

## **M.Sc. (Physics)-M.Tech. (Materials Engineering) Dual Degree Program**

### **1. Introduction**

Addressing present day technological challenges in the emerging areas of energy, water, security, defense, healthcare, space, etc. requires an inter-disciplinary approach, integrating scientific concepts with innovative engineering skills, towards problem solving. IIT Jodhpur is also committed to adopt this approach and has taken initiative to offer an M.Sc. (Physics)-M.Tech. (Materials Engineering) Dual Program which will meet the human resources needs of the country to address the technological challenges in the domain of Materials Engineering. Here, the M.Sc. Physics program emphasizes on fundamental aspects of physics and materials science and the Materials Engineering focuses on designing, processing, and controlling the materials structure to attain desired properties for small- and large-scale production of advanced materials, components and materials systems exhibiting planned performance.

The M.Sc. (Physics) - M.Tech. (Materials Engineering) program aims to produce professionals possessing adequate depth in subject knowledge in physics and materials and provide necessary experimental and computational skills to solve problems in a variety of domains in Materials Engineering. After the end of the dual-degree program, the graduates will have the necessary skills to solve Materials Engineering problems, based on scientific principles, for industrial needs and to carry out scientific research.

The outcomes of this dual degree program are:

- (i) To enable understanding of the current challenges of materials in different technological domains
- (ii) To Develop analytical, experimental and computational skills to provide solutions to materials related issues
- (iii) Design and development of advanced materials for futuristic technologies
- (iv) Systems' approach to integrate the designed and developed novel materials for realizing the technological prototypes for various industrial purposes

**Objective:** To provide science undergraduate students with in-depth knowledge of physics and materials engineering and train them to meet the skills necessary for industry, scientific research, and academia.

**Duration:** 4 years

**Eligibility:** JAM (Physics) qualified candidates will be considered as per the existing norms of M.Sc. programs.

**Assistantship:** Students with cumulative grade point average, CGPA, of 8.0 or more at the end of M.Sc. (Physics) program will be eligible for assistantship during the M.Tech. program as per the MHRD norms.

**Curriculum:** Students will follow M.Sc. (Physics) curriculum during the first two years. After completion of the two years M.Sc. (Physics) program, the students will be automatically enrolled for the M.Tech. (Materials Engineering) program. During the last two years, the students will follow the M.Tech. (Materials Engineering) curriculum. Both degrees will be awarded together to the candidate after the successful completion of both the programs.

The conceptual curricula for M.Sc. (Physics), and M.Tech. (Materials Engineering) are available on the following links.

1. M.Sc. (Physics): [http://iitj.ac.in/academics/index.php?id=acad\\_program&&prog=18](http://iitj.ac.in/academics/index.php?id=acad_program&&prog=18)  
(links will be updated soon)
2. M.Tech. (Materials Engineering):  
[http://iitj.ac.in/academics/index.php?id=acad\\_program&&prog=21](http://iitj.ac.in/academics/index.php?id=acad_program&&prog=21) (links will be updated soon)