

# me META ENGINEERING

CODE. DESIGN. OPTIMIZE. INNOVATE.  
AND FUTURE-PROOF YOURSELF.



2-YEAR  
RIGOROUS  
PROGRAM



TARGET ICPC,  
PLACEMENTS  
& GATE



ONE FREE  
BATCH EVERY  
YEAR

A 2-YEAR TRANSFORMATIVE  
JOURNEY TO BECOME

# WORLD-CLASS ENGINEERS



### CODING INTERVIEWS

Master DSA, Algorithms and problem solving to crack top tech interviews.



### SYSTEM DESIGN INTERVIEWS

Learn Low-Level and High-Level System Design from the best in the world.



### CORE COMPUTER SCIENCE

In-depth learning of DBMS, Operating Systems, Networks, OOPS and foundational CS.



### AI & EMERGING TECHNOLOGIES

Build strong AI concepts and hands-on experience with modern tools.



### CORE ENGINEERING

Strengthen the fundamentals that make you a complete engineer.



### PROJECTS THAT MATTER

Build industry-grade projects and create a portfolio that sets you apart.



### LEARN FROM THE BEST

Mentorship & training  
by ex-employees of  
MAANG companies



World-class mentorship.  
Core insights.  
Unmatched guidance.

### PROGRAM HIGHLIGHTS

- ✓ Learn from industry leaders (ex-employees of Google, Microsoft, Amazon & More).
- ✓ Curriculum benchmarked with top universities of the world.
- ✓ Rigorous training through hands-on learning.
- ✓ Personalized mentorship & support
- ✓ Build resume that opens doors to global opportunities.
- ✓ Regular contests & performance analysis

### ELIGIBILITY



Only for students who have completed 1<sup>st</sup> year of B.Tech degree and are in 2<sup>nd</sup> year (3<sup>rd</sup> semester) in Aug-2026.



**3 STUDENTS**  
FROM EACH COLLEGE

HANDPICKED,  
HIGHLY MOTIVATED,  
FUTURE LEADERS.

“ We don't just teach.  
We transform students into engineers  
the world is waiting for. ”

THIS ISN'T JUST A PROGRAM.  
**THIS IS YOUR EDGE.**



# me META ENGINEERING



If you are entering your B.Tech 2<sup>nd</sup> year and are passionate enough to become a global engineering leader, this is your definitive launchpad



## MISSION

To prepare a select group of students to become world-class engineers and tech leaders.



## SELECTION

Form your team of 3 students and get a NOC letter from the Director of your college.

## ● WHY ONLY 3 STUDENTS FROM EACH COLLEGE? ●

We limit intake to three students to form a dedicated, competition-ready team for the ICPC. By selecting the best trio from your college, we ensure you have the perfect synergy to dominate the global stage together.

## WHAT WILL BE THE FOCUS AREAS FOR 2 YEARS

### OUR ELITE PREPARATION PORTFOLIO: A 4-FOLD JOURNEY

TARGETED MODULES FOR ELITE ENGINEERING STUDENTS

**GATE EXAM**

DOMINATE CORE CS FOR MASTERS & PSU RECRUITMENT

**ICPC COMPETITIVE PROGRAMMING**

UNIFY THE BEST FROM YOUR CAMPUS TO DOMINATE THE GLOBAL STAGE

**CODING INTERVIEWS**

MASTER DATA STRUCTURES & ALGORITHMS FOR TECH GIANTS

**SYSTEM DESIGN INTERVIEWS**

BUILD SCALABLE, HIGH-LEVEL ARCHITECTURES

## COMPREHENSIVE TRAINING FROM CAMPUS TO CAREER



**2026 BATCH**  
STARTING  
**16 Aug**

an initiative of



EMPOWERING GLOBAL  
TECH TALENT SINCE 2016



# 2-YEAR SYLLABUS

A Comprehensive Journey to Master DSA, System Design, CS Concepts, Competitive Coding, **Gen AI & Real-World Projects**



## 1. CORE PROBLEM-SOLVING USING DATA STRUCTURE AND ALGORITHMS

- Time & Space Complexity
- Arrays, Strings, Linked Lists
- Stacks, Queues, Deques
- Hashing, Sets, Maps
- Trees, Binary Trees, BST, Tries
- Heaps, Priority Queues
- Graphs (BFS, DFS, Shortest Path, Topological Sort, MST, DSU)
- Sorting, Searching, Greedy
- Recursion, Backtracking
- Dynamic Programming (1D, 2D, Bitmask)
- Bit Manipulation
- Advanced DSA & Problem Patterns

```
def dijkstra(graph, src):
    import heapq
    dist = {node: float('inf') for node in graph}
    dist[src] = 0
    pq = [(0, src)]
    while pq:
        d, node = heapq.heappop(pq)
        if d > dist[node]:
            continue
        for nei, w in graph[node]:
            if dist[nei] > d + w:
                dist[nei] = d + w
                heapq.heappush(pq, (dist[nei], nei))
    return dist
```



## 2. OOPS CONCEPTS AND DESIGN OF LOW-LEVEL SYSTEMS

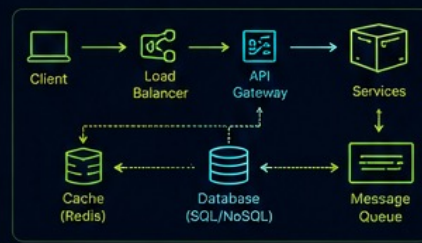
- OOP Principles (Encapsulation, Abstraction, Inheritance, Polymorphism)
- Classes, Objects, Interfaces, Abstract Classes
- SOLID Principles
- Design Patterns (Creational, Structural, Behavioral)
- UML Diagrams (Class, Sequence, Activity, State)
- Object-Oriented Design
- Low-Level System Design (e.g., Parking Lot, Tic-Tac-Toe, Library Management, ATM, Snake Game)

```
class ParkingLot:
    def __init__(self, slots):
        self.slots = [None] * slots
    def park(self, vehicle):
        for i in range(len(self.slots)):
            if self.slots[i] is None:
                self.slots[i] = vehicle
                return i
        return -1
    def leave(self, slot):
        self.slots[slot] = None
```



## 3. BUILDING LARGE-SCALE SYSTEMS FOR HLD INTERVIEWS

- System Design Fundamentals
- Requirements Clarification & Estimation
- Capacity Estimation & Scaling
- High-Level Design (HLD)
- Low-Level Design (LLD) Deep Dive
- Database Design (SQL & NoSQL)
- Caching (Redis, Memcached)
- Message Queues, Event-Driven Systems
- Load Balancing, Sharding, Replication
- API Design, Rate Limiting
- Scalability, Availability, Consistency
- Case Studies: Instagram, WhatsApp, YouTube, Uber, Twitter



## 4. CORE COMPUTER SCIENCE CONCEPTS IN DETAIL FOR GATE EXAM

- Discrete Mathematics (Logic, Sets, Relations, Graph Theory, Combinatorics, Pigeonhole Principle)
- Theory of Computation (DFA, NFA, PDA, CFG, Turing Machines)
- Computer Organization (Digital Logic, CPU, Memory Hierarchy, Instruction Set)
- Operating Systems (Processes, Threads, CPU Scheduling, Deadlocks, Memory Management, File Systems)
- Computer Networks (OSI Model, TCP/IP, Routing, DNS, HTTP, Security)
- Database Management Systems (ER Model, SQL, Normalization, Transactions, Concurrency)
- Compiler Design (Lexical Analysis, Parsing, Syntax Trees)
- Data Structures & Algorithms (Depth for GATE)
- Previous Year GATE Questions & Mock Tests

Example: Context-Free Grammar

```
E → E + T | T
T → T * F | F
F → ( E ) | id
```



## 5. COMPETITIVE CODING AND ADVANCE PROBLEM-SOLVING

- Advanced Data Structures (Segment Tree, Fenwick Tree, Trie, Suffix Array, Sparse Table)
- Advanced Algorithms (Divide & Conquer, Meet-in-the-Middle, Inclusion-Exclusion, CRT, FFT)
- Graph Advanced (SCC, Bridges, Articulation Points, DP on Trees, Centroid Decomposition)
- String Algorithms (KMP, Z-Algorithm, Hashing, Aho-Corasick)
- Number Theory (GCD, Modulo, Primes, Fermat, Euler Totient)
- Geometry, Computational Geometry
- Bitmasking, Game Theory
- Problem-Solving Strategies & Heuristics
- Regular Contests & Practice (Codeforces, AtCoder, CodeChef, LeetCode Contests)

```
int nCr(int n, int r) {
    if (r > n - r) r = n - r;
    long long res = 1;
    for (int i = 1; i <= r; ++i)
        res = res * (n - r + i) / i;
    return (int)res;
}
```



## 6. GEN AI FUNDAMENTALS AND APPLICATIONS

- Introduction to Generative AI & LLMs
- Prompt Engineering & Best Practices
- RAG (Retrieval Augmented Generation)
- LangChain / Llamaindex
- Vector Databases (Chroma, Pinecone, FAISS)
- Fine-tuning & Embeddings
- Building AI Agents & Tools
- Use Cases: Chatbots, Summarization, Code Generation, Data Extraction
- OpenAI API, Hugging Face Ecosystem
- Responsible AI & Safety

```
from langchain.chat_models import ChatOpenAI
from langchain.schema import HumanMessage

llm = ChatOpenAI(model="gpt-4o")
messages = [HumanMessage(content="Explain binary search with code.")]
response = llm(messages)
print(response.content)
```

## 7. REAL-WORLD PROJECTS



### SYSTEMS & APPLICATIONS

- URL Shortener
- Social Media Platform
- E-commerce Website
- Real-time Chat Application
- File Storage System
- Notification Service

### DATA & ANALYTICS

- Data Pipeline
- ETL Processing System
- Dashboard with Analytics
- Log Analyzer
- Recommendation Engine

### AI & GEN IN PROJECTS

- AI Chatbot with RAG
- Document Q&A System
- Code Assistant
- Resume Screener
- AI Study Companion

### TOOLS & PLATFORMS

- Notes App
- Task Manager
- Blog Platform
- DevOps CI/CD Pipeline
- API Gateway

### What you build:

- ✓ End-to-end development
- ✓ Scalable architecture
- ✓ Clean code & best practices
- ✓ Deployment & DevOps
- ✓ Real-world impact



### MASTER DSA

Solve any problem with confidence



### CRACK INTERVIEWS

From coding rounds to system design



### EXCEL IN EXAMS

GATE & other CS competitive exams



### BUILD THE FUTURE

AI-powered apps & real-world solutions



### ENDLESS GROWTH

Stay ahead with skills that matter

## 2-YEAR OUTCOME ROADMAP FROM ASPIRING STUDENT → ELITE ENGINEER

A structured journey of transformation, skill-building and real-world readiness.



2-YEAR RIGOROUS PROGRAM



TARGET ICPC, PLACEMENTS & GATE



ONE FREE BATCH EVERY YEAR



### FINAL TRANSFORMATION

BY THE END OF 2 YEARS, STUDENTS WILL BE ABLE TO:



Solve advanced DSA and competitive programming problems



Build scalable software systems



Crack coding and system design interviews



Develop real-world AI-enabled applications



Compete in ICPC and other coding competitions



Strengthen GATE and core CS preparation



Build a strong engineering portfolio and resume



Think like professional software engineers

an initiative of



EMPOWERING GLOBAL TECH TALENT SINCE 2016

“ This is not short-term coaching. This is a structured engineering excellence journey. ”

Handpicked. Highly motivated. Future leaders.


ONLY 3 STUDENTS FROM EACH COLLEGE



# RITAMBHARA TECHNOLOGIES

## RESULTS THAT SPEAK



  
**8000+**  
Students  
Trained

  
**100%**  
Placed  
Worldwide

  
**200+**  
in MAANG  
Companies

  
**10+**  
Yrs of Excellence  
in Training




EMPOWERING GLOBAL  
TECH TALENT SINCE 2016

## WHAT WE DO?

 **Competitive Coding**

 **System Design**

 **GATE Exam Preparation**

 **IOI Preparation**

Ritambhara's curriculum demystifies complex computational concepts, transforming career trajectories and enabling engineers with over a decade of experience to successfully pivot into elite leadership and principal-level roles.

## OFFERINGS HIGH-QUALITY TRAININGS AT EVERY LEVEL



**K12**

**ioi**



**College**

- ✓ icpc
- ✓ GATE Exam
- ✓ Placement Preparations



**Corporate**


- ✓ Coding Interview
- ✓ System Design
- ✓ Agentic AI

**JOIN US**

**START YOUR**  
**me JOURNEY TODAY!**

Empower your students to compete with the best minds in the world.

meaningful education - GUARANTEED!

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