

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

MATERIALS RESEARCH CENTRE

Semester. I

Course Code	Course Title	Type	Type	Credit (L-T-P)
21MST501	Design of Materials	Program Core	Theory	3 (3-0-0)
21MST502	Material Characterization Techniques	Program Core	Theory	3 (3-0-0)
21MST504	Synthesis and Properties of Materials	Program Core	Theory	3 (3-0-0)
21MSP503	Material synthesis and Characterization Lab	Program Core	Lab	3 (0-0-6)
21MST8xx	Elective I	Program Elective	Theory	3 (3-0-0)
21MST8xx	Elective II	Program Elective	Theory	3 (3-0-0)
Total semester credits				18

List of electives in semester -I (Any two)

21MST801	Biomaterials	Program Elective	Theory	3 (3-0-0)
21MST802	Ceramic Materials & Properties	Program Elective	Theory	3 (3-0-0)
21MST803	Colloids and Surfaces	Program Elective	Theory	3 (3-0-0)
21MST804	Computational Materials Engineering	Program Elective	Theory	3 (2-0-2)
21MST805	Introduction to Soft Materials	Program Elective	Theory	3 (3-0-0)
21MST806	Optoelectronic Materials and Devices	Program Elective	Theory	3 (3-0-0)
21MST807	Organic Electronics	Program Elective	Theory	3 (3-0-0)
21MST808	Polymer Science & Processing Technology	Program Elective	Theory	3 (3-0-0)
21MST809	Smart & Intelligent Materials	Program Elective	Theory	3 (3-0-0)
21MST810	Technology Transfer and Intellectual Property (IP) Commercialisation	Program Elective	Theory	3 (3-0-0)

Semester. II

S.No.	Course Code	Course Title	Course Category	Type	Credit (L-T-P)
1	21MST505	Compound Semiconducting Devices	Program Core	Theory	3 (3-0-0)
2	21MST506	Spectroscopic & Microscopic Techniques for Material Characterization	Program Core	Theory	3 (3-0-0)
3	21MST507	Thermodynamics and Kinetics of Materials	Program Core	Theory	3 (3-0-0)
4	21MST8xx	Elective III	Program Elective	Theory	3 (3-0-0)
5	21MST8xx	Elective IV	Program Elective	Theory	3 (3-0-0)
6	21MSP82x	Elective V	Program Elective	Lab	3 (0-0-6)
Total semester credits					18

List of electives in semester -II (Any two)

1	21MST811	Advanced ceramics	Program Elective	Theory	3 (3-0-0)
2	21MST812	Advanced Polymer Physics	Program Elective	Theory	3 (3-0-0)
3	21MST813	Degradation of Materials	Program Elective	Theory	3 (3-0-0)
4	21MST817	Energy Materials	Program Elective	Theory	3 (3-0-0)
5	21MST818	Material Processing & Microstructure Development	Program Elective	Theory	3 (3-0-0)
6	21MST819	Membrane Technology	Program Elective	Theory	3 (3-0-0)
7	21MST821	Nano Manufacturing	Program Elective	Theory	3 (3-0-0)
8	21MST822	Nanomaterials Technology	Program Elective	Theory	3 (3-0-0)
9	21MST823	Nanomechanics	Program Elective	Theory	3 (3-0-0)
10	21MST826	Thin films and Surface Engineering	Program Elective	Theory	3 (3-0-0)
List of elective labs (Any one)					
1	21MSP820	Microscopy Lab	Program Elective	Lab	3 (0-0-6)

2	21MSP824	Spectroscopy Lab	Program Elective	Lab	3 (0-0-6)
3	21MSP825	Thin Film fabrication & Characterization Lab	Program Elective	Lab	3 (0-0-6)

Semester. III

S.No.	Course Code	Course Title	Course Category	Type	Credit (L-T-P)
1	21MSS602	Seminar	Program Core	-	3 (0-0-6)
2	21MSD601	Dissertation - I	Program Core	-	9 (0-0-18)
Total semester credits					12

Semester. IV

S.No.	Course Code	Course Title	Course Category	Type	Credit (L-T-P)
1	21MSD603	Dissertation - II	Program Core	-	12 (0-0-24)
Total semester credits					12
Total credits of all semesters					60