

G.L. Bajaj Institute of Technology and Management, Greater Noida

Career Development Centre

Modules - Technical Training

Module 1 – Data Structures & Algorithms

Course Outcomes:

1. Implement arrays, strings, and their operations to solve computational problems.
2. Apply recursion techniques to solve problems more efficiently.
3. Understand searching and sorting algorithms and their complexity.
4. Design and implement hash-based data structures for efficient data retrieval.
5. Build and manipulate linked lists, stacks, and queues for solving real-world problems.

List of topics:

Sr. No.	Name of Topic	Industry Application	No. of Lectures
1	Advanced Recursion	Graph traversal, AI decision trees, game solving, optimization problems	6
2	Arrays	Data storage, matrix operations, real-time analytics, signal processing	5
3	String	Text processing, pattern recognition, encryption, search engines	5
4	Searching	Database queries, AI heuristics, network routing, file systems	4
5	Sorting	Data analysis, reporting, simulations, graphics rendering	4
6	Hashing	Caching, duplicate detection, fast lookup, recommendation systems	5
7	Linked List	Memory-efficient storage, undo systems, navigation structures	5
8	Stack	Parsing expressions, undo-redo operations, recursion simulation	4
9	Queue	Scheduling, buffering, stream processing, event handling	4