# MANIPAL INSTITUTE OF TECHNOLOGY BENGALURU [MIT] [MIT- BLR]

**The Garden City of India, Bengaluru, is now home to a new engineering institution – "MIT Bengaluru" –the latest constituent unit of Manipal Academy of Higher Education (MAHE). MAHE is proud to open its doors in the bustling cosmopolitan IT hub of Bengaluru by establishing its new engineering campus: MIT Bengaluru.**

## About the Institute

Manipal Institute of Technology (MIT) Bengaluru is offering B. Tech programs starting from 2021 and three M. Tech programs starting from 2025, with approval from the All-India Council of Technical Education (AICTE), MHRD, Government of India.

The approved B. Tech programs are:

- B.Tech. CSE*
- B.Tech. Electronics & Communication Engineering
- B.Tech. Electronics & Computer Engineering
- B.Tech. Electronics Engineering (VLSI Design and Technology)
- B. Tech. Robotics and Artificial Intelligence

*Note: There will be a provision to choose the following specialisation from 5th semester of CSE :

1. Artificial Intelligence & Machine Learning,
2. Cybersecurity
3. Data Science
4. Quantum Computing
5. Gaming & Digital Twinning, and
6. Robotics & Artificial Intelligence. Allotment of specialisation will be based on the academic performance [CGPA].

The approved M. Tech programs are:

- M. Tech. Computer Science and Engineering
- M. Tech. Computer Science and Engineering (Data Sciences)
- M. Tech. Electronics Engineering (VLSI Design)

MAHE is recognized as a deemed-to-be university since 1993 and has been accorded the status of Institute of Eminence (IoE) by MHRD, Government of India. Manipal Academy of Higher Education (MAHE), Manipal is proud to have achieved accreditation of A++ grade, the highest of its kind by the National Assessment and Accreditation Council (NAAC). Admission to MIT Bengaluru is based on a computer-based online entrance test, MET, conducted by the MAHE.

## Advantage MIT

- Multicultural Campus with student representation from every state of India
- Curriculum designed with participation of all stakeholders.
- Flexible curriculum with opportunity for B.Tech. Honours and Minor Specialization
- Large basket of Open Electives to cater the wide interest of students
- Major student projects to address experiential learning
- Emphasizes industry connect by organizing technical talks from industry experts for the benefit of students and faculties.
- Mentor-Mentee session: Every faculty mentor is assigned 15 to 20 students as a mentee for personal interaction to understand their difficulties both in academics and other areas and to address them at the earliest.
- Bengaluru, being the hub of industry, collaborating with industry to provide advanced practical training to students will be an added advantage.
- The opportunity for internship and placement is immense in Bengaluru and, considering this, MIT Bengaluru is already making tie-ups through MoUs with reputed industries so that students will get into the industry of their choice for internship and placement.
- Prospect to work on funded research projects and support for student publication.

## Recognitions

- Approved by All India Council for Technical Education (AICTE)

## International Partner Universities and Industries

- University of Florida
- Nottingham Trent University
- Network n+i–engineering institutes
- University of Agder, Grimstad, Norway
- IBM India Pvt. Ltd
- SAP University Alliances
- Kaspersky
- Honeywell Technology Solutions Lab Pvt. Ltd
- CGI Information Systems and Management Consulatants Pvt. Ltd.
- Altair Engineering India Pvt. Ltd (Altair), Bengaluru
- Kumudha Health Tech Pvt. Ltd
- Digitoad Technologies
- RC Labs
- Virginia Commonwealth University, USA

## Research

MIT Bengaluru encourages research, innovation, research publication, patent filing and technology commercialization at undergraduate and postgraduate level. MIT has collaborative and interdisciplinary research programs in association with premier research laboratories and has secured research grants from government (both state and central), industries and international funding agencies. The faculty members are working on multiple research projects supported by various government institutes and industries. Faculties are also collaborating with various institutes in India (Like IISc, IITs, NITs and other institutions) and foreign institutions.

### Research Output

| | |
|---|---|
| No of PhD Students | 154 |
| No of PhD guides | 72 |
| No of Research grant received | 11 |
| No of Journal Publications | 209 |
| No of granted patent | 07 |

# B.Tech. in Computer Science and Engineering

**Duration**
4 Years (8 Semesters)

**Eligibility Criteria & Admission Process**
Refer **Section 2**

**Course Fees, Hostel Fees, Refund Rules**
Refer **Section 3**

**Last date to apply and Commencement of Classes:** Refer **https://manipal.edu/datestoremember**

## Program Description

Computer Science & Engineering (CSE) involves the science and technology to design and develop systems as well as applications. Emphasis is given to apply mathematics and principles of computing to solve engineering problems.

## Focus

The curriculum offers subjects such as big data analytics, machine learning, cryptography, artificial intelligence, internet of things, and high performance computing to keep them in sync with advances in technology and prepare them for lifelong learning. The curriculum is designed to provide flexibility for students to opt for minor specialization offered by the department and online courses by reputed international universities. CSE graduates cater to the needs of most industries, including software, healthcare, communications, manufacturing, automobiles.

## Career Prospects

Students will be recruited by reputed industries like Microsoft, Amazon, SAPLabs, Goldman Sachs, Morgan Stanley, Cisco, Intel, Deloitte, Oracle, Samsung, HPE, etc. In addition, they can pursue higher education and research at premium national or international universities.

**Provision to choose the specialisation from 5th semester of CSE**

### 1. Artificial Intelligence & Machine Learning (AIML)

AIML specialisation provides the budding engineers with a spectacular array of courses dedicated to frontiers in the field of AIML with a foundation of Computer Science & Engineering.

The curriculum focuses on foundations of computational mathematics, core areas of computer science, along with the latest advancements in artificial intelligence. Core courses in computer science help students to drive them through the ever-changing IT requirements.

### 2. Cybersecurity

Cyber Security specialisation is aimed at producing the much-needed highly skilled computer science security professionals who can safeguard information, systems, networks, communications, and storage from ever-evolving security threats. The prime objective of the program is to create professionals trained in both computer science and cyber security.

The curriculum focuses on concepts in Cryptography, Governance, and Compliance. Protect data, information, and infrastructure from cyber-attacks with proper risk management and mitigation. To develop cyber security strategies and policies and analyse the nature of attacks through cyber/computer forensics software/tools.

### 3. Data Science

Data Science is a journey towards mastering CSE in the field of data science applying machine learning techniques. It is an intensive skill-oriented program with enough practical training for building business models for analytics. With analysis and statistical approaches, data science is one of the fastest-growing career opportunities in the country. It is designed to give exposure to the variety of applications that can be built using techniques covered under this program.

This program will help the students to understand and master CSE and make them specialists in the field of data science – which is one of the emerging fields of computer science and the highest paid in the market. The interdisciplinary field of data science uses key skills from a wide range of fields including machine learning, statistics, visualization, etc. It enables to identification of meaning and appropriate information from huge volumes of data to make informed decisions in technology, science, business, etc.

### 4. Gaming & Digital Twinning

A specialization in Gaming and Digital Twinning is an innovative program designed to equip students with the skills and knowledge to excel in the rapidly evolving fields of interactive technology and virtual modelling. This interdisciplinary course combines core computer science principles with specialized training in Gaming strategies and digital Twinning technologies, preparing graduates for dynamic roles in various industries.

The curriculum focuses on concepts in Gaming Strategies, Digital Twinning Technology, and Virtual and Augmented Reality. Students explore areas like artificial intelligence, machine learning, IoT, and human-computer interaction.

### 5. Quantum Computing

Quantum Computing specialisation focuses on emerging technologies like AI, machine learning, quantum computing, and computer vision, offering specialized learning pathways and hands-on experience through labs, projects, and industry internships. It integrates AI with quantum computing, fostering interdisciplinary expertise and real-world problem-solving. Students benefit from startup incubation centers, global collaborations, and industry partnerships, gaining access to mentorship, funding, and international exposure. Personalized electives embedded global certifications, and a dedicated career support cell ensured enhanced employability and strong placement opportunities. This program equips students with cutting-edge skills and practical experience to excel in AI and quantum-driven industries.

### 6. Robotics & Artificial Intelligence

Robotics and AI focus on integrating mechanical systems with advanced AI for autonomous, intelligent solutions. This interdisciplinary field combines robotics, computer science, AI, and mechanical engineering, offering hands-on experience with humanoid robots, autonomous vehicles, drones, and industrial automation. Students access specialized labs with robotic arms and sensors. With a curriculum emphasizing embedded systems, IoT, and control systems, graduates are prepared for careers in robotics, smart manufacturing, defense, and healthcare.

## B.Tech. in Electronics and Communication Engineering

**Duration**
4 Years (8 Semesters)

**Eligibility Criteria & Admission Process**
Refer **Section 2**

**Course Fees, Hostel Fees, Refund Rules**
Refer **Section 3**

**Last date to apply and Commencement of Classes:** Refer **https://manipal.edu/datestoremember**

### Program Description

B.Tech. in Electronics and Communication Engineering (ECE) aims at providing a strong foundation for the students aspiring a career in electronics and communication industries as well as industries which apply these technologies.

### Focus

By imparting curriculum emphasizing on subjects such as electronic circuit design, signal processing, communication engineering, digital system design, and computational intelligence, students will be able to design and develop technologies related to these areas.

### Career Prospects

Electronics and Communication Engineering graduates are one of the most sought after, by the industries due to our insatiable desire for smaller, more power efficient, and smarter multifunctional gadgets.

Since electronics is the platform on which modern day artificial intelligence is running, electronics and communication engineers with good knowledge of artificial intelligence are in high demand.

## B.Tech. Electronics Engineering (VLSI Design and Technology)

**Duration**
4 Years (8 Semesters)

**Eligibility Criteria & Admission Process**
Refer **Section 2**

**Course Fees, Hostel Fees, Refund Rules**
Refer **Section 3**

**Last date to apply and Commencement of Classes:** Refer **https://manipal.edu/datestoremember**

### Program Description

The modernized era of electronic systems has led to the sophisticated design of semiconductor chips with reduced size and efficient components. The production and fabrication of such semiconductor chips have been a bottleneck for India due to a lack of trained workforce. The Government of India established India Semiconductor Mission (ISM) to close this gap and facilitate India's ascent to prominence as a global electronics design and manufacturing center. In alignment with India's emphasis on the "Make in India" and the growth of the semiconductor sector, this BTech course serves as a valuable resource for students aspiring to excel in electronics hardware and software technologies. The program is in line with the India Semiconductor Mission (ISM), an initiative by the Government of India. This four-year BTech program in Electronics Engineering (VLSI Design and Technology) is intended to train engineering graduates in microelectronics devices, VLSI circuits, and systems, which is essential for the electronics chip design and manufacturing industry. In addition to giving students practical experience with top EDA (Electronic Design and Automation) tools, the course aims to provide students with a thorough understanding of semiconductor devices, VLSI circuit design and verification, FPGA design, and the fabrication process.

### Focus

The BTech in Electronics Engineering (VLSI Design and Technology) program prepares engineers to meet the semiconductor industry's needs. The program emphasizes the critical aspects of software and hardware design and development for VLSI applications. This course emphasizes VLSI system design, verification, device modelling, testing and diagnosis of VLSI circuits, semiconductor process technology, VLSI signal processing, analog and mixed signal IC design, along with fundaments of semiconductor devices, FPGA design, fabrication, MEMS, and NEMS. The program aligns with India's Semiconductor mission to fill the lack of trained workforce in India's semiconductor industry. The graduates will develop an in-depth understanding of semiconductor devices, VLSI circuit design and verification, FPGA design, and fabrication process, along with hands-on experience with leading EDA (Electronic Design & Automation) tools.

### Career Prospects

Graduates with a B.Tech in Electronics Engineering (VLSI design and technology) enjoy a wide range of career opportunities. They are sought after in both core semiconductor and software industries. The extensive career options encompass various domains, such as VLSI front-end and back-end design, fabrication, embedded systems, analog IC and mixed-signal IC design, VLSI testing, software engineering, Embedded systems, and more. Graduates may pursue higher studies in varied fields but not limited to VLSI, Nano Technology, Embedded Systems, etc.

## B. Tech. Robotics and Artificial Intelligence

**Duration**
4 Years (8 Semesters)

**Eligibility Criteria & Admission Process**
Refer **Section 2**

**Course Fees, Hostel Fees, Refund Rules**
Refer **Section 3**

**Last date to apply and Commencement of Classes:** Refer **https://manipal.edu/datestoremember**

### Program Description

The Robotics and Artificial Intelligence (AI) course is designed to provide students with a comprehensive understanding of the fundamental principles, technologies, and applications of robotics and AI systems. This interdisciplinary program combines knowledge from mechanical engineering, computer science, electrical engineering, and cognitive science, preparing students to tackle complex problems in automation, robotics, and intelligent systems.

Throughout the course, students will explore topics such as robot kinematics, dynamics, control systems, machine learning, computer vision, natural language processing, and AI algorithms. The curriculum is designed to give students both theoretical knowledge and practical experience, equipping them to design, build, and program robots, as well as develop AI systems capable of autonomous decision-making.

### Focus

The course also focuses on Robotics fundamentals, artificial Intelligence, Control systems, Computer vision and human computer Interaction and provide hands-on learning, with opportunities for students to work on real-world projects and engage in robotics competitions. Students will use advanced simulation tools, robotic platforms, and AI development environments to gain practical experience in programming, testing, and deploying intelligent robotic systems.

### Career Prospects

Engineering (VLSI design and technology) enjoy a wide range of career opportunities. They are sought after in both core Hardware and software industries. Extensive career options encompass various domains, such as Robotics, Autonomous systems design, Embedded systems, and more. By the end of the course, graduates will be well-equipped to enter industries such as autonomous vehicles, healthcare robotics, industrial automation, artificial intelligence applications, and more. Graduates may pursue higher studies in varied fields but not limited to Robotics and Artificial Intelligence.

## M. Tech. Computer Science and Engineering

**Duration**
2 Years (4 Semesters)

**Eligibility Criteria & Admission Process**
Refer **Section 2**

**Course Fees, Hostel Fees, Refund Rules**
Refer **Section 3**

**Last date to apply and Commencement of Classes:** Refer **https://manipal.edu/datestoremember**

### Program Description

M. Tech in Computer Science and Engineering (CSE) offered by the Computer Science and Engineering Department provides a platform for the graduate students to strengthen their foundations in Computer Science and gather a diversified exposure to the latest know-how in technology. The two-year full-time post-graduate program is learner-centric, industry-oriented, and research-driven. Thus, providing a great educational choice for engineers who want to upskill for a career boost in industry or step ahead for a career in research.

### Focus

The curriculum emphasizes core courses in Computer Science along with advanced concepts in Computer Networks, Data Structures and Algorithms, Database Systems, Machine Learning, and High-Performance Computing Systems.

### Career Prospects

The focus is on imparting ground knowledge in the course as well as teaching how to apply different Computational and Stochastic methods in a real-world scenario. Equipped with a course dedicated to Research Methodology and Technical Communication, students can delve into the world of finding solutions to real-world problems and get a hold on writing research articles. The Computing Lab facility is made available for students to implement computational solutions. The curriculum also caters to emerging technologies like Data Science, Computer Vision, and Image Processing, Natural Language Processing, Web services, Deep Learning, and Quantum Computing. Thus, the students get exposure to varied electives to select from and explore deeper in their area of interest.

## M. Tech Computer Science and Engineering (Data Sciences)

**Duration**
2 Years (4 Semesters)

**Eligibility Criteria & Admission Process**
Refer **Section 2**

**Course Fees, Hostel Fees, Refund Rules**
Refer **Section 3**

**Last date to apply and Commencement of Classes:** Refer **https://manipal.edu/datestoremember**

### Program Description

The Master of Technology (M.Tech.) in Computer Science and Engineering with a specialization in Data Science is a postgraduate program designed to equip students with advanced knowledge and skills in data analysis, machine learning, and big data technologies. This interdisciplinary course integrates core computer science principles with specialized data science techniques, preparing graduates to tackle complex data-driven challenges across various industries.

### Focus

The curriculum focuses on advanced areas like machine learning, deep learning, big data technologies, data mining, and statistical analysis. It emphasizes predictive analytics, data visualization, cloud computing, and cutting-edge fields like NLP, computer vision, and reinforcement learning.

### Career Prospects

Graduates are well-positioned for roles including Data Scientist, Data Analyst, Machine Learning Engineer, Business Intelligence Analyst, and Data Engineer. The program's comprehensive curriculum ensures that alumni are equipped to meet the growing demand for data science professionals in various industries.

## M. Tech. Electronics Engineering (VLSI Design)

**Duration**
2 Years (4 Semesters)

**Eligibility Criteria & Admission Process**
Refer **Section 2**

**Course Fees, Hostel Fees, Refund Rules**
Refer **Section 3**

**Last date to apply and Commencement of Classes:** Refer **https://manipal.edu/datestoremember**

### Program Description

This program is aligned with the India Semiconductor Mission (ISM), a key government initiative. The two-year MTech course in Electronics Engineering (VLSI Design) is designed to equip graduates with the necessary expertise in microelectronics devices, VLSI circuits, and systems—skills that are vital to the electronics chip design and manufacturing sector. Beyond hands-on experience with industry-leading Electronic Design and Automation (EDA) tools, the course provides in-depth knowledge of semiconductor devices, VLSI circuit design and verification, FPGA design, and the chip fabrication process.

### Focus

The MTech in Electronics Engineering (VLSI Design) program prepares engineers to meet the semiconductor industry's needs. The program emphasizes the critical aspects of software and hardware design and development for VLSI applications. This course emphasizes VLSI system design, verification, device modeling, testing and diagnosis of VLSI circuits, semiconductor process technology, VLSI signal processing, analog and mixed signal IC design, along with fundaments of semiconductor devices, FPGA design, fabrication, MEMS, and NEMS. The program aligns with India's Semiconductor mission to fill the lack of trained workforce in India's semiconductor industry.

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