

Branch Name:	Computer Engineering Artificial Intelligence & Machine Learning (AI/ML)
Program Code:	ET404, ET409
Course Name:	Computer Programming - I
Course Code:	2ET4000112
Pre-requisite Course:	----

Course Objectives: (Min 3)

1. To make the student learn a programming language.
2. To learn problem solving techniques.
3. To teach the student to write programs in C and to solve the problems.
4. Practice the use of conditional and looping statements.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
3	-	4	5	60	40	40	60	200

Subject Contents:

SR. NO.	Topic and Sub-Topics	Total Hrs.	WEIGHTAGE %
Unit - 1	Algorithm and Flowchart 1.1 Basic of Algorithm, Structure of Algorithm 1.2 Flowcharts, Definition, Importance of Flowcharts, 1.3 Flowchart Symbols, Flowchart structure	05	10
Unit - 2	Introduction to Programming 2.1 Types of Programming language, 2.2 History of C, Importance of C, Applications, 2.3 Basic Structure of C Programming, 2.4 Execution of C Programs, 2.5 printf and scanf, Comments	08	20
Unit - 3	Constants, Variables and Data Types 3.1 Character Set, C Tokens, Keywords and Identifiers, 3.2 Constants, Variables, Data Types, 3.3 Declaration of Variables, Storage Class, Assigning Values to Variables, Constant variable,	05	20

Unit - 4	Operators and Expression 4.1 Introduction to Operators, 4.2 Arithmetic Operators, 4.3 Relational Operator, 4.4 Logical Operators, 4.5 Assignment Operator, 4.6 Incrementand Decrement Operators, 4.7 Conditional Operators, 4.8 Bitwise Operators, 4.9 Comma Operator, 4.10 sizeof() operator, 4.11 Arithmetic Expression and its evaluations, 4.12 Operator Precedence, 4.13 Type Conversions: Implicit, Explicit	08	20
Unit - 5	Decision Making with Branching and Looping 5.1 simple if, 5.2 if...else, 5.3 nested if...else, 5.4else...if ladder, 5.5 switch statements, 5.6 Ternary operator, 5.7 goto, While, do...while, for, break, continue	10	20
Unit - 6	Arrays 6.1 Introduction, 6.2 One Dimensional Arrays, 6.3 Declaring of one Dimensional arrays Initialization	06	10

SUGGESTED LIST OF EXERCISES/PRACTICAL/EXPERIMENTS:

1. Draw Flow Chart and write algorithm for at least four problems.
2. Write minimum 6 programs using Constants, Variables
3. Write minimum 3 programs for arithmetic expression.
4. Write program to understand Data types.
5. Write program to understand Type modifiers.
6. Write program to understand Type conversion.
7. Write program to perform formatted output.
8. Write minimum 5 program for each types of operator.
9. Write programs using If, If-else, If-else-if and Nested If statements.
10. Write programs using break, continue, go to and switch statements.
11. Write programs to understand simple for loop and nested loops.
12. Write programs using While Loop and do-while loop.
13. Write program on arrays.

Text Books / Reference Books:

Sr. No.	Title of Books	Author	Publication
1.	Programming in ANSI C	E Balagurusamy	McGraw Hill
2.	Let Us C	Yashavant Kanetkar	(BPB Publications)

List of Open Source Software/learning website:

- <https://www.beginnersbook.com/>
- <https://www.tutorialspoint.com/>
- <https://www.geeksforgeeks.org/>
- <https://www.vlab.co.in/>

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Implement the algorithms and draw flowcharts for solving Mathematical and Engineering problems.	2 Understanding 4 Analyze
CLO2	Read, understand and trace the execution of programs written in C language.	2 Understanding
CLO3	Write the C code for a given algorithm.	3 Applying 6 Creating
CLO4	To be able to develop C programs on linux platform.	3 Applying 6 Creating
CLO5	Able to Design and Develop and Analyze Computer Program using concepts of Declaration, Initialization, Looping, Branching etc...	5, 3, 4, 6 Evaluate,Applying, Analyze, Creating
CLO6	Learn to build small applications using C	6 Creating

Course Learning Outcomes	Program Outcomes (Pos)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CLO1	M											
CLO2	H											
CLO3	H						M					
CLO4	M					L						
CLO5	H	M		M			H					
CLO6	M	L		L								L

H: High, M: Medium, L: Low