

C LANGUAGE SYLLABUS COPY

Engineered for skill enhancement.



PROGRAM HIGHLIGHTS

Accredited Certificates :

- ✓ Program approved ISO Certification

Internships :

- ✓ Industry-relevant opportunities provided-

Placement Assistance :

- ✓ Career guidance from industry experts-

Basic to Advanced Level Training :

- ✓ Learn from experienced AI professionals .

Live & Recorded Lectures :

- ✓ Flexible learning at your convenience .

Real-Time Projects :

- ✓ Hands-on minor & major projects



ABOUT US

- **OUR MISSION :**

Nxt Sync is a pioneering EdTech company committed to bridging the gap between theoretical learning and practical application. Our mission is to empower students with cutting-edge AI skills that enhance employability and prepare them for a tech-driven future.

- **OUR VISION--UPSKILL:** Empowering minds for the future.
- **INNOVATE:** Fostering creativity and breakthroughs .
- **EXCEL:** Preparing industry-ready professionals.

WHY C LANGUAGE?

- ➤ Foundational Language for All Modern Programming
- Ideal for System-Level Programming and Embedded Systems
- Improves Logical Thinking & Problem Solving
- Widely Used in Operating Systems, IoT & Robotics
- Strong Base for Learning C++, Java, and Python
- High Demand in Core Software Development Roles



LEARNING PATH

- Introduction to Programming & C Language
- Data Types, Variables & Operators
- Control Statements & Loops
- Functions in C
- Arrays & Strings
- Pointers & Memory Management
- Structures & Unions
- File Handling in C
- Dynamic Memory Allocation
- Data Structures in C (Stacks, Queues, Linked Lists)
- Real-Time Projects & Industry Use Cases



DETAILED MODULE BREAKDOWN

Module 1: Introduction to C Programming

- History & Evolution of C
- Features & Applications
- Writing First Program
- Compilation & Execution Process

Module 2: Variables, Data Types & Operators

- Basic Syntax & Structure
- Keywords & Identifiers
- Constants & Variables
- Arithmetic, Relational & Logical Operators



Module 3: Control Flow & Loops

- if, if-else, nested if
- switch-case
- for, while, do-while loops
- break, continue & goto

Module 4: Functions in C

- Defining and Calling Functions
- Function Prototypes & Recursion
- Call by Value vs. Call by Reference

Module 5: Arrays & Strings

- 1D & 2D Arrays
- String Handling Functions
- Sorting & Searching Algorithms



Module 6: Pointers

- Basics of Pointers
- Pointers & Arrays
- Pointer Arithmetic
- Pointers to Functions

Module 7: Structures & Unions

- Declaring Structures
- Nested Structures
- Unions & Memory Allocation

Module 8: File Handling in C

- File Types & Modes
- Reading & Writing to Files
- File Functions (fopen, fread, fwrite, fclose)



Module 9: Dynamic Memory Allocation

- malloc, calloc, realloc, free
- Handling Memory Efficiently
- Memory Leaks & Debugging

Module 10: Data Structures in C

- Stack & Queue Implementation
- Singly & Doubly Linked Lists
- Basic Tree & Graph Concepts

Module 11: Real-Time Projects & Capstone

- Mini & Major C Programming Projects
- Application in Embedded, IoT, and System Software
- Code Optimization & Debugging Techniques

ASSIGNMENT'S & ASSESSMENTS

- ➤ Weekly coding tasks & debugging exercises
- ➤ Mid-term C programming mini-projects
- ➤ Final capstone system-level C project
- ➤ Live code reviews & doubt-clearing sessions

TOOLS & FRAMEWORKS USED

- Code::Blocks, Turbo C++, Dev C++
- GCC Compiler
- Valgrind (for Memory Management)
- GDB Debugger
- Git & GitHub for Version Control

RECOMMENDED READING

C Language:

- "Let Us C" – Yashavant Kanetkar
- "The C Programming Language" – Brian W. Kernighan & Dennis M. Ritchie
- "Programming in ANSI C" – E. Balagurusamy
- "C Traps and Pitfalls" – Andrew Koenig



WHY CHOOSE NXTSYNC?

- ☑ Industry-Relevant C Programming Curriculum
- ☑ Hands-on Real-World Software Projects
- ☑ Expert Mentorship & Career Coaching
- ☑ ISO-Certified Programming Training Program
- ☑ Flexible Learning With Live & Recorded Sessions

Start Your Digital Marketing Journey with NxtSync Today!



THANK YOU

