भारतीय सांकेतिक विज्ञान సంస్థ హైదరాబాద్
भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Computational Engineering Placement Brochure 2025-26

What's inside?

About IIT Hyderabad

The Indian Institute of Technology Hyderabad (IITH) is a premier institute known for its strong emphasis on research, innovation, and interdisciplinary learning. Offering a wide range of undergraduate, postgraduate, and doctoral programs, IITH empowers students through a flexible academic structure, cutting-edge research, and strong industry connections.

The institute fosters entrepreneurship through specialized programs and close collaboration with industry leaders. A unique partnership with Japanese institutions has further enriched IITH's academic and infrastructural development, contributing to its global outlook.

IITH provides a vibrant ecosystem that encourages intellectual growth, creativity, and socially relevant innovation. Ranked 8th in India by the National Institutional Ranking Framework (NIRF), the institute continues to inspire future leaders in science, technology, and beyond.

Vision

IITH will be the cradle for inventions and innovations. It will advance knowledge and scholarship to students in science, technology and liberal arts, and equip them to handle the challenges of the nation and the world in the 21st century.

Mission

To be recognized as ideators and leaders in higher education and research, and to develop human power with creativity, technology and passion for the betterment of India and humankind

Core Values

- Innovation and Invention
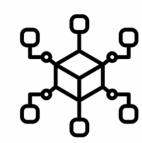- Intellectual Growth
- Quality Education
- Inspiration and Leadership
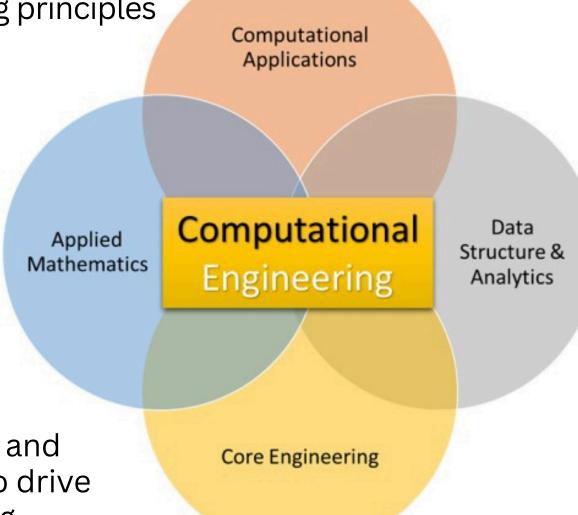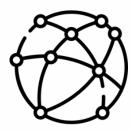- Sustainability and Relevance

Program Overview

The Department of Computational Engineering at IIT Hyderabad, launched in 2021, is India's first undergraduate program dedicated to bridging the gap between traditional engineering education and the computational demands of modern industry. With the rise of Industry 4.0 and increasing reliance on digital simulations, AI, and automation, the program is designed to develop engineers fluent in both core engineering principles and advanced computational tools.

This interdisciplinary BTech program is built on four foundational pillars: Applied Mathematics, Core Engineering, Data Structures & Analytics, and Computational Applications. Students undergo rigorous training in scientific computing, numerical methods, machine learning, optimization, and hardware description languages. The curriculum is structured in a T-shape, offering strong domain breadth while enabling specialization in computational techniques, ensuring that students can develop, simulate, and analyze engineering systems effectively.

The program emphasizes real-world problem solving, digital twin creation, and systems-level modeling. Graduates are equipped with the skills required to drive innovation in sectors such as aerospace, energy, healthcare, manufacturing, finance, and data science. With its unique blend of interdisciplinary education and practical relevance, the Computational Engineering program at IITH prepares students for leadership roles in academia, research, and industry

Computational Applications

Applied Mathematics

Computational Engineering

Data Structure & Analytics

Core Engineering

Message from HOD

Curriculum

Computer Science & Programming

- Introduction to Programming
- Data Structures & Applications
- Operating Systems
- Parallel & Concurrent Programming

Machine Learning & Computational Science

- Foundations of Machine Learning
- Deep Learning
- Fundamentals of Scientific Computing
- Computer-Aided Numerical Methods
- Optimization Techniques

Hardware & Systems

- Digital Circuits
- Introduction to Hardware Description Languages

Curriculum

Core Engineering

- Engineering Drawing
- Engineering Mechanics
- Solid Mechanics
- Fluid Mechanics
- Heat and Mass Transfer
- Modeling and Simulation

Biotechnology & Bioengineering

- Introduction to Life Sciences
- Bioengineering
- Molecular and Cellular Biology
- Basic Bioinformatics
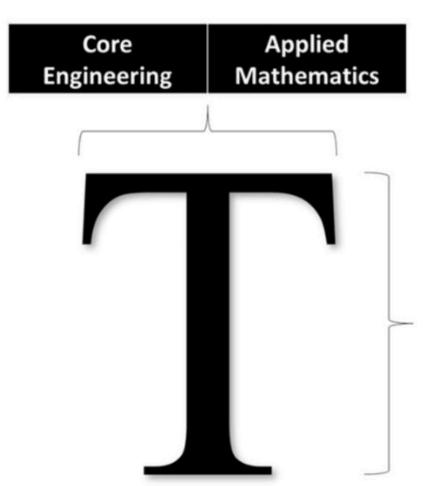- Big Data Biology and Biological Databases

Materials Science

- Computational Methods in Materials Science
- Electronic Structure and Atomistic Modeling
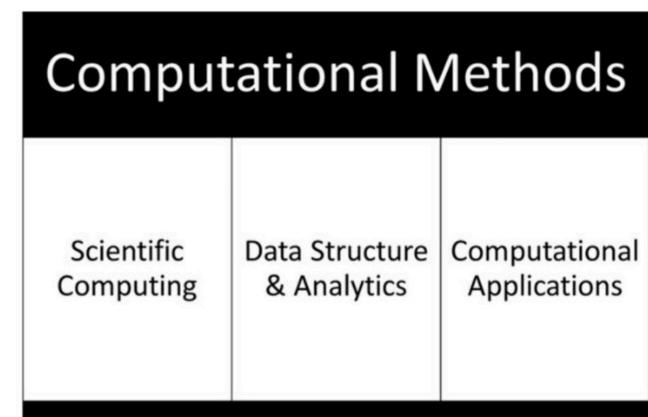- Materials Thermodynamics and Kinetics

Curriculum

Mathematics

- Calculus
- Linear Algebra
- Differential Equations
- Probability
- Transform Techniques
- Complex Variables
- Statistics

Core Engineering	Applied Mathematics

Computational Methods		
Scientific Computing	Data Structure & Analytics	Computational Applications

Admission Statistics

Admission to B.Tech in Computational Engineering is through JEE Advanced.

15 **B.Tech Batch Strength**

Below are the recent cutoff ranks and batch size details:
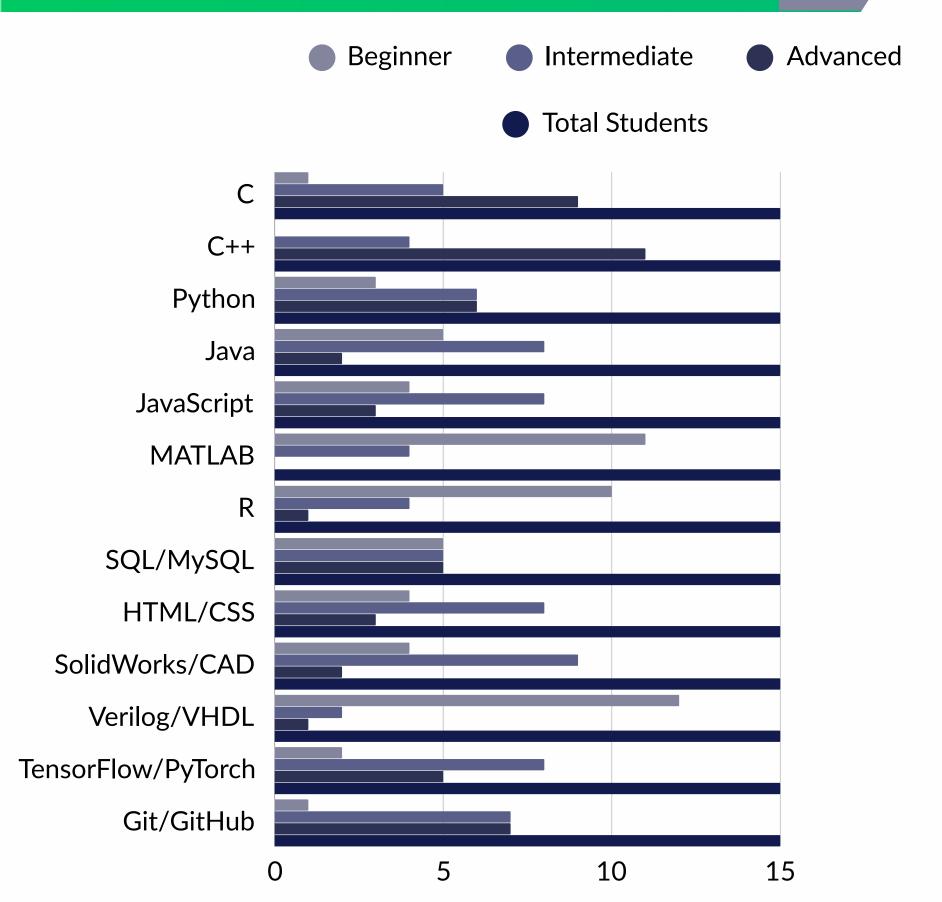
Year	Opening Rank	Closing Rank	Batch Strength
2021	1171	1383	10
2022	**1212**	**1633**	**15 (Current Placement Batch)**
2023	1304	1884	25
2024	1046	1790	25

Rising Interest

The steady rise in closing ranks and increasing batch strength reflect the growing demand and recognition of the Computational Engineering program at IIT Hyderabad among top JEE Advanced candidates.

Skills

Legend: Beginner, Intermediate, Advanced, Total Students

Chart categories (top to bottom): C, C++, Python, Java, JavaScript, MATLAB, R, SQL/MySQL, HTML/CSS, SolidWorks/CAD, Verilog/VHDL, TensorFlow/PyTorch, Git/GitHub

X-axis: 0, 5, 10, 15

Exposure to Modern Technologies

Students have demonstrated proficiency in a range of contemporary tools and languages, including Microsoft Azure, Angular, Protocol Buffers (Proto), Julia, Low-Latency C, and Kotlin. This reflects their ability to work with technologies beyond the standard academic curriculum

Real-World Software Development Experience

With strong fluency in software development, students are capable of designing and building practical applications. Their skills have been further honed through internships, providing valuable hands-on experience in solving real-world problems

Projects

Real-World Internship Projects

- TPU Utilization Metric – Metric extraction is highly relevant in industry ML workloads and performance optimization.
- Jira Issue Analytics with LLM – Real-world use case in software project management and trend analysis.
- RAG Model for Software Testing – Unit testing automation using LLMs is actively explored in the industry.
- Stockpile Report Generator – Automating mining data into reports is a common industrial analytics task.
- Slope Stability Module – Directly applicable in civil/geotechnical engineering firms.
- Toe-Crest Highwall Generation – Specialized but valuable in the mining and geological industry.
- Fine-Tuned T5 Model for API Endpoints – Useful for automating developer workflows in backend teams.
- Chatbot for Customer Queries – Widely used in customer service and enterprise support.
- Peripheral Modeling and Test Automation – Relevant to hardware/embedded systems companies.
- Frontend Labels for CRUD Operations – Web app frontend is foundational in product development.
- Material Detection using ML – Industrial vision and automation systems rely on this kind of ML.
- PIR Motion Signal Classification – Applied in smart home, security, and embedded sensing industries.

Systems & Applications

- System Call Implementation and Demand Paging in xv6: Added custom system calls and copy-on-write demand paging features to the xv6 kernel.
- Speech-to-Text Web Application: Built a web app for real-time speech-to-text conversion using machine learning techniques.
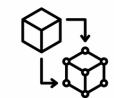
Projects

Parallel and High-Performance Computing

- Parallel N-Body Simulation (Barnes-Hut): Implemented a parallel algorithm to optimize gravitational simulations using spatial decomposition.
- Delta-Stepping for the Shortest Path: Parallelized single-source shortest path computation for large graphs using OpenMP.
- Parallelization of Finite Element Method (FEM): Optimized global stiffness matrix assembly using Pthreads and OpenMP.
- Parallel Convex Hull Computation: Leveraged Pthreads and OpenMP for efficient parallel convex hull computation.
- Parallel Mesoscale Fluid Simulation: Simulated mesoscale fluid dynamics using parallel computing techniques.

Computational Science & Simulation

- Dendritic Growth via Phase-Field Method: Simulated dendritic solidification with differential analysis of interface points.
- Epidemic Spread Modeling: Developed a scalable and parallel model using mathematical and computational modeling.
- Image Segmentation using Cahn-Hilliard Equation: Developed models for advanced image processing using phase-separation dynamics.

Machine Learning & Deep Learning

- Audio Classification using RNN, CNN, Transformers: Built deep learning models to classify audio inputs with high accuracy.
- Drug Recommendation using Gene Expression and Autoencoders: Built a system to recommend medications based on gene expression data using deep learning.
- Sensor-Based Human Activity Classification: Achieved 98% accuracy using CNN-LSTM models for activity recognition from sensor data.
- Spoken Digit Recognition using DTW: Implemented Dynamic Time Warping to recognize spoken digits effectively.

Why Recruit Us?

Placement & Internship Highlights

- The students of our program at IIT Hyderabad are distinguished by their strong academic foundation, hands-on technical proficiency, and a research-driven mindset. Shaped through a rigorous, interdisciplinary curriculum and real-world exposure, they are ready to contribute from day one.

- **100% internship rate –** Every eligible student secured an internship. Internship roles spanned Machine Learning, Software Development, Research, and Systems Engineering.

- Last Year Placement Success:

  1. 8 out of 10 students placed with top-tier offers
  2. **Median Package: ₹41.83 LPA**
  3. **Average Package: ₹35.23 LPA**
  4. These numbers reflect both the caliber and industry-readiness of our students.

- Trusted by Top Recruiters:

  Internship hosts included Google, Adobe, Siemens, Amazon, Atlassian, D.E. Shaw, Bosch, Silicon Labs, American Express, Nikko Co. Ltd Japan, Crystalball.ai, SAGRI Co. Ltd, and GSoC.
  Last year's PPOs and placements were offered by KLA, Accenture Japan, Thomson Reuters, Oracle, Google, and Accelequant.

What Recruiters Appreciate

- Strong programming and system design skills
- Expertise in AI, Machine Learning, and Computational Engineering
- Experience with cloud and automation technologies
- Effective communication and leadership in projects

Contact Us

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