Detailed Syllabus:

	Semester- I				
Paper - I					
Course Type: Core Credit Course Code: CS101					
Course Title : Problem	m Solving Using Computer and	'C' Programming - I			
Teaching Scheme	No. of Credits	Examination Scheme			
2 Hours / Week	2	IE: 15 Marks			
		UE: 35 Marks			
Course Objectives					
1. To introduce the foundations	of computing, programming and p	problem- solving using			
computers.					
2. To develop the ability to analy	yze a problem and devise an algor	ithm to solve it.			
3. To formulate algorithms, pseu	idocodes and flowcharts for arithr	netic and logical problems			
4. To understand structured prog	gramming approach.				
5. To develop the basic concepts	s and terminology of programming	g in general.			
6. To implement algorithms in the	he 'C' language.				
7. To test, debug and execute pr	ograms.				
Course Outcomes:- On completion of this course, students will be able to :					
1. Explore algorithmic approach	es to problem solving.				
2. Develop modular programs us	sing control structures and arrays	in 'C'.			
	Course Contents				
Chapter 1 Problem Solving	Aspects	5 Hours			
1.1. Introduction to problem sol	ving using computers.				
1.2. Problem solving steps.					
1.3 Algorithms-definition, chara	cteristics, examples, advantages a	and limitations.			
1.4 Flowcharts - definition, notations, examples, advantages and limitations, Comparison with					
algorithms.					
1.5 Pseudo codes - notations, examples, advantages and limitations.					
1.6 Programming Languages as tools, programming paradigms, types of languages					
1.7 Converting pseudo-code to programs.					
1.8 Compilation process (compilers, interpreters), linking and loading, syntax and semantic					
errors, testing a program					
1.9 Good Programming Practices (naming conventions, documentation, indentation).					
Chapter 2 'C' Fundamenta	hls	7 Hours			
2.1 History of 'C' language.					
2.2 Application areas.					
2.2 Application areas.2.2 Structure of a 'C' program.					
2.2 Application areas.2.2 Structure of a 'C' program.2.3 'C' Program development lit	fe cycle.				

2.4 Function as building blocks. 2.5 'C' tokens 2.6 Character set, Keywords, Identifiers 2.7 Variables, Constants (character, integer, float, string, escape sequences, enumeration constant). 2.8 Data Types (Built-in and user defined data types). 2.9 Operators, Expressions, types of operators, Operator precedence and Order of evaluation. 2.10 Character input and output. 2.11 String input and output. 2.12 Formatted input and output. **Control Structures 6 Hours** Chapter 3 3.1 Decision making structures:- if ,if-else, switch and conditional operator. 3.2 Loop control structures:- while ,do while, for. 3.3 Use of break and continue. 3.4 Nested structures. 3.5 Unconditional branching (goto statement). Chapter 4 **Functions 6 Hours** 4.1 Concept of function, Advantages of Modular design. 4.2 Standard library functions. 4.3 User defined functions:- declaration , definition, function call, parameter passing (by value), return statement. 4.4 Recursive functions. 4.5 Scope of variables and Storage classes. Chapter 5 **6 Hours** Arrays 5.1 Concept of array. 5.2 Types of Arrays – One, Two and Multidimensional array. 5.3 Array Operations - declaration, initialization, accessing array elements. 5.4 Memory representation of two-dimensional array (row major and column major) 5.5 Passing arrays to function. 5.6 Array applications - Finding maximum and minimum, Counting occurrences, Linear search, Sorting an array (Simple exchange sort, bubble sort), Merging two sorted arrays, Matrix operations (trace of matrix, addition, transpose, multiplication, symmetric, upper/ lower triangular matrix) **Reference Books:** 1. How to Solve it by Computer, R.G. Dromey, Pearson Education. Problem Solving and Programming Concept, Maureen Sprankle,7th Edition, Pearson 2.

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Publication.

- 3. C: the Complete Reference, Schildt Herbert, 4th edition, McGraw Hill
- 4. A Structured Programming Approach Using C, Behrouz A. Forouzan, Richard F. Gilberg, Cengage Learning India
- 5. The 'C' programming language, Brian Kernighan, Dennis Ritchie, PHI
- 6. Programming in C , A Practical Approach, Ajay Mittal, Pearson
- 7. Programming with C, B. Gottfried, 3rd edition, Schaum's outline Series, Tata McGraw Hill.
- 8. Programming in ANSI C, E. Balagurusamy, 7th Edition, McGraw Hill.

	Semester- II			
	Paper - I			
Course Type:	Core Credit Co	urse Code: CS201		
Teaching Scheme	No of Credits	Examination Scheme		
2 Hours / Week	2	IE : 15 Marks		
		UE: 35 Marks		
Prerequisites				
Problem Solving tools lik	ke algorithms, flowcharts and	pseudocodes.		
• Basic knowledge of 'C' l	anguage.			
Course Objectives :-				
• To study advanced concepts	of programming using the 'C	'language.		
• To understand code organiza	tion with complex data types	and structures.		
• To work with files.				
Course Outcomes:- Student will be able to :-				
Develop modular program	ms using control structures, po	binters, arrays, strings and		
structures	tions to neal would problems w	sina C		
• Design and develop solut	tions to real world problems u	sing C.		
	Course Contents			
Chapter 1 Pointers		8 Hours		
1.1. Introduction to Pointers.	-1:			
1.2. Declaration, definition, initi	alization, dereferencing.			
1.5. Pointer antimetic.	s & Pointers- Pointer to array	Array of pointers		
1.4. Kelationship between Arrays & Founters- Founter to array, Array of pointers.				
1.6. Functions and pointers- Passing pointer to function. Returning pointer from function				
Function pointer.				
1.7. Dynamic memory management- Allocation(malloc(),calloc()), Resizing(realloc()),				
Releasing(free()).,				
1.8. Memory leak, dangling pointers.				
1.9. Types of pointers.				
Chapter 2 Strings		6 Hours		
2.1 String Literals, string variabl	es, declaration, definition, ini	cialization.		
2.2 Syntax and use of predefined string functions				
2.3 Array of strings.				
2.4. Strings and Pointers				
2.5. Command line arguments.				

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Chapter 3 Structures And Unions. 8 Hours 3.1. Concept of structure, definition and initialization, use of typedef. 3.2. Accessing structure members. 3.3. Nested Structures 3.4. Arrays of Structures 3.4. Arrays of Structures 3.5. Structures and functions- Passing each member of structure as a separate argument, Passing structure by value / address. 3.6. Printers and structures. 3.7. Concept of Union, declaration, definition, accessing union members. 3.8. Difference between structures and union. 6 Hours Chapter 4 File Handling 6 Hours 4.1. Introduction to streams. 4.2. Types of files. 4.3. Operations on text files. 4.4. Standard library input/output functions. 4.4. Standard library input/output functions. 4.5. Random access to files. Chapter 5 Preprocessor 2 Hours 6.1. Role of Preprocessor 2 Hours 6.2. Format of preprocessor directive 6.3. File inclusion directives (#include) 6.4. Macro substitution directive, argumented and nested macro 6.5. Macros versus functions Preprocesor 2 H			1		
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 The 'C' programming language, Brian Kernighan, Dennis Ritchie, PHI Programming in C , A Practical Approach, Ajay Mittal , Pearson Programming with C, B. Gottfried, 3rd edition, Schaum's outline Series, Tata McGraw Hill. Programming in ANSI C, E. Balagurusamy, 7th Edition, McGraw Hill. 	2. A Suructured Flogramming Approach Using C, Denrouz A. Forouzan, Kichard E. Gilberg, Cengage Learning India				
 Programming in C ,A Practical Approach, Ajay Mittal , Pearson Programming with C, B. Gottfried, 3rd edition, Schaum's outline Series, Tata McGraw Hill. Programming in ANSI C, E. Balagurusamy, 7th Edition, McGraw Hill. 	The 'C' programming language Brian Kamighan Dannis Ditabia DUI				
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 Frogramming with C, B. Gotthed, 5 edition, Schaum southine series, Tata McGraw Hill. Programming in ANSI C, E. Balagurusamy, 7th Edition, McGraw Hill. 	 Programming in C , A Practical Approach, Ajay Mittal, Pearson Drogramming with C B. Cottfried 2rd addition. Schemer's authing Series. Teta McCourse 				
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