

M.Tech in Medical Device Innovation

Program Coordinator: Renu John (BME)

Partnering Centers/Institute

1. Foundation for Center for Healthcare Entrepreneurship (CfHE)
2. Asian Institute of Gastroenterology (AIG) Hospitals

Participating Departments: BME, EE

Curriculum

	<i>Core Courses</i>	Credit
	Semester 1 (12 Credits)	
BM 6246	Design thinking	2
BM 5520	Physio-Anatomy and Patho-physiology of Diseases	3
BM 6193	3-D Rapid Prototyping and modelling	3
BM 5023	Biomedical Devices	2
BM 6258	Clinical Immersion	2
	Semester 2 (12 Credits)	
	Technical Electives	4
BM 6256	Biodesign Process	2
BM 6268	Clinical immersion (Phase II)	4
BM 6345	Capstone Project Phase I	4
	Semester 3 (12 Credits)	
BM 6355	Capstone Project Phase II	12
	Semester 4 (12 Credits)	
Bm 6365	Capstone Project Phase III	8
BM 6311	Intellectual property and Rights	1
BM 6321	Biomedical Devices Safety and regulations	1
BM 6440	Biomedical Devices Standards	1
BM 6316	Business Plan and Entrepreneurship	1
	English for communications	1
	Research and technical skills	1
	Industry Lectures	P/F
	Total	50

Preamble:

IIT Hyderabad along with the Center for Healthcare Entrepreneurship (CfHE) and Asian Institute of Gastroenterology (AIG) Hyderabad is introducing a course specifically considering the need of innovative medical devices for patients and the need of Indian industry orientation to medical devices. The Program, **MTech in Medical Device Innovation (MDI)**, is intended for candidates, who passionately feel for finding innovative solutions for the problems faced by current health industry. The enrolled students will be trained for finding problem statements in health industry; discuss the solutions among engineers, doctors and designers; and come up with a solution to fulfill the degree requirements.

Eligibility:

A structured hands-on project-based program, suitable for industry professionals or healthcare professionals. The students should be eligible with a degree of:

- BTech in any Engineering stream Eg. Biomedical, Electrical, Instrumentation, computer science, Biotechnology, Chemical, Mechanical, or Material Science or similar subject areas
- Undergraduate degree in Design (BDes or equivalent), Architecture Eng,
- MSc in any discipline
- MBBS, BAMS, BHMS, BDS

with a passion for improving the healthcare quality and conditions over the globe.

Candidates with industry experience of one year or more or with entrepreneurial inclination will be preferred and are encouraged to apply. MoE Fellowship is applicable only through GATE.

The Program:

This is a multifaceted experience from grass root innovation to product development, business plan and entrepreneurship. The program will be instructed in a structured and design-oriented manner with the help of experienced faculty, staff, and industry experts, serial entrepreneurs, and academic community.

Duration: 2 years with 50 credits

As part of their project credits, the teams made from the students, would undergo a complete design life cycle comprising of:

- Clinical immersions to identify problems,
- Validate the needs,
- Brainstorm on ways to address the needs
- Build technology prototypes
- Build business and IP management
- Deliver working proof of concept prototypes of their ideas

The working professionals from Industry and Hospitals can do the project components of 3rd and 4th semester in their respective working places. The capstone project component can be carried out by

1. Industry professionals in Industry;
2. Doctors in their working hospitals;
3. Others at IITH