भारतीय प्रौद्योगिकी संस्थान हैदराबाद
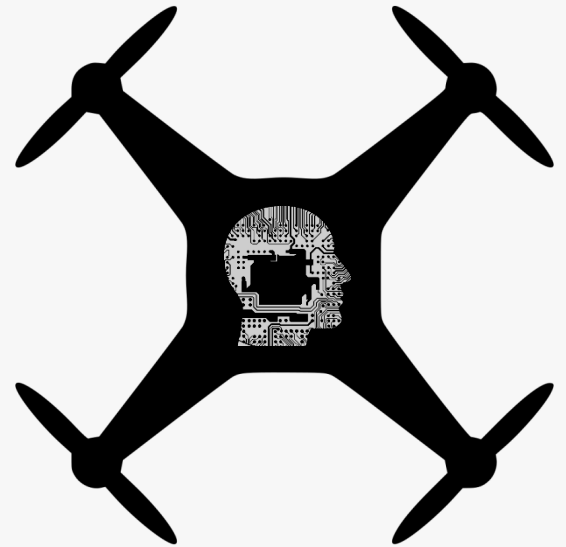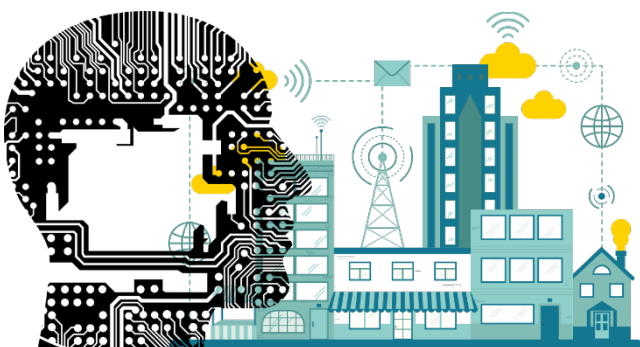**Indian Institute of Technology Hyderabad**

M.Tech in Smart Mobility

IIT Hyderabad and DST-NM-ICPS Technology Innovation Hub (TIH) on Autonomous Navigation and Data Acquisition Systems (UAVs, RoVs) Jointly offers 2 Year M. Tech program on *Smart Mobility*.

Departments Involved

- **Artificial intelligence**
- **Civil Engineering**
- **Computer Science Engineering**
- **Design**
- **Electrical Engineering**
- **Mathematics**
- **Mechanical and Aerospace Engineering**

Eligibility Criteria

Candidate must have earned B.Tech/B.E/M.Sc/Equivalent Degree in any discipline, and have a valid GATE score in AE/AR/CE/CS/EC/EE/IN/MA/ME/PI/XE/ST. The applicant must have already completed the degree or should be in the final year of respective studies. In the latter, it would be assumed that the candidate will be able to complete the degree by the time of M. Tech admission.

Curriculum

M.Tech program has the following components
- Theory courses
- Lab courses
- M.Tech Thesis

Theory courses comprises of compulsory core courses and a wide range of elective courses.

How to Apply

There are 3 modes of admissions.

- **TIH Supported students:** These students should either be admitted based on GATE score or if they have a BTech from an IIT, they should have 8.0 or more CGPA**.**
- **Govt Lab/Industry Sponsored students:** These candidates should have first class BTech with a minimum experience of 2 years in any Public industry or any Government research lab. They will be selected based on a written test and/or an interview.
- **Self-Sponsored students:** These students should have first class BTech and will be selected based on a written test and/or an interview.

For more details on M.Tech admissions, please visit https://iith.ac.in/mtechadmissions/

Contact us

For details on curriculum, please visit
https://www.iith.ac.in/news/2020/04/20/New-MTech-program-on-Smart-Mobility/
In case of any queries, please write to sm.admissions@iith.ac.in

M.Tech in Smart Mobility (Effective from August 2020)
Jointly Offered by
IIT Hyderabad and DST: NM-ICPS Technology Innovation Hub (TIH) on Autonomous Navigation and Data Acquisition Systems (UAVs, RoVs)

Multiple departments are involved – AI, CE, CS, Design, EE, Maths, MAE

Eligibility Criteria:
Candidate must have earned B.Tech/B.E/M.Sc/Equivalent Degree in any discipline, and have a valid GATE score in AE/AR/CE/CS/EC/EE/IN/MA/ME/PI/XE/ST. The applicant must have already completed the degree or should be in the final year of respective studies. In the latter, it would be assumed that the candidate will be able to complete the degree by the time of M.Tech admission.

Type of Students:
1. **TIH Supported students:** These students should either be admitted based on GATE score or if they have a BTech from an IIT, they should have 8.0 or more CGPA.
2. **Govt Lab/Industry Sponsored students:** These candidates should have first class BTech with a minimum experience of 2 years in any Public industry or any Government research lab. They will be selected based on a written test and/or an interview.
3. **Self-Sponsored students:** These students should have first class BTech and will be selected based on a written test and/or an interview.

Total Number of Credits = 50

Summary	
Core Theory	9
Core Lab	3
Core Elective	12
Common Courses (English communications and Industrial Lectures)	2
Thesis	24
Total	50

2 Year M.Tech in Smart Mobility Curriculum (Effective from August 2020)

Semester I		
Course title	**course code**	**credits**
Basics of Machine Learning	SMxxxx	3
Autonomous Navigation	SMxxxx	1
Stochastic Processes	SMxxxx	1
Internet of Things (IoT)	SMxxxx	1
Intelligent Transportation Systems	SMxxxx	3
Programming & Data Structures Lab	SMxxxx	1
Additive Manufacturing Lab	SMxxxx	1
Automation Lab	SMxxxx	1
English Communication		1

	Total		13

Semester II		
Course title	**course code**	**credits**
Core Electives (at least one should be 3 Credit Course)	SMxxxx	12
Industrial Lectures	SMxxxx	1
	Total	13

Summer Semester		
Course title	**course code**	**credits**
Thesis Stage I	SMxxxx	2

Semester III		
Course title	**course code**	**credits**
Thesis Stage II	SMxxxx	10

Semester IV		
Course title	**course code**	**credits**
Thesis Stage III	SMxxxx	12

Important Notes:
- Selection of thesis guides will be done at the end of first semester.
- At least 2 faculty (from different departments associated with the program and TIH) will have to guide a student selected under this program.
- Core Electives will be taken by the student in the 2nd semester in consultation with the guides.

Core Electives		
Highway Geometric Design	CE6XXX	2
Traffic Engineering	CE6XXX	2
Transportation Planning	CE6XXX	1
Traffic Design and Studio	CE6XXX	2
Mobilities, Cities and Environment	CC5520	2
Intelligent Transportation Systems (Elective)	CE6XXX	2
Mathematical Methods in Civil Engineering	CE 6XXX	2
Soft Computing Lab Civil Engineering	CE6511	2
Remote Sensing & GIS Applications to Civil Engineering	CE6610	3
Environmental Impact Assessment	CE4510	2
Mathematical Methods in Civil Engineering	CE 6XXX	2
Scaling to Big Data	CS6550	3
Soft Computing Lab Civil Engineering	CE6511	2

Course	Code	Credits
Remote Sensing & GIS Applications to Civil Engineering	CE6610	3
Wireless Networks & Security	CS5553	3
Topics in Wireless Networks	CS6260	3
Approximation Algorithms	CS5200	3
Deep Learning	CSxxx	3
Video Content Analysis	CS6140	3
Computer Networks	CSxxxx	3
Mobility Design	Design	
Design for Developments	Design	
Urban Design	Design	
Fuzzy Logic Connectives: Theory And Applications	MA6040	3
Design of EV	MEXXXX	2
vehicle dynamics	MEXXXX	3
dynamics and vibrations	MEXXXX	3
Science of measurement systems	MEXXXX	2
Sensors for Autonomous Navigation	EE6xxxx	2
Drones and Applications	EE6xxxx	2
Stochastic Processes	EExxxx	1
Classical Control Techniques for MIMO system	EExxxx	1
Optimization	EExxxx	1
State feedback control	Eexxxx	2
Statistical Learning Theory	EE6327	3
Queuing Theory	EE6640	2
Game Theory	EE5720	1
Wireless Sensor Networks	EExxxx	3
Probability and Random Variables	EExxxx	2