Lesson plan

Name if the faculty : Mr. Himanshu Kaushik

Discipline : Civil Engineering

Semester : 1st

Subject : Programming for Problem Solving

Lesson Plan Duration : 15 weeks (From August, 2018 to November 2018)

Work Load (Lecture/ Practical) per week (in hours): Lecture-03, Practical-02

Week	Theory		Practical	
	Lecture day	Topic(Including assignment/test)	Practical Day	Topic
1st	1st	Introduction to Programming	1st	Familiarization with programming environment
	2nd	Idea of Algorithm		
	3rd	Steps to solve logical and numerical problems		
	4th	Representation of Algorithm		
2nd	1st	Flowchart/Pseudocode with examples	2nd	Simple computational problems using arithmetic expressions
	2nd	C Programming		
	3rd	Keywords, Variables and Data Types		
	4th	basic, derived and user defined, Type Conversions		
3rd	1st	Header Files	3rd	Problems involving if-then-else structures
	2nd	Basic Input and Output Functions and Statements		
	3rd	Compilation		
	4th	Syntax and Logical Errors in compilation		
4th	1st	Object and Executable Code	4th	Iterative problems e.g., sum of series
	2nd	Storage Classes		
	3rd	Arithmetic Expressions and Precedence		
	4th	Revision of 1st unit with test.		
5th	1st	Preprocessors	5th	Iterative problems e.g., sum of series
	2nd	Conditional and Branching Statements		
	3rd	Loops/ Iterative Statements		
	4th	Writing and evaluation of conditionals		
6th	1st	consequent branching	6th	1D Array manipulation
	2nd	Revision of 2nd unit with test.		

	3rd	Arrays (1-D, 2-D)		
	4th	Character Arrays and Strings		
7th	1st	Arrays with Pointers	7th	Matrix problems, String operations
	2nd	Functions (including using built in libraries)		
	3rd	Parameter passing in functions		
	4th	Call by Value		
8th	1st	Call by Reference	8th	Simple functions
	2nd	Passing arrays to functions		
	3rd	Recursion		
	4th	as a different way of solving problems		
9th	1st	Example programs, such as Finding Factorial, Fibonacci series, Ackerman function etc	9th	Programming for solving Numerical methods problems
	2nd	Revision of 3rd unit with test.		
	3rd	Idea of pointers		
	4th	Defining pointers		
10th	1st	Use of Pointers in self-referential structures	10th	Programming for solving Numerical methods problems
	2nd	Introduction to Dynamic Memory Allocation and its Methods		
	3rd	Structures, Union		
	4th	Defining Structures and Array of Structures		
11th	1st	File Handling	11th	Recursive functions
	2nd	Revision of 4th unit with test.		
	3rd	Overall Revision		
	4th	Overall Revision		