorting(bubble, selection), searching (sequential)	Sd, E, Pro	2.0
6.5	Multidimensional Array	E, Pro, Ex	2.5
7	**Functions**		**5.0**
7.1	Library Function	E, Ex, Pro	0.5
7.2	User defined function	E, Ex, Pro	0.25
7.3	Recursion	E, Ex, Pro	1.0
7.4	Function declaration	E, Ex	0.25
7.5	Local & Global variables	E, Ex, Pro	1.0
7.6	Use of array in function	E, Pro	1.0
7.7	Passing by value	E, Pro	0.5
7.8	Passing by reference	E, Pro	0.5
8	**Pointers**		**6.0**
8.1	Introduction	E	
8.2	The & and * operators	E, Ex	1.0
8.3	Declaration of pointer	E, Ex	
8.4	Pointer to pointer	E, Ex	0.5
8.5	Pointer arithmetic	E, Pro	0.5
8.6	Array and pointer	E, Pro	1.0
8.7	Pointer and array	E, Pro	1.0
8.8	Pointer with multi array	E, Pro	0.5
8.9	Pointer and strings	E, Pro	0.5
8.10	Array of pointers with string	E, Pro	0.5
8.11	Dynamic memory allocation	E, Pro	0.5
9	**Structure and Union**		**5.0**
9.1	Introduction	Sd, E, As, Pro	1.0
9.2	Array of Structure	E, As, Pro	0.25
9.3	Array within structure	E, As, Pro	0.25
9.4	Passing structure to function	E, As, Pro	0.5
9.5	Passing array of structure to function	E, As, Pro	0.5
9.6	Nested structure	E, As, Pro	0.5
9.7	Union	Sd, E, As, Pro	0.75
9.8	Bit fields	E, As, Pro	0.25
9.9	Pointer to structure	E, As, Pro	1.0
10	**Files and File Handling in C**		**4.0**
10.1	Concept of file	E	0.5
10.2	Opening & closing of file	E, Pro	0.5
10.3	Modes	E, Pro	0.5

10.4	Input/output function	E, Pro	1.0
10.5	Random Accessing files	E, Pro	1.0
10.6	Printing a file	E, Pro	0.5
11	**Introduction to graphics**		**3.0**
11.1	Modes	Sd	0.3
11.2	Initialization	E, Pro	0.7
11.3	Graphics function	E, Pro	2.0

Lab Works: Lab should be performed covering all the listed topics above.

References:

1 Deitel, C: How to program, 2/e (with CD), Pearson Education
2 Al Kelley, Ira Pohl:"A Book on C", Pearson Education
3 Brain W. Kerighan & Dennis Ritchie:" The C Programming Language", PHI
4 Byrons S. Gotterfried:" Programming with C", TMH
5 Stephen G Kochan:" Programming in C", CBS publishers & distributors.
6 Yeshvant Kanetkar:" Let us C", BPB Publication