SYLLABUS FOR C-PROGRAMMING FOR SKILL DEVELOPMENT PROGRAME

(First semester & Second semester)

For Tika Ram Kanya Mahavidyalaya

FOR THE SESSION
(2024-25)

Title of Course	Basic Course in C-Programming
Board Area / Selector	Computer Science
Sub Sector	Basic Course on Computer
Nature of course-independent/progressive	Both
Expected Fee of the course-Fee paid	Both
Course order	Credits-03 (1 Theory, 2 Practical)
Maximum Marks	100
Minimum Marks	40
Name of proposed Skill partner (please specify name of industry, company, practical training/internship)	Altica Green Computer Education, other Skill Partners, Any other organisation.
Job Prospectus, Fields of occupations where students will be able to get job after completing the above-mentioned course.	As a programmer, app developer, back hand, etc.

Syllabus:

S.no	Topics	General/ Skill	Theory/practical	Duration (Theory)	Duration (practical)
1.	Fundamentals of C, overview of C	General	Theory	2 HRS	10 hrs
2.	Data types in C, Variables in C	Skill	Both	3 HRS	10 hrs
3.	Constant, operators	Skill	Both	2 HRS	10 hrs
4.	Use of IF statements	Skill	Both	3 HRS	10 hrs
5.	Loops in C language	Skill	Both	3 HRS	10 hrs
6.	Control Flow	Skill	Both	3 HRS	10 hrs

Suggested Digital platforms/weblinks for Reading-

Training/Skill Partner- Altica Green Computer Education

Evaluation Methods: MCQ, Practical

Eligibility to learn this course: any one can learn this course

Any Online Course Required : No Need

Any Remarks

Duration for the above topics may Vary

SYLLABUS FOR C-PROGRAMMING FOR SKILL DEVELOPMENT PROGRAME

(First semester)

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S. No.	Topic	Theory	Practical
1.	Introduction to Programming	02	10
2.	Algorithms for Problem Solving	02	10
3.	Introduction to 'C' Language	02	10
4.	Conditional Statements and Loops	04	15
5.	Arrays	05	15
	Total	**15**	**60**

Detailed Syllabus for First semester

1. Introduction to Programming   02 Hrs.

The Basic Model of Computation, Algorithms, Flow-charts, Programming Languages, Compilation, Linking and Loading, Testing and Debugging, Documentation

2. Algorithms for Problem Solving   02 Hrs.

Exchanging values of two variables, summation of a set of numbers, Decimal Base to Binary Base conversion, Reversing digits of an integer, GCD (Greatest Common Division) of two numbers, Test whether a number is prime, Organize numbers in ascending order, Find square root of a number, factorial computation, Fibonacci sequence, Evaluate 'sin x' as sumof a series, Reverse order of elements of an array, Find largest number in an array, Print elements of upper triangular matrix, multiplication of two matrices, Evaluate a Polynomial

3. Introduction to 'C' Language   02 Hrs.

Character set, Variables and Identifiers, Built-in Data Types, Variable Definition, Arithmetic operators and Expressions, Constants and Literals, Simple assignment statement, Basic input/output statement, Simple 'C' programs.

4. Conditional Statements and Loops   04

Hrs. Decision making within a program, Conditions, Relational Operators, Logical Connectives, if statement, if-else statement, Loops: while loop, do while, for loop, Nested loops, Infinite loops,Switch statement, structured Programming.

5. Arrays   05 Hrs.

One dimensional arrays: Array manipulation; Searching, Insertion, Deletion of an element from an array; Finding the largest/smallest element in an array; Two dimensional arrays, Addition/Multiplication of two matrices, Transpose of a square matrix; Null terminated strings as array of characters, Standard library string functions

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Syllabus:

S.no	Topics	General/ Skill	Theory/practical	Duration (Theory)	Duration (practical)
1.	Functions	General	Both	2 HRS	10 hrs
2.	Storage Classes	Skill	Both	3 HRS	10 hrs
3.	Structures and Unions	Skill	Both	2 HRS	10 hrs
4.	Pointers	Skill	Both	3 HRS	10 hrs
5.	Self-Referential Structures and LinkedLists	Skill	Both	3 HRS	10 hrs
6.	File Processing	Skill	Both	3 HRS	10 hrs

Suggested Digital platforms/weblinks for Reading-

Training/Skill Partner- Altica Green Computer Education

Evaluation Methods: MCQ, Practical

Eligibility to learn this course: any one can learn this course

Any Online Course Required : No Need

Any Remarks

Duration for the above topics may Vary

SYLLABUS FOR C-PROGRAMMING FOR SKILL DEVELOPMENT PROGRAME
(Second semester)
For Tika Ram Kanya Mahavidyalaya

1.	Functions	03	10
2.	Storage Classes	04	10
3.	Structures and Unions	02	10
4.	Pointers	02	10
5.	Self-Referential Structures and LinkedLists	02	10
6.	File Processing	02	10
	Total	**15**	**60**

Detailed Syllabus for Secon semester

1. **Functions**   **03hrs.**

   Top-down approach of problem solving, Modular programming and functions, Standard Library of C functions, Prototype of a function: Formal parameter list, Return Type, Function call, Blockstructure, Passing arguments to a Function: call by reference, call by value, Recursive Functions,arrays as function arguments.

2, **Storage Classes**   **04 Hrs.**

   Scope and extent, Storage Classes in a single source file: auto, extern and static, register, Storage Classes in multiple source files: extern and static

3. **Structures and Unions**   **02 Hrs.**

   Structure variables, initialization, structure assignment, nested structure, structures and functions, structures and arrays: arrays of structures, structures containing arrays, unions

4. **Pointers**   **02 Hrs.**

   Address operators, pointer type declaration, pointer assignment, pointer initialization, pointer arithmetic, functions and pointers, Arrays and Pointers, pointer arrays, pointers and structures,dynamic memory allocation.

5. **Self-Referential Structures and Linked Lists**   **02 Hrs.**
6. Creation of a singly connected linked list, Traversing a linked list, Insertion into a linked list, Deletion from a linked list
7. **File Processing**   **02 Hrs.**

   Concept of Files, File opening in various modes and closing of a file, reading from a file, Writing onto a file.