Subject Code	Subject Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut.	Theory	Pract.	Tut	Total
FEC205	Structured Programming Approach	04	02	--	04	01	--	05
		Examination Scheme						
		Theory Examination				Term Work	Pract.	Oral	Total
		Internal Assessment			End Sem. Exam				
		Test 1	Test 2	Avg.					
		20	20	20	80	25	25	---	150

Objective:

This subject aims to provide students with an understanding of the role computation can play in solving problems. The Course will be taught using C-Programming Language.

Outcome:

Learner will able to

1. Understand the basic terminology used in computer programming.
2. Write, compile and debug programs in C language.
3. Use different data types in a computer program.
4. Design programs involving decision structures, loops and functions.
5. Describe the dynamics of memory by the use of pointers.
6. Use different data structures and create/update basic data files.

Sr. No.	Module	Detailed Content	Hours
1	**Introduction to Computer, Algorithm And Flowchart**	**1.1 Basics of Computer:** Turing Model, Von Neumann Model, Basics of Positional Number System, Introduction to Operating System and component of an Operating System. **1.2 Algorithm & Flowchart :** Three construct of Algorithm and flowchart: Sequence, Decision (Selection) and Repetition	**06**
2	**Fundamentals of C-Programming**	**2.1** Character Set, Identifiers and keywords, Data types, Constants, Variables. **2.2 Operators**-Arithmetic, Relational and logical, Assignment, Unary, Conditional, Bitwise, Comma, other operators. Expression, statements, Library Functions, Preprocessor. **2.3 Data Input and Output** – getchar( ), putchar( ), scanf( ), printf( ), gets( ), puts( ), Structure of C program .	**06**

3	**Control Structures**	**3.1 Branching** - If statement, If-else Statement, Multiway decision. **3.2 Looping** – while , do-while, for **3.3 Nested control structure**- Switch statement, Continue statement Break statement, Goto statement.	**12**
4	**Functions and Parameter**	**4.1Function** -Introduction of Function, Function Main, Defining a Function, Accessing a Function, Function Prototype, Passing Arguments to a Function, Recursion. **4.2 Storage Classes** –Auto , Extern , Static, Register	**06**
5	**Arrays , String Structure and Union**	**5.1 Array**-Concepts, Declaration, Definition, Accessing array element, One-dimensional and Multidimensional array. **5.2 String**- Basic of String, Array of String , Functions in String.h **5.3 Structure**- Declaration, Initialization, structure within structure, Operation on structures, Array of Structure. **5.4 Union** - Definition , Difference between structure and union , Operations on a union	**14**
6	**Pointer and Files**	**6.1 Pointer** :Introduction, Definition and uses of Pointers, Address Operator, Pointer Variables, Dereferencing Pointer, Void Pointer, Pointer Arithmetic, Pointers to Pointers, Pointers and Array, Passing Arrays to Function, Pointers and Function, Pointers and two dimensional Array, Array of Pointers, Dynamic Memory Allocation. **6.2 File**s: Types of File, File operation- Opening, Closing, Creating, Reading, Processing File.	**08**

Text Books:

1. "MASTERING C" by K.R.Venugopal and SudeepR.Prasad , Tata McGraw-Hill Publications.
2. "A Computer Science –Structure Programming Approaches using C ", by BehrouzForouzan , Cengage Learning .
3. Schaum's outlines "Programming with C", by Byron S. Gottfried, Tata McGraw-Hill Publications.

Reference Books:

1. "Basics of Computer Science", by BehrouzForouzan , Cengage Learning .
2. "Programming Techniques through C", by M. G. Venkateshmurthy, Pearson Publication.
3. "Programming in ANSI C", by E. Balaguruswamy, Tata McGraw-Hill Education.
4. "Programming in C", by Pradeep Day and Manas Gosh, Oxford University Press.
5. "Let Us C", by Yashwant Kanetkar, BPB Publication.

Laboratory Assignments:

1. Students are expected to solve and execute at least 20 programming problems based on above Syllabus.
2. Journal work should comprise of writing the problem definition, solution of problem either as algorithm and flow chart and source code in C (Advisable hand written) for all the 20 problems.

Assessment:

Internal Assessment :

Assessment consists of two tests, First test should be conducted after 40% syllabus and Second test should be conducted after 70% Syllabus.

End Semester Theory Examination:

1. Question paper will comprise of total six question
2. All question carry equal marks and Q.1 will be compulsory, based on entire syllabus
3. Questions will be mixed in nature (for example supposed Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3)
4. Only Four question need to be solved.

In question paper weightage of each module will be proportional to number of respective lecture hours as mention in the syllabus.