**Lesson Plan**

**Name of faculty: MS. MONIKA VF**

**Discipline: MECH. ENGG**

**Semester: 2nd**

**Subject: Programming in C**

Lesson Plan Duration: 15 weeks (from January, 2018 to April, 2018)

Work Load(Lecture/Practical) per week (in hours): Lectures: 03, Practicals-06, Tutorials-02

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| **Week** | **Theory** | **Practical** |
|  | **Lecture day** | **Topic(Including assignment/ test)** | **Practical day** | **Topic** |
| 1st |  | Overview of Computers: Block diagram and its description,  | G1/G2 | Introduction to C- Compiler and Turbo-CEditor |
|  | Number systems, Arithmetic of number systems |
|  | Computer Hardware: Printers |
| 2nd |  | Keyboard and Mouse,  | G1 | Basic command of C -Language |
|  | Storage Devices. |  |
|  | Introduction to programming language: Different levels of PL: High Level language, Assembly language, Machine language;  | G2 |
| 3rd |  | Introduction to Compiler, Interpreter, Debugger,  | G1 | 1. Write a program to find the sum of individual digits of a positive integer. 2. Write a program to generate the first n terms of the Fibonacci sequence. |
|  | Linker, Loader, Assembler. |  |
|  | Problem Analysis: Problem solving techniques | G2 |
| 4th |  |  Algorithms and | G1 | 3. Write a program to generate all the prime numbers between 1 and n, where n is the input value given by the user. |
|  | Flowchart representation |  |
|  | Review of unit first or queries related to it | G2 |
| 5th |  | Overview of C: Elements of C, Data types;  | G1 | 5. Write a program to find the roots of a quadratic equation. |
|  | Storage classes in C;  |  |
|  | Operators: Arithmetic, relational, logical, bitwise, unary, assignment and conditional operators. | G2 |
| 6th |  | Precedence & associativity of operators | G1 | 6.Write a C functions to find both the largest and smallest number of an array of integers. |
|  | Input/output: Unformatted & formatted ,I/O function in C |  |
|  | FIRST SESSIONAL EXAM | G2 |
| 7th |  | Control statements: if statement, switch statement;  | G1 | 8. Write a program for addition of Two Matrices |
|  | Repetition: while, and do-while loop;  |  |
|  |  | G2 |
| 8th |  | For loop syntax and detail | G1 | 10. Write a program for Matrix multiplication by checking compatibility |
|  | Break, continue, goto statements. |  |
|  | Review of unit 2nd and Queries | G2 |
| 9th |  | Arrays: Definition, initialization,  | G1 | 11. Write programs that use both recursive and non-recursive functions for the following a. To find the factorial of a given integer |
|  | processing an array,. |  |
|  |  Types of Array, String handling | G2 |
| 10th |  | SECOND SESSIONAL EXAM | G1 | 12. Write a function that uses functions to perform the count the lines, words and characters in a given text. |
|  | Functions: Definition, prototype,  |  |
|  | Parameters passing techniques, recursion, | G2 |
| 11th |  | Built-in functions | G1 | Write a program to implement call by reference |
|  | Passing arrays to functions,  |  |
|  | Returning arrays from functions | G2 |
| 12th |  | Pointers: Declaration, operations on pointers,  | G1 | Write a program to concatenate two strings 19. Write a program to check that the input string is a palindrome or not. |
|  | Pointers and arrays,  |  |
|  | Dynamic memory allocation,  | G2 |
| 13th |  | Pointers and functions,  | G1 | Write a program to read a string and write it in reverse order |
|  | Pointers and strings |  |
|  | Review of unit 3rd and Queries | G2 |
| 14th |  | Structure & Union: Definition, processing,  | G1 | 13. Write a program to explores the use of structures, union and other user defined variables |
|  | Structure and pointers |  |
|  | Passing structures to functions,Use of union. | G2 |
| 15th |  | Data files: Opening and closing a file | G1 | Write a program which copies one file to another. |
|  |  I/O operations on files. |  |
|  | THIRD SESSIONAL EXAM | G2 |

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| Text Books  |  1 Computer Fundamental and Programming in C, Pradip Dey and Manas Ghose, Oxford Pub.2 Vikas Gupta, Computer Concepts and C Programming, Dreamtech |
| Reference Books | 1.Let us C, BPB Publications ,Yashwant Kanetker.2.A K Sharma, Fundamentals of Computers & Programming, Dhanpat Rai Publications |