

CATIA SYLLABUS

Surface Design (ADVANCED 🔥)

Using Generative Shape Design (GSD)

- Wireframe Elements
- Surface Creation
- Surface Analysis
- Trim & Join
- Healing Surfaces
- Surface to Solid Conversion

Sheet Metal Design

- 
- A large, semi-transparent watermark of the PRERNAGATI & TECHNOLOGY logo is overlaid on the page. It includes a graduation cap icon on the left, the word "PRERNAGATI" in red and blue, and "& TECHNOLOGY" in white on a blue background.
- Wall
 - Bend
 - Flange
 - Corner Relief
 - Flat Pattern
 - Sheet Metal Drawings

C & C++ SYLLABUS

C Basics (FOUNDATION 🔥)

- Data Types
- Variables & Constants
- Keywords
- Input / Output (printf, scanf)
- Operators
 - Arithmetic
 - Relational
 - Logical
 - Assignment



Control Statements

- if, if-else
- Nested if
- switch-case
- Loops
 - for
 - while
 - do-while
- break & continue

C & C++ SYLLABUS

Functions in C

- Function Declaration & Definition
- Call by Value
- Call by Reference
- Recursion
- Scope of Variables

Arrays & Strings

- One-Dimensional Arrays
- Multi-Dimensional Arrays
- String Handling Functions
- Character Arrays

Pointers (VERY IMPORTANT 🔥)

- Pointer Basics
- Pointer & Arrays
- Pointer to Pointer
- Pointer with Functions
- Dynamic Memory Allocation
 - malloc
 - calloc
 - realloc

C & C++ SYLLABUS

Structures & Unions

- Structures
- Nested Structures
- Array of Structures
- Union
- Difference between Structure & Union

File Handling in C

- File Opening & Closing
- Reading & Writing Files
- File Modes
- Error Handling

Preprocessor & Macros

- #define
- #include
- Conditional Compilation
- Header Files

C & C++ SYLLABUS

Introduction to C++

- Difference between C & C++
- Object-Oriented Programming Concepts
- Applications of C++

C++ Basics

- Data Types
- Variables
- Namespaces
- Input / Output (cin, cout)
- Operators

Object-Oriented Programming

- Class & Object
- Access Specifiers
- Constructors & Destructors
- this Pointer

C & C++ SYLLABUS

OOPS Pillars (VERY IMPORTANT 🔥)

- Encapsulation
- Abstraction
- Inheritance
- Polymorphism

Advanced OOPS Concepts

- Function Overloading
- Operator Overloading
- Virtual Functions
- Runtime Polymorphism
- Abstract Classes
- Interfaces (using pure virtual functions)

C & C++ SYLLABUS

Templates & STL

- Function Templates
- Class Templates
- STL Components
 - Vector
 - List
 - Map
 - Set
 - Stack
 - Queue
- Iterators

A large, semi-transparent watermark of the PRERNAGATI & TECHNOLOGY logo is overlaid on the page. It includes a graduation cap icon and the text "PRERNAGATI" in large blue letters, with "& TECHNOLOGY" in smaller blue letters below it.

Exception Handling

- try
- catch
- throw
- Multiple Catch Blocks
- Custom Exceptions

C & C++ SYLLABUS

File Handling in C++

- File Streams
- Reading & Writing Files
- Binary Files

Memory Management

- new & delete
- Dynamic Memory
- Smart Pointers (Intro)

Data Structures (with C/C++)

- Arrays
- Linked List
- Stack
- Queue
- Trees
- Graphs
- Searching & Sorting Algorithms