

14 | Department of Materials Science and Metallurgical Engineering

14.1 MTech 2Year

Code	Cred.	Course Title
Semester 1		
MS5010	3	Properties of Materials
MS5030	3	Materials Synthesis and Characterization
MS5050	3	Advanced Physical Metallurgy
MS5611	2	Materials Synthesis And Characterization Lab
MS5XXX	3	Core Elective
Semester 2		
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
XXXXXXX	3	Free Elective
MS5621	2	Materials Lab
Semester 3		
MS5715	12	Thesis: Stage I
Semester 4		
MS5725	12	Thesis: Stage II
List of Electives		
MS5020	3	Electron Microscopy
MS5040	3	Thermomechanical Processing of Materials
MS5080	3	Thin Films Technology
MS5090	3	Advanced Materials Synthesis
MS5100	3	Composite Materials
MS5110	3	Scientific Writing and Ethics in Research
MS5120	3	Materials for Green Energy
MS5130	3	Powder Metallurgy Manufacturing
MS5140	3	Introduction to Computational Methods in Materials Science
MS5150	3	Biomaterials- Materials in Medicine
MS5160	3	Polymer Science and Engineering
MS5170	3	Thermodynamics and Kinetics of Materials
MS5180	3	Applications of Electrochemistry in Materials Science and Engineering
MS5190	3	Soft Materials
MS5200	3	Phase Transformations
MS5210	1	Hierarchical Nanostructured Materials
MS5220	2	Nature Inspired Materials Engineering
MS5230	1	Nature Inspired Materials Engineering for Mechanical Applications
MS5240	1	Nature Inspired Materials Engineering for Wettability, Optical Tunability
MS5250	1	Phase Stability in Alloy Design

Code	Cred.	Course Title
MS5270	3	2d Materials: Synthesis, Characterization and Applications
MS5280	1	Wear and Tribology of Materials
MS5290	3	Plasmonics: Fundamentals to Advanced Applications
MS5300	3	Microstructural Design for Advanced Manufacturing
MS5310	3	Functional Ceramics
MS5320	3	Solidification Processing

14.2 MTech ACM

Code	Cred.	Course Title
Semester 1		
MS5010	3	Properties of Materials
MS5030	3	Materials Synthesis and Characterization
MS5050	3	Advanced Physical Metallurgy
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
Semester 2		
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
XXXXXXX	3	Free Elective
Summer		
MS5XXX	3	Core Elective/free Elective
MS5XXX	3	Core Elective/free Elective

14.3 MTech ACM Thesis

Code	Cred.	Course Title
Semester 1		
MS5010	3	Properties of Materials
MS5030	3	Materials Synthesis and Characterization
MS5050	3	Advanced Physical Metallurgy
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
Semester 2		
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
XXXXXXX	3	Free Elective
Semester 3		
MS5715	12	Thesis: Stage I
Semester 4		
MS5725	12	Thesis: Stage II

14.4 PhD

- PhD student should obtain 12 credits

<u>Code</u>	<u>Cred.</u>	<u>Course Title</u>
Semester 1		
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective
Semester 2		
MS5XXX	3	Core Elective
MS5XXX	3	Core Elective