Regulation GRBT-20	Godavari Institute of Engineering & Technology (Autonomous)	I B.Tech II Sem.			
CourseCode	**Fundamentals of Computer Programming** (Common to Mech, Min, Civil, AME, EEE, PET)				
Teaching	Totalcontacthours-48	L	T	P	C
Prerequisite(s): Basic knowledge of Mathematics, Logical Ability		3	0	0	3

Course Objective(s):
- ➢ Exposure to problem solving through programming
- ➢ Basic concepts of C-programming language
- ➢ Involves a lab component which is designed to give the student hands-on experience with the concepts.

Course Outcomes:

After successful completion of this course, a student will be able to-

CO-1: Obtain the knowledge about different languages used in computer programming and basic terminology used in the computer programming.

CO-2: Write algorithm, flow chart, and structure of C program and make use of different C tokens inside C program.

CO-3: Develop program by using Control structure, different looping and Jump statement.

CO-4: Implement applications of Array, Structure and String inside the program.

CO-5: Obtain knowledge about accessing the memory in the program and also to develop the program by using different types of function calls.

UNIT-1

Introduction to Computers: Generations,CPU, Memory, I/o Devices

Introduction to Computer Programming: Computer Languages: Machine level, Assembly level and High-level language.

Introduction to Problem Solving: Algorithm, Pseudo code and Flowchart.

UNIT-2

C Fundamentals: Structure of a C-program,C-character set, C Tokens:variables, constants, identifiers, data types and sizes, operators, Preprocessor.

I/O Functions: Header files, Standard I/O library functions-formatted I/O functions.

Decision making statements: simple if, if-else, nested if-else, else-if ladder, switch-case statements and sample programs.

Iterative Statements: for, while, do-while. Jump Statements-break, continue, goto

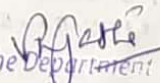**UNIT-3**

Introduction to Arrays&Strings

Arrays- Declaration, initialization, storing and accessing elements of 1-D, 2-D and multi-dimensional arrays.

Array Applications:addition, multiplication, transpose, symmetry of a matrix.

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RAJAMAHENDRAVARAM, A.P., INDIA -

Strings: Declaration, initialization, reading and writing characters into strings, string operations, character and string manipulation functions.

UNIT-4: Pointers,Functions & Storage Classes
Pointers: Introduction to pointers, defining a pointer variable, Pointer to Pointer, Examples of pointers, using pointers in expressions, pointers and arrays.
Functions: declaration, definition, prototype, function call, return statement, types of functions, parameter passing methods, and function recursion.
Storage Classes: Auto, Static, Extern and Register

UNIT-5: Structures &Unions
Structure and Union: Declaration, initialization, storing and accessing elements by using structure and union.

Text Books
1. Problem Solving and Programming Concepts, Maureen Sprankle and Jim Hubbard, Pearson, 9th Edition.
2. "Programming in ANSI C" by E.Balagurusamy,McGraw Hill Publications.
3. "Programming in C" by Ashok N. Kamthane, 2/e Pearson, 2013.
4. "The C – Programming language" B.W.Kernighan, Dennis M. Ritchie.PHI.
5. "Let Us C", 12th Edition by Yashavant P. Kanetkar online in India.

Reference Books
1. Programming in C by Ajay Mittal, Pearson.
2. Programming with C, Bichkar, Universities press.
3. Programming in C, ReemaThareja, OXFORD.

CO-PO Mapping:

(1: Slight [Low];   2: Moderate[Medium];   3: Substantial[High], '-' : No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	2	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	3	-	-	-	-	-	-	-
CO4	-	-	-	-	3	-	-	-	-	-	-	-
CO5	-	-	-	-	3	-	-	-	-	-	-	-

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