Joint MTech Program in Photonics
August 2026

Background

- Unlock cutting-edge skills in precision engineering with our **Laser Courses** — this will pave way for high-demand careers in advanced manufacturing of lasers applied in aerospace, automotive, and medical device industries. Learn from industry experts, get hands-on experience with state-of-the-art laser systems, and become proficient in the design, programming, and operation of laser-based manufacturing processes. There exists **no such program which nurtures young talent in photonics towards entrepreneurship with active support from industry in India.**

- The major difference comes from the strong industrial networks that already exist to support the students in terms of industrial projects and recruitment thereafter.

- This program is critical and very timely particularly because, we hope to build this photonic ecosystem in India through this program with academia-industry partnership.

MTech-Photonics

Curriculum- 2026-27

Sem	Code	Name	Credit
1	PH5250	Introduction to Optics and Photonics	3
1	PH5490	Fiber optics	3
1	PH5510	Laser Engineering and Technology	3
1	EM5110	Techno entrepreneurship	3
1	PH	Industry lectures	1
Total			13

Sem	Code	Name	Credit
2	PH5421	Photonics lab	2
2	PH5XXX	Electives	10
2	LA	English Communication	1
Total			13

Sem	Code	Name	Credit
3		Thesis Project	12

Sem	Code	Name	Credit
4		Thesis Project	12

Total		Credits	48+2

Program starting year: August 2026

List of Electives:

Course Code	Course Name	Credits
PH5540	Ultrafast and Nonlinear Optics	3
PH5560	Quantum Technologies	3
PH5570	Plasma Optics	3
PH5580	Laser Based Particle Acceleration: Science & Technology	3
PH5590	Digital Imaging & Image Processing	3
PH5740	Fourier Optics	3
PH5760	Optoelectronics	3
PH5770	Optical Engineering: Fundamentals and Instrument Design	3
PH5480	Ultrafast Photonics: Femtosecond to Attosecond	3
PH5550	Nanophotonics and Plasmonics	3
PH5520	Biophotonics	3
PH5790	Terahertz devices and Applications	2
PH5710	Quantum Computing	2
PH5393	Machine learning for Physics	2

Who can join the program?

MoE Fellowship: B.Tech. (Engineering Physics /Electrical /Electronics and Instrumentation, Communication Engineering/ Mechanical Engineering/MSME) and/or M.Sc. (Physics/Applied Physics)/Electronics and related areas) degree. Valid GATE Score required in respective subjects. Selection will be based on GATE score

Self-Sponsored candidates: Candidates having BTech/BE in relevant field of Engineering and Technology with minimum CGPA of 7.0 or equivalent can apply. GATE score is not mandatory. This is a non-subsidized program, and no financial support is provided to the students. Admission is based on Written Test &/or Interview

For more information, please contact:

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Expected outcomes

- **Highly skilled workforce** to cater the current and future photonics research and development as well as industrial activities in India.

- Capability to work in photonics related companies as **an expert developer- and to continue to doctoral studies** in photonics

- **Sound conceptual and practical understanding** of basic and advanced photonic technologies.

- **Awareness** among young minds in India **about exciting opportunities** in optics and photonics.

- Vast exposure to **cutting-edge photonics research and applications**.

- **Industry-ready photonics technocrats** with high-tech innovation and problem-solving skills.

- Knowledge about creating **photonics/technology startups**.