

School of Mechanical and Materials Engineering

School of Mechanical and Materials Engineering invites applications for admissions in full-time or part-time M.Tech (Research) and full-time or part-time PhD programs in **Mechanical Engineering** domain for the semester commencing from February 2023.

Note: The School of Mechanical and Materials Engineering reserves the right to recruit/ not recruit for any of the advertised areas.

Research domain and eligibility for PhD Admissions:

Sl. No	Discipline	Minimum Qualifications	Research Domain (but not limited to)	Remark
1	Mechanical Design	B. Tech in Mechanical/ Aerospace Engineering + M. Tech in Machine Design / CAD / CAE/ Aerospace/ Applied Mechanics/ Biomedical Engineering or related areas + GATE qualified in Mechanical Engineering	<ul style="list-style-type: none"> ● Fracture and Fatigue ● Computational Solid Mechanics ● Composite Materials ● Structural health monitoring ● Smart Material / Structure ● Piezoelectric Energy Harvesting ● Finite Element Method ● Non-local elasticity ● Biomechanics ● Implant Design 	Select Machine Design under specialization
2	Fluid Thermal	B. Tech in Mechanical/Aerospace Engineering or related areas+ M. Tech in Fluid/Thermal Engineering or related areas + GATE qualified in Mechanical/Aerospace Engineering	<ul style="list-style-type: none"> ● Thermal Radiation ● Solar Radiation ● Interface capturing ● Entrainment dynamics ● Mesoscale simulations ● Snow avalanche dynamics ● Multiphase flows ● Granular flows ● Computational fluid dynamics ● Non-Newtonian fluids ● Alternative Fuels ● Energy Systems ● Pollution Control ● Biofluid Mechanics 	Select Thermal Engineering under specialization
3	Manufacturing	B.Tech in Mechanical/ Production/Materials/Metallurgy + M.Tech in Mechanical/ Production /	<ul style="list-style-type: none"> ● Additive Manufacturing ● Lightweight composites 	Select Manufacturing under

		Mechatronics/Manufacturing /CAD /Design/Materials/Metallurgy or related areas + GATE qualified in Mechanical/Metallurgy Engineering	<ul style="list-style-type: none"> ● Manufacturing of Polymer/Metal/Ceramic Composites ● Sustainable Biocomposites ● Recycling of Polymer Composites ● Surface Engineering ● Experimental Tribology ● Perovskite Solar Cells ● Solar Thermal ● Energy Storage ● Machine Learning/AI 	specialization;
4	Robotics	B.Tech in Mechanical/ Mechatronics/ Robotics + M.Tech in Machine Design/Applied Mechanics/Robotics and Control/Engineering Design /Ocean Engineering/Mechatronics + GATE qualified at least once in academic career	<ul style="list-style-type: none"> ● Marine robotics ● Bioinspired robots ● Hydrodynamics ● Dynamics and Control 	Select Robotics under specialization;

Candidates with B. Tech degree with exceptionally good academic record may apply for direct admission to regular full time PhD (Fellowship from the Institute) with following conditions:

- B.Tech/BE degree from Centrally Funded Technical Institutes (CFTIs) with a minimum CGPA of 7.5 on a 10.0 point scale (or equivalent).
- OR*
- B.Tech/BE degree from Non-Centrally Funded Technical Institutes (CFTIs) with valid GATE or other equivalent national exam qualification and CGPA of at least 7.5 on a 10.0 point scale (or equivalent).
- OR*
- B.Tech/BE degree and serving for two years or more in a reputed R&D organization and having a proven research record.

Applicants for admission to the Ph.D. programme shall be classified under any one of the following categories based on their eligibility and choices. Applicants must mention their admission category in the online application form.

- Regular Full Time PhD (Fellowship from the Institute)
- Regular Full Time PhD (Fellowship from CSIR/NET/ICCR/DAE)
- Regular Full Time PhD (Self Sponsored)
- Part Time PhD (Sponsored from Govt/Semi-Govt/National Research Lab/Industry/Public Sector/Reputed Private Sector)
- Part Time PhD (Faculty Employed in Academic Institute at J&K/ Himachal Pradesh)
- Part Time PhD (Staff Employed in IIT Mandi)

Sl. No	PhD Admission Category	Minimum Requirements as per admission category
1	Regular Full Time PhD (Fellowship from the Institute)	Candidates applying under regular full time category must have qualified GATE / JRF / NET or National Level Examinations conducted by MoE and its agencies and institutes such as IITs/CSIR/UGC/IISc/IISER etc. at least once in their academic career.
2	Regular Full Time PhD (Fellowship from CSIR/NET/ICCR /DAE)	The candidate must have a valid score card for availing the fellowship from the sponsored scheme. OR Candidates having documents proof for the financial support from CSIR/NET/ICCR/DAE etc.
3	Regular Full Time PhD (Self Sponsored)	The candidate must have at least two years of experience in the R&D section of reputed Industries / National Laboratories / IITs / NITs / as JRF/SRF/RA or equivalent. GATE/UGC/CSIR/NET score is waived as they will not get financial assistantship from the institute.
4	#Part Time PhD (Sponsored from Govt/Semi-Govt/National Research Lab/Industry/Public Sector/Reputed Private Sector)	Candidates applying under part time category (Sponsored from Govt/Semi-Govt/National Research Lab/Industry/Public Sector/Reputed Private Sector) must have full time employment experience of two years' in the R&D section of the sponsoring agency. The experience duration should be in continuity of their service. AND The sponsoring organization/Institution must have at least 5 years of its existence. The candidate must produce an NOC and sponsorship certificate from their employer. At the time of joining the programme, the selected candidate will have to produce a "Relieving Certificate" from his/her employer that he/she has been fully relieved from the normal duties to complete the course (and qualifier examination, if applicable) at IIT Mandi.
5	Part Time PhD (Faculty Employed in Academic Institute at J&K/ Himachal Pradesh)	The candidates must have 2 yrs of teaching experience with GATE/UGC/CSIR NET score. GATE/UGC/CSIR NET score is waived for those with 5 years of teaching experience. AND Candidates should have permission from the employer for pursuing the Ph.D. program with adequate leave of absence to complete the course work requirements.
6	Part Time PhD (Staff Employed in IIT Mandi)	Candidates applying under part time category PhD (Staff Employed in IIT Mandi) must have completed at least 3 years of service in IIT Mandi and possess NOC and support documents from their School Chairperson.

Scholar under this category may carry out part of his research work in their sponsoring agency under the supervision of a co-guide also employed in the same organization; and a guide at IIT Mandi.

Research domain and eligibility for M.Tech (Research) Admissions:

Sl. No	Discipline	Minimum Qualifications	Research Domain (but not limited to)	Remark
1	Mechanical Design	B. Tech in Mechanical Engineering + Valid GATE score in Mechanical Engineering	<ul style="list-style-type: none"> ● Fracture and Fatigue ● Computational Solid Mechanics ● Composite Materials ● Structural health monitoring ● Smart material / Structure 	Select Machine Design under specialization

			<ul style="list-style-type: none"> ● Piezoelectric Energy Harvesting ● Finite Element Method ● Non-local elasticity ● Biomechanics ● Implant Design 	
2	Fluid Thermal	B. Tech in Mechanical/Aerospace Engineering or related areas + Valid GATE score in Mechanical/Aerospace Engineering	<ul style="list-style-type: none"> ● Thermal Radiation ● Solar Radiation ● Interface capturing ● Entrainment dynamics ● Mesoscale simulations ● Computational fluid dynamics ● Non-Newtonian fluids ● Alternative Fuels ● Energy Systems ● Pollution Control 	Select Thermal Engineering under specialization
3	Manufacturing	B.Tech or BS in Mechanical/Production/ Aerospace/ Materials/ Biological Science/Physical Sciences /Metallurgy + Valid GATE score	<ul style="list-style-type: none"> ● Additive Manufacturing ● Microwave based Manufacturing ● Polymer/Metal/Ceramic Composites ● Sustainable Biocomposites ● Recycling of Polymer Composites ● Surface Engineering ● Experimental Tribology ● Perovskite Solar Cells ● Solar Thermal ● Energy Storage ● Machine Learning/AI 	Select Manufacturing under specialization;
4	Robotics	B.Tech in Mechanical or allied areas + Valid GATE score	<ul style="list-style-type: none"> ● Marine robotics ● Bioinspired robots ● Hydrodynamics ● Dynamics and Control 	Select Robotics under specialization;

Advertisement for admission to the M.Tech (Research) programme is open for the following categories:

- Regular Full Time M.Tech (Research) (Fellowship from the Institute)
- Part Time M.Tech (Research) (Sponsored from Govt/Semi-Govt/National Research Lab/Industry/Public Sector/Reputed Private Sector)
- Part Time M.Tech (Research) (Faculty Employed in Academic Institute at J&K/ Himachal Pradesh)

- Part Time M.Tech (Research) (Staff Employed in IIT Mandi)

Sl. No	M.Tech (Research) Admission Category	Minimum Requirements as per admission category
1	Regular Full Time M.Tech (Research) (Fellowship from the Institute)	Candidates applying under regular full time category must have a valid score card of the qualifying exam GATE / JRF / NET or National Level Examinations conducted by MoE and its agencies and institutes such as IITs/CSIR/UGC/IISc/IISER etc.
2	#Part Time M.Tech (Research) (Sponsored from Govt/Semi-Govt/National Research Lab/Industry/Public Sector/Reputed Private Sector)	Candidates applying under part time category (Sponsored from Govt/Semi-Govt/National Research Lab/Industry/Public Sector/Reputed Private Sector) must have at least two years of experience in the R&D section of the sponsoring agency. The experience duration should be in continuity of their service. AND They must produce an NOC and sponsorship certificate from their employer. At the time of joining the programme, the selected candidate will have to produce a "Relieving Certificate" from his/her employer that he/she has been fully relieved from the normal duties to complete the course (and qualifier examination, if applicable) at IIT Mandi.
3	Part Time M.Tech (Research) (Faculty Employed in Academic Institute at J&K/ Himachal Pradesh)	The candidates must have a minimum 2 yrs of teaching experience. AND Candidates should have permission from the employer for pursuing the M.Tech (Research) program with adequate leave of absence to complete the course work requirements.
4	Part Time M.Tech (Research) (Staff Employed in IIT Mandi)	Candidates applying under part time category M.Tech (Research) (Staff Employed in IIT Mandi) must have completed at least 2 years of service in IIT Mandi and possess NOC and support documents from their School Chairperson.

Scholar under this category may carry out part of his research work in their sponsoring agency under the supervision of a co-guide also employed in the same organization; and a guide at IIT Mandi.

Notes:

- Candidates applying under the **PART TIME CATEGORY** are encouraged to visit the faculty profile of the institute and identify the potential thesis guide at IIT Mandi. Written consent of the prospective guide is compulsorily to be obtained before applying. No application will be entertained/processed without it. Candidates are advised to contact faculty members in their area of interest, discuss the proposed research plan and write up a brief research proposal. Preparing a good proposal will require reading of some research papers. **Research Proposal should be of 2-5 pages in length and include references to the current literature. Candidate should submit their application for the Part Time Admission along with the research proposal and a certificate of sponsorship from their parent institute/organization to se_admissions@iitmandi.ac.in**
- **Foreign nationals** can only apply for regular full time PhD/ M.Tech (by Research). Foreign nationals with a degree from Indian universities will be treated on par with Indian national for admission purposes. The foreign nationals with foreign degrees must meet the minimum educational requirement equivalent to the Indian degrees in the relevant discipline as per the

current admission advertisement. The candidate should have acceptable score in TOEFL or equivalent unless the medium of instruction for qualifying degree in English.

- B. E./AMIE / Other Equivalent exams are considered as B. Tech.
- Candidates with B. Tech in branches / specializations other than specified in the dropdown list should select **others** and specify their **branch / specialization** in the text box provided.
- M. E. / M. S. (by Research) or other equivalent exams are considered as M. Tech.
- If you have your grade in CGPA/CPI, represent your CGPA/CPI out of 10.
- The eligibility criteria mentioned above is a minimum and the shortlisting committee(s) may use higher cut-off levels for shortlisting.
- **More details about eligibility and others regarding MTech (by Research)/ PhD can be found at http://www.iitmandi.ac.in/administration/files/new%20MS_PhD_Ordinance_and_Regulations.pdf**
- **The **First preference** shall be considered for shortlisting the received admission applications. Applicants are advised to fill the specialization preference carefully on OAS application portal.**
- **The School reserves the right to recruit/ not recruit for any of the advertised areas.**
- **The interview/test will be in hybrid (both online and offline) mode. The shortlisted candidates may share their preference for the mode of interview/test.**

Application Procedure

Candidates should apply through online only using the link: <http://oas.iitmandi.ac.in/admission>

Application Fee for M.Tech (by Research) / Ph.D. Admission:

Category	Amount in ₹
General/EWS/OBC/OBC (NCL)/Transgender/Foreign Nationals	200
Women/SC/ST/PD	100

Mode of Payment: SBI Collect Portal.

Applicant should submit fee on SBI collect portal of the IIT Mandi (<https://www.onlinesbi.com/sbicollect/icollecthome.htm>); and submit generated transaction number to the OAS admission application portal. One application fee is valid for the single application. The application fee is non-refundable.

For any queries please contact: se_admissions@iitmandi.ac.in

For any technical issues please contact oassupport@iitmandi.ac.in

Important Notice: Candidates without specialization in the M. Tech should mention the subjects taken by them in the subject column of the qualifications. Alternatively, they can specify the specialization close to their course of study or project. They should also mention the M. Tech thesis title in the additional information column. Candidates, who do not mention the subject names, may not be shortlisted for written test / interview even if they fulfill the shortlisting criterion. There may not be any communication in this regard.

Important Dates:

Starting date for filling Online Application: 26 September 2022

Last date for filling Online Application: 25 October 2022

Interview and Test: 30 November – 02 December, 2022 (Both Online and Offline)

Declaration of Shortlisted Candidates & Written test and/or Interview Dates: Published on IIT Mandi website. Shortlisted candidates will be informed by email.