Department of Materials Science and Metallurgical Engineering
IIT Hyderabad

Online M.Tech Program: Industrial Metallurgy

About the program

- This online M.Tech program is specially designed for working professionals to help them master the essentials of industrial metallurgy.
- The program caters to the needs of working professionals in metallurgical, materials, and manufacturing industries who wish to upskill or reskill themselves.
- The program covers both fundamental scientific principles and applied engineering aspects. The program offers great flexibility in terms of courses (see Curriculum details). It includes a wide range of elective courses spanning across fundamental metallurgical principles, materials processing, materials testing and characterization, new-generation high-performance alloys, and computational materials engineering.
- There is no residential requirement at IIT Hyderabad. All the courses will be taught in online mode (4 PM to 7 PM on working days and 9 AM to 7 PM over the weekends). Students can learn at their own pace and complete the program in 4 years from the date of admission.
- This online M.Tech program is equivalent, in all respects, to the regular M.Tech programs offered by IIT Hyderabad.

Eligibility and Admission

- Working professionals in public- and private-sector industries, R&D labs, and academic institutions with more than two years of work experience and a first-class bachelor's degree (BTech, BE or equivalent) in metallurgical engineering, metallurgical and materials engineering, materials science and engineering, mechanical engineering, manufacturing engineering, production engineering, industrial engineering, chemical engineering, and allied disciplines are eligible to apply.

- Admission will be based on satisfactory performance in written test/interview. GATE score is not required. Applicants are required to submit experience and no-objection certificates at the time of written test/interview.

Fee structure

Category	***Fee details#***
Non-government organizations	- Rs. 25,000/- per course credit - Rs. 12,500/- per thesis credit - Semester fee: Rs.15,000/- per semester*
Government organizations	- Rs. 12,500/- per course or thesis credit - Semester fee: Rs.15,000/- per semester*
IITH alumni	

Fee shall be paid by the candidate and there is no financial obligation to the employer.
* Semester fee must be paid throughout the program duration to keep the registration alive.

Other details

- *Credit requirement:* Candidates shall earn a total of 48 credits within 4 years from the date of admission into the program. Candidates shall complete the course credits (24 credits) within the first 3 years.
- *Thesis work:* Candidates shall complete the course work in full (24 credits) with a minimum CGPA of 7.5 to be eligible for undertaking the dissertation work. Dissertation work (24

credits) shall be completed in one year from the date of commencement of the same. Candidates are required to carry out their dissertation work using the available facilities/infrastructure in their parent organizations. Every candidate is required to identify a guide from IITH and a co-guide from his/her parent organization.

- *Exit option:* After successful completion of the course work in full (24 credits), candidates may opt to leave the program and obtain an Executive MTech Degree.

How to apply

- Applications shall be submitted online on or before 07.07.2021. Please visit https://www.iith.ac.in/mtechadmissions/home.jsp for complete information on how to apply.

Curriculum

Course #	Title	Credits
Course Work (24 credits)#		
Basket 1 (Fundamentals of metallurgy)		
MS5050	Advanced physical metallurgy	3
MS5500	Deformation behaviour of materials	3
MS5510	Applied phase equilibria and phase transformations	3
MS5520	Engineering alloys	2
MS5530	Corrosion science and engineering	3
MS5540	Diffusion analysis in materials engineering	3
MS5330	Role of microstructure in materials selection	2
Basket 2 (Materials processing)		
MS5550	Welding processes	3
MS5470	Metallurgy of welding and additive manufacturing	3
MS5040	Thermomechanical processing of materials	3
MS5560	Casting and solidification	3
MS5130	Powder metallurgy manufacturing	3
MS5460	Metal additive manufacturing	3
Basket 3 (Materials testing and characterization)		
MS5570	Structure and characterization of materials	3
MS5020	Electron microscopy	3
MS5280	Wear and tribology of materials	1
MS5580	Non-destructive testing of materials	2
MS5590	Metallurgical failure analysis	2
Basket 4 (Advanced materials)		
MS5100	Composite materials	3
MS5450	High entropy materials	1
MS5300	Microstructural design for advanced manufacturing	3
Basket 5 (Computational materials engineering)		
MS5140	Introduction to computational methods in materials science	3
MS5480	Machine learning and data analytics in materials science	3
Dissertation Work (24 credits)		
MS5015	Thesis – Stage I	12
MS5025	Thesis – Stage II	12
Total credits		**48**

All are elective courses. Courses amounting to a total of 24 credits may be taken from any of the five elective baskets.