

Intake:		2020 onwards		Specialization:		Materials Science and Engineering					
Details of the Curriculum				Stream:							
Module Code	Module Name	Category C/E/O	Time allocation [Hours/Week]		Credits offered		Norm		Evaluation %		
			Lecture	Lab / Tute	GPA	NGPA	GPA	NGPA	CA	WE	
Semester 1			Specialization requirement				15.0				
MA1014	Mathematics	C	5/2	1	3.0			15.0	0.0	20	80
CS1033	Programming Fundamentals	C	2	2	3.0					20	80
EE1040	Electrical Fundamentals	C	2	2/4	2.0					20	80
ME1033	Mechanics	C	2	2/4	2.0					20	80
CE1023	Fluid Mechanics	C	2	2/4	2.0					20	80
MT1023	Properties of Materials	C	2	2/4	2.0					20	80
EL1030	Language Skills Enhancement [S1 & S2]	C	0	2	1.0					100	0
			Total		15.0	0.0	15.0	0.0			
Semester 2			Specialization requirement				22.0				
MA1024	Methods of Mathematics	C	5/2	1	3.0			19.0		30	70
EL1030	Language Skills Enhancement [S1 & S2]	C	0	2	1.0					100	0
EN1803	Basic Electronics for Engineering Applications	C	2	2	3.0					40	60
CS2813	Visual Programming	C	1	2	2.0					60	40
ME1091	Engineering Drawing and Computer Aided Modelling	C	1	4	3.0					100	0
MT1070	Thermodynamics and Phase Equilibria	C	5/2	1	3.0					40	60
MT1080	Fundamentals of Materials Science and Engineering	C	4	0	4.0					40	60
MT1940	Fundamentals of Engineering Design and Workshop Practice	C	1	4		3.0		3.0	100	0	
			Total		19.0	3.0	19.0	3.0			
Semester 3			Specialization requirement				22.0				
EE2804	Applied Electricity	C	2	2	3.0			22	0	40	60
MA2014	Differential Equations	C	2	0	2.0					30	70
MA3024	Numerical Methods	C	2	0	2.0					30	70
MA2024	Calculus	C	2	0	2.0					30	70
MT2211	Mechanical Behaviour of Materials	C	3	2	4.0					40	60
MT2220	Ferrous Metals and Alloys	C	7/2	1	4.0					40	60
MT2021	Polymer Science and Technology	C	5/2	1	3.0					40	60
MT2053	Communication Skills	C	1	2	2.0					100	0
			Total		22.0	0	22	0			
Semester 4			Specialization requirement				23.0				
ME2833	Mechanics of Machines	C	3/2	2/2	2.0			23.0	0.0	30	70
ME2851	Fundamentals of Machine Elements Design	C	2	2	3.0					30	70
MA2034	Linear Algebra	C	2	0	2.0					30	70
MA3014	Applied Statistics	C	2	0	2.0					30	70
MT2181	Solid State Materials	C	7/2	1	4.0					40	60
MT2230	Kinetics of Materials	C	5/2	1	3.0					40	60
MT2171	Ceramic Engineering	C	7/2	1	4.0					40	60
MT3095	Polymer Engineering	C	5/2	1	3.0					40	60
			Total		23.0	0.0	23.0	0.0			
Semester 5			Specialization requirement				20.0				
HM-1	Humanities I	C			2.0		2.0	12.0	0.0	100	0
MT3880	Engineer & Society [S5 & S6]	C	0	2	1.0					100	0
ME3813	Machine Design	C	1	2	2.0					100	0
MT2075	Metal forming and Joining	C	3/2	1	2.0					40	60
MT3031	Degradation and Failure of Materials	C	5/2	1	3.0					40	60
MT3054	Characterization of Materials	C	7/2	1	4.0					40	60
MT3084	Latex Science and Technology	E	5/2	1	3.0					40	60
MT3060	Industrial Metallurgy	E	5/2	1	3.0					40	60
MT4284	Nanomaterials	E	5/2	1	3.0					40	60
MT3301	Electronic and Optical Device Engineering	E	5/2	1	3.0		6.0			40	60
MT3220	Instrumentation and Control Engineering in Materials Processing	E	5/2	1	3.0			40	60		
MT3331	Construction Materials	E	5/2	1	3.0			40	60		
			Total		32.0	0.0	20.0	0.0			

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Industrial Training		Specialization requirement		6.0			
MT3993	Industrial Training	C	0	0	6.0	6	100
Total		0.0		6.0		6	
Semester 6		Specialization requirement		8.0			
HM-2	Humanities II	C			2.0	2.0	100
MT4204	Research Project [S6, S7 & S8]	C	0	2	1.0	3.0	100
MT3880	Engineer & Society [S5 & S6]	C	1	2	2.0		100
MT3714	Extraction Metallurgy	E	5/2	1	3.0	3.0	40
MT3350	Materials Modelling	E	2	2	3.0		50
MT4761	Electro Ceramics	E	5/2	1	3.0		40
Total		14.0		0.0		8.0	
Semester 7		Specialization requirement		13.0			
MN4023	Engineering Economics	C	2	0	2.0	13.0	30
MT3201	Comprehensive Design Project	C	0	8	4.0		100
MT4204	Research Project [S6, S7 & S8]	C	0	4	2.0		100
MT4024	Total Quality Management	C	3/2	1	2.0		40
MT4130	Selection of Materials for Engineering Applications	C	5/2	1	3.0	0.0	40
MT4281	Surface Engineering and Tribology	E	5/2	1	3.0		40
MT4064	Industrial Polymer Process Engineering	E	5/2	1	3.0		40
MT4074	Design and Fabrication of Polymer Products	E	5/2	1	3.0		40
MT4744	Composites	E	3/2	1	2.0		40
MT4781	Smart Materials and Devices	E	5/2	1	3.0		40
MT4262	Non-Ferrous Metals and Alloys	E	5/2	1	3.0		40
MT4810	Continuum Scale Numerical Simulation of Material Systems	E	5/2	1	3.0		40
Total		33.0		0.0		13.0	
Semester 8		Specialization requirement		9.0			
MN4043	Technology Management	C	2	0	2.0	9.0	30
MT4121	Cleaner Production	C	5/2	1	3.0		40
MT4204	Research Project [S6, S7 & S8]	C	0	8	4.0		100
MT4401	Magnetism and Magnetic Materials for Device Engineering	E	5/2	1	3.0	0.0	40
MT4084	Dies and Moulds for Polymer Processing	E	5/2	1	3.0		40
MT4430	Compounding and Testing of Polymers	E	5/2	1	3.0		40
MT4301	Non-Destructive Testing	E	3/2	1	2.0		40
MT4410	Advanced Materials Characterization	E	5/2	1	3.0		40
MT4420	Energy Materials	E	5/2	1	3.0		40
MT4774	Paint Technology	E	5/2	1	3.0		40
Total		29		0		9.0	
Grand Total		187.0		9.0		129.0	

Total credit requirement for the Specialization	138.0
Faculty/Specialization Electives beyond the specialization requirements [refer faculty electives table]*	12
TOTAL CREDIT REQUIREMENT FOR GRADUATION	150.0

Service modules										
Code	Module Name	Semester	Time allocation [Hours/Week]		Credits		Offered to		Evaluation %	
			Lecture	Lab / Tute	GPA	NGPA	ME	TT	CA	WE
MT1814	Engineering Materials		3/2	1	2		ME	TT	40	60