M.Tech Admissions Brochure

2-Year and 3-Year programs
Session: August 2025

भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Department of Electrical Engineering
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1. Department overview:

The Department of Electrical Engineering is the largest department at IIT Hyderabad that has **485 students including 235 BTech, 90 MTech, and 160 PhD** scholars. We have a team of 40 dedicated and dynamic faculty members (34 fulltime + 6 affiliated/visiting) and 12 staff members engaged in cutting edge research and teaching in several frontier areas of Electrical Engineering. Please visit https://ee.iith.ac.in/faculty.html to know more about their areas of interest.

2. Why choose M.Tech at EE-IITH?

The M.Tech program in Electrical Engineering started in 2009. The M.Tech students have a significant role to play in the growth of the departmental footprint in the research arena. They are provided with state-of-the-art laboratory facilities that they can access at any time.

EE-IITH alumni have achieved excellence all round, in industry and academia. Our alumni are pursuing higher studies in top universities (Stanford, Michigan, UCLA, UCSD, etc.) and working in major companies (Qualcomm, GE, Xilinx, Intel, TSMC, ISRO, etc.) across the world.

The faculty members of the Department are well versed with the latest industrial practices and endeavor to bridge theoretical understanding and practical applications. We have strong industrial interactions. The continuous feedback received from industries has proven to be helpful to educate the students in a way so that they can develop skills to take up engineering challenges in the real world. Students are always encouraged to share their ideas rather than only following the instructions.

3. Specializations and research activities

There are broadly 4 specializations[1] you can choose from to pursue an M.Tech in our department. The following lists the various research activities in each.

Communications, Signal Processing and Learning	5G, mmWave and LiFi communications, 3D immersive display, AI and ML, Internet-of-things (IoT) and cyber physical systems, Information theory and coding, Performance analysis, Resource allocation and Game theory, Speech and multimedia signal processing, Security and privacy, UAV based sensing, Video Quality Assessment, Statistical Inference
Microelectronics and VLSI	VLSI/ULSI IC and system design, Nanoelectronics, Nano bio sensors, gas sensors, Nanophotonics, metamaterials, optoelectronic devices, 3DIC, MEMS-ASIC integration, Flexible electronics, Embedded systems, Analog, digital and mixed signal VLSI, RF IC, CMOS Image sensors, Energy harvesting, ICs for wireless communication, Integrated microelectronic devices
Power Electronics and Power Systems	Microgrids, Renewable energy systems, Multilevel inverters and drives, Power quality, Switched mode power conversion, Converter design for grid connected renewable energy, Power system stability, Power system protection, Smart grids, Wide area monitoring and control
Systems and Control	Pattern matching and data mining, Big data analytics, Condition monitoring, Advanced/statistical control, Systems biology

4. M.Tech programs:

For the current session, the Department of Electrical Engineering at IIT Hyderabad offers the following M.Tech programs.

1. Full-time 3-year program (IITH project sponsored/MTech RA) only in the following specializations
    a. Communications, Signal Processing and Learning
    b. Microelectronics and VLSI

The above programs have the following three components in the curriculum.

1. Theory courses.
2. Laboratory courses.
3. M.Tech thesis/project work.

[1] Admissions to the M.Tech program in Artificial Intelligence are now handled by the department of AI. Please see ai.iith.ac.in for more details.

All the above programs have the **same total credit requirement and the credit composition** (i.e., distribution of total credit over individual components). Typically, students have to do 48 credits of coursework (theory+lab+24 credits thesis work), 1-credit mandatory English communication and 1 credit for industrial lectures. The only difference is that they may be spread over different durations (2/3 years). Please see https://ee.iith.ac.in/mtech_courses.html to get an idea of the curriculum.

Full-time 3-year M.Tech program

Students admitted to the full-time M.Tech 3-year program are responsible to provide research assistance apart from the teaching assistance. The typical responsibility of a research assistant (RA) includes managing a laboratory, preparing experimental setup for an ongoing research, and so on. The advantage of the full-time 3-year M.Tech program is that the students can get better exposure to research under the particular program. An RA might have a slightly higher stipend.

Please note that the EE department is not accepting applications for the 3-year M.Tech program with MoE fellowship for August 2025. There is only a 3-year M.Tech with fellowship from projects of IITH faculty, and only in Communications, Signal processing and Learning, and Microelectronics & VLSI.

Full-time industry/self-sponsored M.Tech program

Students admitted to the full-time industry/self-sponsored MTech program have to follow the same curriculum and the requirements for the regular 2-year MTech (TA) program. They are not paid a stipend, but self-sponsored candidates are eligible for on-campus placements provided that they meet the necessary academic requirements. The difference is in the eligibility criteria and selection process. The fee structure is also different.

For the industry-sponsored M.Tech program, the candidate must be currently employed in the industry, and the employer must be willing to sponsor the candidate for the program.

Details about the fee structure for various programs can be found here: https://iith.ac.in/academics/fee-structure/

5. Eligibility criteria and selection process:

At the time of application, the candidate must have an earned BE/B.Tech degree or, at least, should be in the final year of undergraduate studies. The candidate must have a BE/B.Tech degree at the time of admission.

- **2-year regular M.Tech program with MoE fellowship (M.Tech TA)**
    - **Mode TA1 (with GATE score):** The only criteria for application is that the candidate must have a valid GATE score in the appropriate paper:

M.Tech Specialization	GATE Paper code
Communications, Signal processing and Learning	EC

Microelectronics and VLSI	EE/EC/IN/PH
Power Electronics and Power Systems	EE
Systems and Control	EE/EC/IN

Seat selection process is through the **Common Offer Acceptance Portal (COAP)**. Candidates must first register on COAP, and then apply on the IITH M.Tech admissions portal https://ee.iith.ac.in/mtech.html. Admission is typically based upon GATE score. However, depending upon the circumstances, additional selection criteria may also be enforced.

- **Mode TA2 (B.Tech degree from IITs):** Admission is through interview and written test. The candidate must have **a BTech degree from an IIT in one of the following specializations with a CGPA score above 8**. This is only the eligibility requirement, and additional selection criteria may be imposed based on the number of applications.

M.Tech Specialization	BE/B.Tech Discipline
Communications, Signal processing and Learning	EE/EC/MC/ES/EP/CS/AI or equivalent
Microelectronics and VLSI	BE/BTech in EE/EC/IN/EP/ES/ Nanotechnology or equivalent
Power Electronics and Power Systems	EE or equivalent
Systems and Control	EE/EI or equivalent

Applications will be accepted only through the IITH admissions portal. Please see https://ee.iith.ac.in/mtech.html

Abbreviations:

- Electrical Engineering (EE).
- Electronics and Communication Engineering (ECE).
- Electronics and Instrumentation (EI).
- Mathematics and Computing (MC)
- Engineering Physics (EP)
- Engineering Sciences (ES)

• 2-year self-sponsored M.Tech program (M.Tech SS)

Admission is on the basis of a written test and interview. GATE is not mandatory for application. In order to be eligible to apply for a particular specialization, the candidate must firstly have BE/B.Tech background **with CGPA 7 and above**, in any of the disciplines recognized by the respective M.Tech specialization.

M.Tech Specialization	BE/B.Tech Discipline	GATE Paper Code
Communications, Signal processing and Learning	EE/EC/MC/ES/EP/CS/AI or equivalent	EC
Microelectronics and VLSI	BE/BTech in EE/EC/IN/EP/ES/	EE/EC/IN/PH

	Nanotechnology or equivalent, MSc or equivalent in Electronics/Electronic sciences/Physics	
Power Electronics and Power Systems	EE or equivalent	EE
Systems and Control	EE/EI or equivalent	EE/EC/IN

Applications will be accepted only through the IITH admissions portal. Please see https://iith.ac.in/mtechadmissions/.

Tentatively, the written test and interview will be in the month of **July 2025**.

- **3-year M.Tech programs (M.Tech RA)**
  - **Mode RA1:** Candidates must typically have a valid GATE score in the appropriate paper. Preliminary shortlisting is through GATE score and/or academic background. Candidates shortlisted will have to attend a written test and interview.

M.Tech Specialization	GATE Paper Code
Communications, Signal processing and Learning	EC
Microelectronics and VLSI	EE/EC/IN/PH

Applications will be accepted only through the IITH admissions portal. Please see https://iith.ac.in/mtechadmissions/

  - **Mode RA2 (B.Tech degree from IITs):** Preliminary shortlisting is through academic background. Candidates shortlisted will have to attend a written test and interview.

M.Tech Specialization	BE/B.Tech Discipline
Communications, Signal processing and Learning	EE/EC/MC/ES/EP/CS/AI or equivalent
Microelectronics and VLSI	BE/BTech in EE/EC/EP/ES/IN/ Nanotechnology or equivalent, MSc or equivalent in Electronics/Electronic sciences/Physics

Applications will be accepted only through the IITH admissions portal. Please see https://iith.ac.in/mtechadmissions/

- **2-year government lab/public sector/industry sponsored M.Tech programs**

There will be a written test and interview. GATE is not mandatory.

M.Tech Specialization	BE/B.Tech Discipline	GATE Paper Code
Communications, Signal processing and Learning	EE/EC/MC/ES/EP/CS/AI or equivalent	EC
Microelectronics and VLSI	BE/BTech in EE/EC/IN/EP/ES/	EE/EC/IN/PH

	Nanotechnology or equivalent, MSc or equivalent in electronics /Electronic sciences/Physics	
Power Electronics and Power Systems	EE or equivalent	EE
Systems and Control	EE/EI or equivalent	EE/EC/IN

Applications will be accepted only through the IITH admissions portal. Please see https://iith.ac.in/mtechadmissions/

Written test and interview

M.Tech Specialization	Syllabus
Communications, Signal processing and Learning	EC Gate http://gate.iitd.ac.in/Syllabus/EC.pdf
Microelectronics and VLSI	EC Gate http://gate.iitd.ac.in/Syllabus/EC.pdf
Power Electronics & Power Systems	EE Gate http://gate.iitd.ac.in/Syllabus/EE.pdf
Systems and Control	EE Gate http://gate.iitd.ac.in/Syllabus/EE.pdf

Written test and interviews for various programs (except 2-year regular M.Tech for candidates applying through COAP, which does not have written test and interview) will tentatively be in the month of July 2025. Please check https://ee.iith.ac.in/mtech.html for the latest details.

Communications, Signal Processing and Learning

In addition to GATE EC syllabus, emphasis will be on:

- Linear Algebra
- Probability and random processes
- Signals and Systems
- Discrete time signal processing
- Analog and digital communications

Microelectronics and VLSI

In addition to GATE EC syllabus, emphasis will be on:

- Basics of electrical networks
- Analog circuits
- Digital circuits
- Fundamentals of semiconductor devices
- Basics of signals and systems
- Electromagnetics

Power Electronics and Power Systems

In addition to GATE EE syllabus, emphasis will be on:

- Electrical networks
- Electrical machines
- Power systems
- Power electronics
- Control systems
- Linear algebra
- Signals and systems

Systems and Control

In addition to GATE EE syllabus, emphasis will be on:

- Electrical Networks
- Linear Algebra
- Control systems
- System design
- Advanced Control
- State Space Techniques
- Optimization
- Signals and Systems

Note

The department reserves the right to set any cutoff for the shortlisting of M.Tech applications. In addition, the department has all the rights to withdraw seats and not select anybody if no appropriate candidates are found. Mere eligibility does not imply that the candidate will be called for the written test/interview.

For deciding the cutoff marks for pre-screening and written test, (applicable for 3-year programs, and 2-year industry/self-sponsored program) and CGPA cutoff for modes TA2, RA2, the SC, ST and OBC candidates will be provided relaxation as per the standard GOI norm.

6. Application Process:

IIT Hyderabad has a centralized online application portal for the M.Tech admission. Candidates are requested to visit https://iith.ac.in/mtechadmissions/ for details.

For the latest updates on the M.Tech admissions at EE, IITH, previous year cutoffs, fee structures and additional information, please visit https://ee.iith.ac.in/mtech.html.

In case of any queries, please write to: mtech.admission@ee.iith.ac.in