Indian Institute of Technology Dharwad

॥ सा विद्या या विमुक्तये ॥
भा.तं.सं. ಧಾರವಾಡ
भा. प्रौ. सं. धारवाड
I.I.T. DHARWAD

Information Brochure

M.Tech. Admissions

Academic Year 2025-26

(For Indian Nationals)

CONTENTS

Section I

General Information on Admission Process

A. SCHEDULE OF MASTER OF TECHNOLOGY (M.TECH.) ADMISSION

Sr. No.	Description	Relevant dates*
1.	Applications open	This information will be updated on the institute website
2.	Last date to apply online	
3.	The timeline of offer uploading will be updated on the institute website as per the schedule release by COAP	

All potential candidates are requested to visit the institute website regularly for updated information about the schedule. **The updates regarding the admission process will be made available on the institute website under section Academics >> Admissions >> M.Tech.**

B. FINANCIAL SUPPORT

IIT Dharwad admits candidates for full-time M.Tech. Program, under Teaching ASSISTANTSHIP (TA).

B.1 Teaching Assistantship (TA)

Funded by the Ministry of Education (MoE, formerly known as MHRD), the TAs are expected to assist in the academic/administrative work for smooth functioning of the institute. Students under this category are entitled to financial support as per the MoE norms.

1. The assistantship is payable for a maximum duration of two academic years. At present, the monthly rate of assistantship is ₹12,400.

2. To get the TA stipend, the students concerned must assist in teaching, research and/or administrative work as assigned by the respective academic unit to the extent of 8 hours work per week.

3. The continuation of the assistantship will be subject to the satisfactory performance of the duties assigned by the departments as well as satisfactory academic performance.

4. As per MoE directives, the employees on the rolls (with or without pay) of any organization are not eligible for admission under this category. Candidates selected in this category must resign from their current job and submit a relieving letter from their employer before joining the program.

C.   APPLICATION PROCESS

1.   Please read all the instructions given in the brochure carefully before filling up the application form.

2.   Register in the COAP portal and note your COAP registration number.

3.   The link for the online application for applying to IIT Dharwad will be updated on our website.

4.   Click on Register/ Signup, and provide your details. Please note that the phone number and email ID that you provide while registering should be valid till the admission process is completed. All the communication will be through this email ID.

5.   After registration, you will get an email with your User ID/Username and along with a link to set your password. Set a new password by clicking on the link. Note down your User ID and password for future reference.

6.   Login using your User ID and password. >> Fill out the form step by step >> Keep all the documents ready in soft copy>> Pay the application fee through the SBI e-collect facility. (link available in application form) >> Note down SBI e-collect reference No.>> Fill the remaining details.>> Note down the submission ID for future reference and you will get a mail confirmation of the application.

7.   This information brochure and future updates regarding the admission process will be made available on the institute website under section **Academics >> Admissions >> M.Tech.**

8.   The application fee is as follows: Please visit the link given below and choose "Application Fee (M.Tech/M.Tech(R)S/PhD)", **fill in all the particulars and choose an amount based on your social category. Please submit and note down the transaction reference number to be mentioned in the application form as well as for future reference.**
State Bank Collect (onlinesbi.sbi)

Gen/Gen (EWS)/OBC/ all other candidates	₹ 200/-
Women/SC/ST/PwD category candidates	₹ 100/-

9.   **The Application Form without valid online payment details will not be considered. Application FEE once paid is Non-Refundable.**

10.   **An applicant needs to pay the application fee only once irrespective of the number of departments the applicant is applying to.**

11.   Applicants may find it convenient to keep following information ready while filling the application form online (whichever relevant).

●   COAP Registration Number
●   Passport size photograph [50 kb to 200 kb ,JPEG/PNG formats only]
●   Identity Proof (Adhaar Card, Voter ID Card, Passport etc.)
●   Educational qualification details from secondary school onwards.
●   NET/GATE/Other relevant qualifying examination details (if applicable).
●   Fellowship related documents, e.g., JRF Award Letter, (if applicable).

●   Research Proposal (For applicants in the Department of HEART)
●   List of fellowships/ awards (if applicable).
●   Details of the Publications (if applicable).
●   Sponsorship Letter and CV of co-supervisor if you are applying under 'EX' category. (merged as a single PDF)(if applicable).

12.   Every department may offer only some modes of financial support/application categories. Please ensure that you meet the eligibility criteria for that category/ mode. Refer to the brochure for further details.

13.   Choose your Department and eligibility for the Application carefully after going through the brochure. Once you proceed to the next page, these options can not be modified.

14.   Please verify all your details before clicking on the 'Submit' button. Applications once submitted can not be modified. **Your application is liable to be rejected for incomplete/ false information.**

15.   You can apply for multiple programs. Separate applications should be submitted for each program.

16.   **Keep checking the institute website and your emails regularly for any communication from the institute regarding the selection process. It is the candidate's responsibility to be aware of the schedule of various events related to the admission process.**

17.   The Shortlisted candidates' list will be uploaded on the institute website as per the schedule given above in Section A.

18.   Candidates (if) called for written test / interview should bring with them Photo ID Card, Printed Copy of Online Application Form, Photocopies of Academic Transcripts, Degree Certificates & Experience Certificates, Caste Certificate (if applicable), PwD Certificate (if applicable), EWS Certificate (if applicable), Thesis/Dissertation/Report/Publications and all other relevant documents.

19.   **Please note that the candidates (if selected) should be able to produce all relevant documents within a short period of notice. If the documents are not produced within the deadline, the admission is liable to be canceled.**

20.   The candidates who secure admission under OBC-NCL and EWS categories are required to produce the OBC-NCL/ EWS certificate issued **after 01 April 2025**. The certificate should be produced at the time of admission. The category certificate must be in the **format applicable to Central Government institutions**, and the state Government formats will not be accepted under any circumstances.

D. FEES, DEPOSITS & HOSTEL RENT

Sl. No.	Fee Amount (In ₹)	General/EWS/OBC	SC/ST/ Divyangjan
A. One-time payment at the time of Admission			
1	Admission Fee	300.00	300.00
2	Academics Service Charges	1,200.00	1,200.00
3	Alumni Lifetime Membership	2,000.00	2,000.00
4	Convocation fee	3,000.00	3,000.00
Sub-Total (A)		**6,500.00**	**6,500.00**
B. Semester Fee			
1	Registration Fee	1,500.00	1,500.00
2	Tuition Fee	#5000.00	## Nil
3	Examination Fee	2,000.00	2,000.00
4	Library	500.00	500.00
5	Gymkhana Fee	3,000.00	3,000.00
6	Hostel Room Rent	1,000.00	1,000.00
7	Electricity & Water Charges	2,500.00	2,500.00
8	Medical and Wellness Fee	2,500.00	2,500.00
9	Student Benevolent Fund	1,000.00	1,000.00
10	Hostel Establishment and Service Charge	2,500.00	2,500.00
11	Mess Establishment and Service Charges	1,500.00	1,500.00
12	Student Activity Establishment charges	2,000.00	2,000.00
Sub-Total (B)		**25,000.00**	**20,000.00**
Mess Advance		**24,500.00**	**24,500.00**
Medical Insurance Premium (MIP)		**1,500.00**	**1,500.00**
C. Deposits (Refundable) to be paid at the time of Admission			
1	Library Deposit	1,000.00	1,000.00
2	Institute Deposit	5,000.00	5,000.00
3	Mess Deposit	5,000.00	5,000.00
Sub-Total (C)		**11,000.00**	**11,000.00**
GRAND TOTAL FEE (A + B + Mess Advance + MIP + C)		**₹ 68,500.00**	**₹ 63,500.00**

Note:

1.#IIT Dharwad reserves the right to revise the Tuition Fee-Statutory Fee (in the future).
2.##All the SC/ST/Divyangjan students are exempted from the payment of Tuition fees.
3.All the students are required to pay the entire fee as per the fee circular. The students who wish to reside outside may be permitted to do so with the permission of the institute only after reporting to the campus. The respective fee components related to the hostel and mess advance will be reimbursed later with the approval of the competent authority.

E.   INFORMATION PERTAINING TO HOSTELS

About IIT Dharwad	Kindly visit the website https://www.iitdh.ac.in/ for available facilities
Hostel room allocation. (on sharing basis)	You will be allotted a room in the hostel & the room key will be handed over on your arrival at the institute. Each room will accommodate roughly two/four students (depending on the prevailing conditions) and has an attached bath & toilet.
Are hostel rooms furnished	Each student will be provided a cot, chair & study table, and wardrobe. Students can purchase mattress/bedding, bucket, etc. locally. Arrangements will be made for on-campus shopping for these items.
Possession of motorized vehicle	NOT ALLOWED, however bicycles are permitted in the campus.
Climatic conditions	The weather at Dharwad is pleasant throughout the year. Generally, it will be raining in the months of June to September and weather will be windy and cold during the months of October to January. It is suggested that you carry protective clothing accordingly.

Section II

Department-Specific Information

F. DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (CSE)

F.1 Eligibility For Admission

F.1.a Qualifying Degree

    I.   B. Tech / B. E. in Computer Science and Engineering
<div align="center">**OR**</div>

    II.   Any B. Tech / B. E. in allied Engineering branches
<div align="center">**OR**</div>

    III.   Master of Computer Applications (MCA)
<div align="center">**OR**</div>

    IV.   M.Sc. in Computer Science

A valid GATE score in CSE is essential for all the candidates, except for candidates who have B. Tech. or equivalent degree in CSE and allied branches from IITs or BS degree or equivalent degree in CSE or allied branches from IISc with a minimum CPI/CGPA of 8.0 on the scale of 10.

F.1.b Minimum Eligibility Criteria

F.1.b.1 Minimum Score in The Qualifying Degree:

For General/General (EWS)/OBC category candidates and/or for candidates where no concession in academic performance is called for, the eligibility criteria in the qualifying degree (B.Tech./B.E.) is either:

- a minimum of 60% marks (without round off) in aggregate over the entire duration of the undergraduate program.

- a minimum Cumulative Grade Point Average (CGPA) or Cumulative Performance Index (CPI) of 6.0 on the scale of 0-10; with corresponding proportional requirements when the scales are other than on 0-10, (for example, 4.8 on a scale of 0-8).

- Candidates with MSc in Computer Science have eligibility criteria of a minimum of 60% marks in both BSc in Computer Science and MSc in Computer Science.

- Candidates with MCA have eligibility criteria of a minimum of 60% marks in both BCA and MCA.

- For SC/ST/PwD category candidates, a relaxation of 5% in the performance at the qualifying degree is applicable.

Merely satisfying the eligibility conditions does not guarantee selection into the program.

F.1.b.2 Applicants in The Final Phase of Getting Qualifying Degree

Students who are in the final phase of receiving the above-mentioned qualifying degree and who are likely to graduate before the commencement of Autumn 2025-26 semester of IIT Dharwad are also eligible to apply. However, if offered, the admission to those candidates would be provisional. To join an academic program at IIT Dharwad, such candidates need to furnish necessary documents regarding completion of the degree on the date of joining IIT Dharwad. The date of joining will be announced later on the institute website. The candidate

needs to meet the criteria specified in section above considering updated score in the qualifying degree, in the meanwhile, the aggregate academic performance announced by the respective university till the last date to apply online (mentioned in section A) should be used to determine eligibility for application and same to be reported in the online application.

F.2 Screening Criteria Of Applications

For General/General (EWS) category candidates and/or for candidates where no concession in academic performance is called for, the eligibility requirement in the GATE score is a soft cutoff of 600. And for other categories, relaxation is given as per GOI norms i.e. 0.9*600= 540 for OBC-NCL and ⅔*600=400 for SC/ST/PwD candidates.

F.3 Financial Support Category

The Department of CSE at IIT Dharwad invites applications for the M.Tech. in CSE under the TA category for the Academic Year 2025-26. Note that at the time of admission, the students will be admitted into the program through the common offer acceptance portal (COAP).

F.4 Nubmer of Available Seats

The total number of seats available in the TA category is 33*[□].

*30 seats are distributed as per the seat matrix for different social categories. The admission is purely based on the GATE score and as per the criteria specified in previous Sections.

[□]3 seats are supernumerary and are distributed among the candidates who have B.Tech. or equivalent degree in CSE or allied branches from IITs or BS or equivalent degree in CSE or allied branches from IISc with a minimum CPI/CGPA of 8.0 on a scale of 0-10.

F.5 Modality Of Selection Process

For admission through GATE score, the candidates with higher GATE scores will be allotted seats based on their social category. Candidates can access the offers made (from IIT Dharwad) on COAP website during the time window mentioned in COAP.

Tie-breaker criteria for the instances when the GATE score is same among multiple candidates within the same social category will be as follows in that order:

The aggregate academic performance in their B.Tech./B.E. till the last date for applying for the program (as mentioned in Section A)

Seniority of the candidate based on their date of birth. The candidates with an earlier date of birth will be given preference.

For the candidates who have B.Tech. or equivalent degree in CSE or allied branches from IITs OR BS or equivalent degree in CSE or allied branches from IISc with minimum CPI/CGPA of 8.0 on the scale of 0-10, the selection will be based on CPI/CGPA only.

F.6 Department Level Contacts For Admission Process Enquiries

For queries related to MTech admissions in the CSE, one can write to pgadmissions.cse@iitdh.ac.in with the subject "Query related to MTech Admissions in CSE."

F.7 Program Structure (M.Tech. In Computer Science and Engineering)

Total credit requirement for the course completion is a minimum of **125 credits** with the following distribution:

- 61 Credits of Coursework
  - Of the 61 credits, a seminar course of 4 credits needs to be done. This course is categorized as Institute Core (IC).
  - Of the 61 credits, 21 credits need to be done via courses offered by the department. These courses are categorized as Program Core (PC).
  - Of the 61 credits, up to 36 credits can be done via courses categorized as electives (E). Of these 36 credits, at least 24 credits should be from or related to the CSE discipline. Remaining credits can be outside of or from the CSE discipline.
- Students may fulfill their elective credit requirements by enrolling in a maximum of 12 credits of undergraduate (UG) courses, with the approval of faculty advisor (FA).
- 64 Credits of M.Tech. Project. This is categorized as Institute Core (IC)
- Compulsory communications skills course (P/NP i.e. Pass/Not Passed). This course does not carry any credits.

In Summary, 68 credits are to be earned via courses categorized as IC and 21 credits via courses categorized as PC and 36 credits via courses categorized as E.

F.7.1 Semester Wise Credits Distribution (Prescribed Distribution)

Semester 1 (a minimum of 27 credits needs to be earned)	Semester 2 (a minimum of 32 credits to be earned.)	Semester 3	Semester 4
21 Program Core (PC) credits. Of these, 7 credits are earned via lab-based courses.	• 4-credit Seminar Course (PC) • 32-34 credits of electives (E) Note: by the end of this semester, a cumulative of 36 credits of electives (E) courses must be completed.	M.Tech. Project Phase I 32 credits	M.Tech. Project Phase II 32 credits
6 or (up to) 8 credit elective course (E)			
Communications skills course (P/NP)			

F.7.2. List of Courses

- Advanced Data Structures and Algorithms (PC, 6 credits)
- Combinatorics and Probability (PC, 6 credits)
- Advanced Data Structures and Algorithms Lab (PC, 3 credits)
- Advanced Software Development Laboratory

(PC, 6 credits, includes 2 credits worth lecture sessions and 4 credits worth labs sessions.)

F.7.3 List of Electives

A number of electives from the CSE discipline are offered. Some of these are listed below. Note that the list is not exhaustive.

- Logic for Computer Science
- Advanced Computer Architecture
- Statistical Pattern Recognition and Lab
- Graph Theory and Combinatorics
- Advanced Distributed Systems
- Reinforcement Learning and Lab
- Parameterized Algorithms and Complexity
- Advanced Computer Networks
- Pattern Recognition and Machine Learning and Lab
- Logic and Applications
- Software Development for Scientific Computing
- Mathematics for Data Science
- Formal models of concurrent and asynchronous systems
- FPGA (Field Programmable Gate Arrays) for Communication Networks Prototyping
- Neural Networks and Deep Learning and Lab
- Topics in Automata and Logics
- Software-defined Networking and Network Function Virtualization
- Speech processing and Lab
- Approximation Algorithms
- Advanced Embedded Computing
- Probability Models
- Advanced Automata Theory
- Compilers - Principles and Implementation
- Introduction to Block Chai Mining Massive Datasets
- Parallel Computing
- Scalable Data Mining

G. DEPARTMENT OF ELECTRICAL, ELECTRONICS AND COMMUNICATION ENGINEERING (EECE)

G.1 Eligibility For Admission

G.1.a General Eligibility Criterion

1. B.Tech./B.E. in Electrical Engineering,
   a. Electronics and communication Engineering,
   b. Instrumentation engineering
   c. Instrumentation and control engineering
   d. Telecommunication engineering
   e. Electronics and Telecommunication engineering
   f. Electrical and Electronics
2. A valid GATE score in one of the following papers EE or EC or IN,

**Valid GATE score is essential for all the candidates, except for candidates who have B.Tech. or equivalent degree from IITs or BS degree from IISc with a minimum CPI/CGPA of 8.0 on the scale of 10.

G.1.b Minimum Score in The Qualifying Degree

For General/General (EWS)/OBC category candidates and/or for candidates where no concession in academic performance is called for, the eligibility criteria in the qualifying degree (B.Tech./B.E.) is either of the following two:

- A minimum of 60% marks (without round off) in aggregate over the entire duration of the undergraduate program.
- A minimum Cumulative Grade Point Average (CGPA) or Cumulative Performance Index (CPI) of 6.0 on the scale of 0-10 with corresponding proportional requirements when the scales are other than 0-10 (for example, 4.8 on a scale of 0-8).

For SC/ST/PWD category candidates, a relaxation of 5% in the performance at the qualifying degree is applicable.
Merely satisfying the eligibility conditions does not guarantee selection into the program.

G.2 Applicants In The Final Phase Of Getting Qualifying Degree

The students who are in the final phase of receiving the above-mentioned qualifying degree and are likely to graduate before the commencement of the Autumn 2025-26 semester are also eligible to apply. However, if offered, the admission to those candidates would be provisional. To join the academic program at IIT Dharwad, such candidates need to furnish necessary documents regarding completion of the degree on the date of joining IIT Dharwad. The date of joining will be announced later on the institute website. The candidate needs to meet the criteria specified in Section H.1 above considering the updated score in the qualifying degree. In the meanwhile, the aggregate academic performance announced by the respective university till the last date for submission (mentioned in section A) should be used to determine eligibility for application, and the same should be reported in the online application.

G.3 Screening Criteria of Applications

The GATE cut off for applying to the M.Tech. Programs are as follows: Each specialization will have a cut off 350 for General/General (EWS) and for other categories, relaxation is given as per GOI norm i.e. 0.9*350=315 for OBC-NCL and ⅔*350=233 for SC/ST/PwD candidates

G.4 Financial Support Category

The Department of EECE at IIT Dharwad invites applications for the M.Tech. in Electrical, Electronics, and Communication Engineering with the following specializations under the TA category for the Academic Year 2025-26:

Microelectronics and VLSI
Communication, Signal Processing and ML (CSPML)
Power electronics and Power systems (PEPS)

Note:At the time of admission, the students will be admitted to one of the above specializations through COAP.

G.5 Number Of Available Seats

The total number of seats available in the TA category are as follows:
Microelectronics and VLSI: 15 students
Communication, Signal Processing and ML (CSPML): 15 students
Power electronics and Power systems (PEPS): 15 students

In each of the specializations, 15 seats are distributed as per the seat matrix for different social categories.

*15 seats in each specialization are to be admitted purely based on the GATE score and as per the criteria specified in Sections H.1 and H.3.

**1 seat in each specialization is supernumerary for the candidates who have B.Tech. or equivalent degree from any of the centrally funded technical institutes with a minimum CPI/CGPA of 8.0 on scale of 0-10.

G.6 Modality Of Selection Process

For admission through GATE score, the candidates with higher GATE scores will be allotted seats based on their social category. Candidates can access the offers made (from IIT Dharwad) in COAP website during the time window mentioned in COAP.

Tie-breaker criteria for the instances when the GATE score is same among multiple candidates within the same social category will be as follows in that order:

The aggregate academic performance in their B.Tech./B.E. till the last date for submission

Seniority of the candidate based on their date of birth. The candidates with earlier date of birth will be given preference.

GATE is not mandatory for the candidates who have B.Tech. or equivalent degree from IITs or BS degree from IISc with minimum CPI/CGPA of 8.0 on the scale of 0-10 for supernumerary seats. For such candidates, the selection will be based on CPI/CGPA only.

G.7 Department Level Contacts For Admission Process Enquiries

For queries related to MTech admissions in the Electrical, Electronics, and Communication Engineering Department, one can write to pgadmissions@iitdh.ac.in with the subject "Query related to MTech Admissions in EECE".

G.8. Program Structure (M.Tech. In Electrical, Electronics, And Communication Engineering With Specializations)

Total credit requirement for the course completion: minimum **131 credits** with following distribution:

1. Core Theory courses = 18 **credits** from courses prescribed in Core theory basket
2. Core lab courses = 3 credits from the courses prescribed in Core lab basket
3. Seminar course = 4 credits
4. Students admitted should complete electives courses = 24 credits from one of the following baskets depending on the specialization to which the student got admitted:
    a. Communications and Signal processing
    b. Microelectronics and VLSI
    c. Power electronics and power systems
5. The remaining 18 credits can be chosen from any basket (in addition to core theory, core lab and seminar credits) or outside the department courses subject to the following requirements.
    a. A student can take up to two electives (12 credits) from outside the department to meet their elective credits requirements. These electives must be at level 600 or above (PG level courses).
    b. A student can take at most 1 UG elective (6 credits), i.e., 300 or above Level course to meet their elective credits requirements.
6. 64 credits from MTech project I and MTech project II (32 credits each).
7. Compulsory communications skills course (P/NP i.e. Pass/Not Passed). This course does not carry any credits.

Semester-wise credits distribution (prescribed distribution)

Semester 1	Semester 2	Semester 3	Semester 4
18 core theory credits			
3 core lab credits			
3-credit seminar	30 credits of electives	M.Tech. Project I 32 credits	M.Tech. Project II 32 credits
12 credits electives			
Communications skills course (P/NP)			

List of courses
The core theory courses are (6 credits each)
1. Linear Algebra and its applications
2. Embedded systems design (new course)

3. Probability and applications
4. Multivariable Control Systems

The student must take at least 3 out of these 4 courses to complete the core theory course requirements regardless of the specialization.

The core lab courses are (3 credits each)
1. Embedded systems design lab (new course)
2. VLSI Simulations Lab (new course)

The student must take at least 1 out of these 2 lab courses to complete the core lab course requirements regardless of the specialization.

All the core theory and lab courses will be offered in the Autumn semester (odd semester and the first semester for fresh students).

List of electives
Autumn (Odd) semester

Basket: VLSI and Microelectronics	- VLSI Design - Physics of Transistors - Analog IC design - Nano electronics
Basket: Communication, Signal Processing and Machine learning	- Speech Processing - Speech Processing Lab
Basket: Power electronics and power systems	- Photovoltaic system design - Power Systems Dynamics and Control

Spring (Even) Semester

Basket: VLSI and Microelectronics	- Mixed signal VLSI Design - VLSI Technology - Power semiconductor devices - System Design of Electronic Products - VLSI Testing and testability
Basket: Communication, Signal Processing and Machine learning	- Pattern Recognition and Machine learning (PRML) - PRML Lab - Detection and estimation theory - Optimization theory and algorithms - Next generation wireless networks - Wireless communications - Neural networks and deep learning (NNDL) - NNDL Lab
Basket: Power electronics and	- Advanced Electric Drives - Design of power converters

power systems	- Micro grid dynamics and control - System Design of Electronic Products - Power system protection - Smart grid - Power systems operation and control - Modeling and control of renewable energy sources - Electric Vehicles: Systems and components - Advanced power electronics and drives - Power System Protection (3-0-0-6) - Power System Simulation Lab (0-0-3-3)

H. DEPARTMENT OF MECHANICAL, MATERIALS, AND AEROSPACE ENGINEERING

The Department of Mechanical, Materials, and Aerospace Engineering (MMAE) was started as the Department of Mechanical Engineering in the year 2016, the same year of establishment of IIT Dharwad. The department was renamed in the year 2019. Since its inception, the department has been offering a four-year B.Tech. Program in Mechanical Engineering at an undergraduate level. At the postgraduate level, the department offers research programs such as M.S. (by Research) and Ph.D. programs. From the autumn semester 2022-23, Department of MMAE started a two-year M.Tech. in Mechanical Engineering.

The Department's UG and PG curriculum offers a distinct combination of courses with sound conceptual understanding together with practice-oriented learning elements. The theoretical rigor is imparted from a selection of courses in basic sciences and interdisciplinary topics in addition to subjects from the core mechanical and materials engineering curriculum, which are backed by an array of hands-on laboratory courses.

The faculty of the department work on various core research areas and on an extensive list of interdisciplinary research areas. The research areas of MMAE faculty members are listed below.

Stream	Area of Research
Thermal and Fluids Stream	Computational Fluid Dynamics (CFD) Non-Newtonian flows Turbulence Compressible flows Multiphase flows Fluid Structure Interaction (FSI) Machine learning for fluid mechanics Turbomachinery aerodynamics Experimental methods in fluid mechanics Thermoacoustic Combustion Fire dynamics and fire safety Gas turbine blade cooling Atomization and sprays Environmental fluid mechanics
Design Stream	Computational and experimental mechanics Finite Element Methods (FEM) Nonlinear mechanics Reduced order modeling Thin film dynamics Computational biomechanics Robotics Rigid multibody kinematics and dynamics Static Balancing Topology optimization Tribology and contact mechanics

	Vibrations Mechanics of composite materials Fracture mechanics. Mechanics of cellular solids Computer vision
Materials and Manufacturing Stream	Metal forming and plasticity CAD/CAM Numerical analysis of forming processes Fracture mechanics Additive manufacturing 4D Printing smart material CNC machining Micromechanical modeling of materials Material testing and characterization Dislocation dynamics and Crystal Plasticity modeling Light weight and high-temperature structural materials Digital Twins Computational Materials Science Multi-functional coatings

H.1. Eligibility For Admission

H.1.a. General Eligibility Criteria

1. B.Tech./B.E. or equivalent degree in Mechanical Engineering. B.Tech./B.E. from other branches are also considered, provided they have a valid GATE score in the paper categories mentioned below.
2. A valid GATE score in one of the following papers AE, ME, MT, PI, XE (A, B, C, D, E) *
3. The GATE cutoff for applying to the M. Tech program is 350 for General/General (EWS) and for other categories relaxation is given as per GOI norms i.e. 0.9*350=315 for OBC-NCL and ⅔*350=233 for SC/ST/PwD candidates

*Valid GATE score is essential for all the candidates, except for candidates who have B.Tech. or equivalent degree from IITs or BS degree from IISc with a minimum CPI/CGPA of 8.0 on the scale of 10.

H.1.b. Minimum Score in The Qualifying Degree

For General/General (EWS)/OBC category candidates and/or for candidates where no concession in academic performance is called for, the eligibility criteria in the qualifying degree (B.Tech./B.E.) is either of the following two:

● A minimum of 60% marks (without round off) in aggregate over the entire duration of the undergraduate program.

● A minimum Cumulative Grade Point Average (CGPA) or Cumulative Performance Index (CPI) of 6.0 on the scale of 0-10 with corresponding proportional requirements when the scales are other than 0-10 (for example, 4.8 on a scale of 0-8).

For SC/ST/PWD category candidates, a relaxation of 5% in the performance at the qualifying

degree is applicable.

Merely satisfying the eligibility conditions does not guarantee selection into the program.

H.2. Applicants In The Final Phase Of Getting A Qualifying Degree.

The students who are in the final phase of receiving above mentioned qualifying degree and are likely to graduate before the commencement of the Autumn 2025-26 semester are also eligible to apply. However, if offered, the admission to those candidates would be provisional. To join the academic program at IIT Dharwad, such candidates need to furnish necessary documents regarding completion of the degree on the date of joining IIT Dharwad. The date of joining will be announced later the institute website. The candidate needs to meet the criteria specified in Section F.1 above considering the updated score in the qualifying degree. In the meanwhile, the aggregate academic performance announced by the respective university till the last date for submission (mentioned in section A) should be used to determine eligibility for application, and the same should be reported in the online application.

H.3. Screening Criteria of Applications

The GATE cut-off for applying to the M.Tech. Program are as follows: 350 for General/General (EWS) and for other categories, relaxation is given as per GOI norms.

H.4. Financial Support Category

The Department of Mechanical, Materials, and Aerospace Engineering at IIT Dharwad invites applications for the M.Tech. in Mechanical Engineering program under the TA category for the Academic Year 2023-24.

H.5. Number Of Available Seats

The total number of seats available in the TA category for each of the three streams specified in H.8 is 15* + 2** = 17.

The 15 seats are distributed as per the seat matrix for different social categories.

*15 seats are to be admitted purely based on the GATE score and as per the criteria specified in Sections F.1 and F.3. At least 60% of seats [i.e., 9 seats] will be allocated to students with B.Tech./BE in Mechanical, Aerospace, Production, or Automobile Engineering and GATE paper in ME. At most 40% seats [i.e., 6 seats] may be filled by students with B.Tech./BE in any branch but with GATE paper in ME, AE, MT, PI, XE (A, B, C, D, E).

**2 seats are supernumerary for the candidates who have B.Tech. or equivalent degree from IITs or BS degree from IISc with minimum CPI/CGPA of 8.0 on scale of 0-10.

H.6. Modality Of Selection Process

For admission through GATE score, the candidates with higher GATE scores will be allotted seats based on their social category. Candidates can access the offers made (from IIT Dharwad) on COAP website during the time window mentioned in COAP.

Tie-breaker criteria for the instances when the GATE score is same among multiple candidates within the same social category will be as follows in that order:

The aggregate academic performance in their B.Tech./B.E. till the last date for submission

Seniority of the candidate based on their date of birth. The candidates with earlier date of birth will be given preference.

GATE is not mandatory for the candidates who have B.Tech. or equivalent degree from IITs or BS degree from IISc with minimum CPI/CGPA of 8.0 on the scale of 0-10 for supernumerary seats. For such candidates, the selection will be based on CPI/CGPA only.

H.7. Department Level Contacts For Admission Process Enquiries

For queries related to M.Tech. admissions in MMAE Department, one can write to pgadmissions.me@iitdh.ac.in and cc to pgadmissions@iitdh.ac.in with the subject "Query related to M.Tech. Admissions in MMAE".

H.8. Program Structure (M.Tech. in Mechanical Engineering)

Starting from the academic year 2025-2026, the Department of Mechanical, Materials, and Aerospace Engineering is starting three specializations in the M.Tech. programs, namely:

1. M.Tech. in Thermal and Fluids Engineering
2. M.Tech. in Design Engineering
3. M.Tech. in Manufacturing and Materials Engineering

The detailed program structures of the three programs are given below.

H.8.1 Programme Structure for M.Tech. in Thermal and Fluids Engineering

Total credit requirement for the course completion: minimum **128 credits**
IC: Institute core = **64 credits**,
PC: Program core = **52 credits**,
PE: Program Electives = **12 credits**

1st semester:
- 6 core-courses = 32 credits prescribed program core (4 theory courses with 6 credits each, one core lab with 6 credits + Research Methodology with 2 credits)

2nd semester:
2 Core-courses (6 credits each) = 12 credits prescribed program core
2 Elective-courses (6 credits each)
1 Core-lab (5 credits)
Practicum (3 credits)

3rd semester:
- MTech Technical Project work - Phase I (32 credits)

4th semester:
- MTech Technical Project work - Phase II (32 credits)

1ˢᵗ Semester: 32 Credits

Course Name	L-T-P-C	Objective of the course	Course Category
Fluid Dynamics	3-0-0-6	To provide exposure to students on the concepts of kinematics of fluid motion, boundary layer and compressible flows.	PC
Advanced Thermodynamics	3-0-0-6	To understand relationships between thermodynamics properties, various cycles, engines and basics of combustion, flame speed, concept of exergy.	PC
Computational Fluid Dynamics	3-0-0-6	To introduce numerical and mathematical concepts related to fluid flow and heat transfer problems.	PC
Engineering Mathematics for Advanced Studies	3-0-0-6	To introduce mathematical methods.	PC
Introduction to Programming and Modeling Laboratory	1.5-0-3-6	To introduce students to programming, analysis tools and software, Operating systems, R and Python programming, etc.	PC
Research Methodology	1-0-0-2	To introduce students to literature review, report preparations and seminar presentation to a large audience as seminar on research topics in Mechanical Engineering	PC

*Allocate MTech Technical Project Supervisor at the end of 1ˢᵗ semester

2ⁿᵈ Semester: 32 Credits

Course Name	L-T-P-C	Objective of the course	Course Category
Experimental		To introduce students with experimental analysis, data	

Course Name	L-T-P-C	Description	Category
Theory & Laboratory	1-0-3-5	analysis, measurement tools and to introduce basic and advance level experiments in Thermo-Fluids Engineering	PC
Experimental methods in Thermal and Fluids Engineering	3-0-0-6	To introduce number of intrusive and optical techniques for flow and flame visualization, data acquisition procedure, data analysis methods.	PC
Advanced Heat Transfer	3-0-0-6	To introduce and orient students to the concepts of different modes of heat transfer, two phase flow, radiation and extinction, scattering properties.	PC
Practicum	0-0-3-3	Presentation to a large audience as seminar on topics in Mechanical Engineering	PC
Elective I	3-0-0-6	To give a choice to the student to choose postgraduate level course	PE
Elective II	3-0-0-6	To give a choice to the student to choose postgraduate level course	PE

Out of two Departmental Electives for the PG students, maximum one UG level departmental course is allowed.

Semester – III: 32 Credits			Semester – IV: 32 Credits		
Course Name	L-T-P-C	Course Category	Course Name	L-T-P-C	Course Category
M.Tech. Project - I	0-8-16-32	IC	M.Tech. Project - II	0-8-16-32	IC

H.8.2 Programme Structure for M.Tech. in Design Engineering

Total credit requirement for the course completion: minimum **128 credits**

IC: Institute core = **64 credits**,

PC: Program core = **52 credits**,

PE: Program Electives = **12 credits**

1ˢᵗ semester:

- 6 core-courses = 32 credits prescribed program core (4 theory courses with 6 credits each, one core lab with 6 credits + Research Methodology with 2 credits)

2ⁿᵈ semester:

- 2 Core-courses (6 credits each) = 12 credits prescribed program core
- 2 Elective-courses (6 credits each)
- 1 Core-lab (5 credits)
- Practicum (3 credits)

3ʳᵈ semester:

- MTech Technical Project work - Phase I (32 credits)

4ᵗʰ semester:

- MTech Technical Project work - Phase II (32 credits)

1ˢᵗ Semester: 32 Credits

Course Name	L-T-P-C	Objective of the course	Course Category
Advanced Solid Mechanics	3-0-0-6	To introduce a general theory to study the response of solids to applied forces to be used to study simple boundary value problems. All the treatment would be three dimensional. The aim of the course material would be to inculcate in the reader some of the available tools to analyze a structure and to elucidate the simplifying assumptions made to make the structure analyzable.	PC
Finite Element Analysis	3-0-0-6	To introduce students to FEA to allow them to solve practical industry relevant problems.	PC
Dynamics and Control	3-0-0-6	To arm students with the knowledge to tackle problems related to vehicle dynamics,	PC

		robotics, etc and also enable them to apply popular control algorithms such as PID in a closed loop dynamical system	
Engineering Mathematics for Advanced Studies	3-0-0-6	To introduce mathematical methods.	PC
Introduction to Programming and Modeling Laboratory	1.5-0-3-6	To introduce students to programming, analysis tools and software, Operating systems, R and Python programming, etc.	PC
Research Methodology	1-0-0-2	To introduce students to literature review, report preparations and seminar presentation to a large audience as seminar on research topics in Mechanical Engineering	PC

*Allocate MTech Technical Project Supervisor at the end of 1st semester

2nd Semester: 32 Credits

Course Name	L-T-P-C	Objective of the course	Course Category
Experimental Theory & Laboratory	1-0-3-5	To introduce students with experimental analysis, data analysis, measurement tools and to introduce basic and advance level experiments in Design Engineering	PC
Design of Mechanical Transmission Systems	3-0-0-6	With a review of fundamentals of a typical design course, the course discusses in detail the aspects related to transmission of power in gears, brake, clutch, belt drives, and bearings	PC
Mechatronics and Robotics	2-0-2-6	This course introduces concepts spanning mechatronics such as sensors/actuators and its use in control of robotic manipulators. Robotics relevant topics such as navigation and	PC

		vision systems are al;so included to allow students to work on hands-on course projects.	
Elective I	3-0-0-6	To give a choice to the student to choose postgraduate level course within Design stream offered electives	PE
Elective II	3-0-0-6	To give a choice to the student to choose postgraduate level course within Design stream offered electives	PE
Practicum	0-0-0-3	Presentation to a large audience as seminar on topics in Mechanical Engineering	PC

Out of two Departmental Electives for the PG students, maximum one UG level departmental course is allowed.

Semester – III: 32 Credits			Semester – IV: 32 Credits		
Course Name	L-T-P-C	Course Category	Course Name	L-T-P-C	Course Category
M.Tech. Project - I	0-8-16-32	IC	M.Tech. Project - II	0-8-16-32	IC

H.8.3 Programme Structure for M.Tech. in Manufacturing and Materials Engineering

Total credit requirement for the course completion: minimum **128 credits**
IC: Institute core = **64 credits**,
PC: Program core = **52 credits**,
PE: Program Electives = **12 credits**

1st semester:
- 6 core-courses = 32 credits prescribed program core (4 theory courses with 6 credits each, one core lab with 6 credits + Research Methodology with 2 credits)

2nd semester:
- 2 Core-courses (6 credits each) = 12 credits prescribed program core
- 2 Elective-courses (6 credits each)
- 1 Core-lab (5 credits)

- Research Practicum (3 credits)

3rd semester:
- MTech Technical Project work - Phase I (32 credits)

4th semester:
- MTech Technical Project work - Phase II (32 credits)

1st Semester: 32 Credits

Course Name	L-T-P-C	Objective of the course	Course Category
Fundamentals of Casting and Welding	3-0-0-6	To introduce and orient students to the concepts of solidification, casting and weld design, advancement in casting and welding.	PC
Physical and Mechanical Metallurgy	3-0-0-6	To understand relationships between composition, processing, microstructure, and physical and mechanical properties, behavior of metals and alloys subjected to applied forces	PC
CNC and Additive Manufacturing	3-0-0-6	To introduce computer numerical and mathematical concepts, additive manufacturing design and concepts.	PC
Engineering Mathematics for Advanced Studies	3-0-0-6	To make the mathematical foundations	PC
Introduction to Programming and Modeling Laboratory	1.5-0-3-6	To introduce students to programming, analysis tools and software, Operating systems, R and Python programming, etc.	PC
Research Methodology	0-0-3-2	To introduce students to literature review, report preparations and seminar presentation to a large audience as seminar on research topics in Mechanical Engineering	PC

*Allocate MTech Technical Project Supervisor at the end of 1ˢᵗ semester

2ⁿᵈ Semester : 32 Credits

Course Name	L-T-P-C	Objective of the course	Course Category
Experimental Theory & Laboratory	1-0-3-5	To introduce students with experimental analysis, data analysis, measurement tools and to introduce basic and advance level experiments in Manufacturing	PC
Modeling and Simulation in Materials and Manufacturing	2-1-0-6	To introduce different materials modeling and simulation techniques used at different time and length scales.	PC
Mechanics of Machining and Forming	3-0-0-6	To introduce and orient students to the concepts of tool design and mechanics of machining, forming, FLD design, advancement in machining and forming.	PC
Practicum	0-0-0-3	Presentation to a large audience as seminar on topics in Mechanical Engineering	PC
Elective I	3-0-0-6	To give a choice to the student to choose postgraduate level course	PE
Elective II	3-0-0-6	To give a choice to the student to choose postgraduate level course	PE

Out of two Departmental Electives for the PG students, maximum one UG level departmental course is allowed.

Semester – III: **32 Credits**			Semester – IV: **32 Credits**		
Course Name	L-T-P-C	Course Category	Course Name	L-T-P-C	Course Category

M.Tech. Project - I	0-8-16-32	IC	M.Tech. Project - II	0-8-16-32	IC

List of available PG electives

Advanced Finite Element Methods	Additive and Forming Manufacturing Processes
Advanced Mechanisms and Dynamics of Mechanical Systems	Additive Manufacturing and Material selection
Advanced Solid Mechanics	Advanced CAM
Applied Elasticity	CNC & Part Programming
Design and Manufacturing of composites	Hybrid Manufacturing Processes
Design of Mechanical Transmission Systems	Metal Forming and Plasticity
Design of Mechatronic Systems	Smart manufacturing and material selection
Dynamics and Control	Advanced Fluid Mechanics and Heat Transfer
Fatigue and Fracture Mechanics	Advanced Heat Transfer
Finite Element Analysis	Alternative Energy Sources for Transportation
Foundations of Dynamics	Battery Chemistry and Thermal Management
Fracture Mechanics	Boundary-layer and Aerodynamics
Fundamentals of Acoustics	Combustion and Fire Dynamics
Introduction to Statics and Dynamics	Compressible Flow and Gas Dynamics
Kinematics, Dynamics and Control of Mechanical System	Computational Gasdynamics
Linear Viscoelasticity	Convective Heat Transfer
Mechanical Vibrations	Design of Heat Exchangers
Mechanics of Composite Materials	Energy for Transportation
Mechatronics and Robotics	Experimental Methods in Thermal and Fluids Engineering
Modeling of Metal Plasticity: Discrete and Continuum approaches	Fire Safety Engineering
Nonlinear Oscillation	Functional Materials Manufacturing for Energy and Biomedical Applications
Nonlinear Solid Mechanics for Finite Element Method	Introduction to Turbulence and its Modelling
Satellite Attitude Dynamics and Control	Multiphase Flow
Tribology	Sustainable Energy for Transportation

Vehicle Dynamics	Turbomachinery Aerodynamics
	Viscous flows