Revised Curriculum of B.Sc. Engineering Honours Degree Programme
Materials Science and Engineering Specialization
Department of Materials Science and Engineering

Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignments hrs/weeks	Credits		Norm		
					GPA	NGPA	GPA	NGPA	Total
Semester 1									
MA1012	Mathematics	C	3.0	1/1	3.0				
CS1032	Programming Fundamentals	C	2.0	3/1	3.0				
ME1032	Mechanics	C	2.0	3/4	2.0				
MT1022	Properties of Materials	C	2.0	3/4	2.0				
CE1022	Fluid Mechanics	C	2.0	3/4	2.0				
EE1012	Electrical Engineering	C	2.0	3/4	2.0				
EL1012	Language Skill Enhancement I	C	-	3/1	1.0		15.0	0.0	15.0
				Total for Semester 1	15.0	0.0	**15.0**	**0.0**	**15.0**
Term A									
EL1022	Language Skill Enhancement II	C	-	6/1	1.0				
MN1012	Engineering in Context	C	2.0	-		1.0			
MT1952	Engineering Design	C	2.0	3/1		1.5			
MT1962	Engineering Skill Development	C	1.0	6/1		1.5	1.0	4.0	5.0
DE1xx2	Non-Technical Elective I*	E			2.0		2.0	0.0	2.0
				Total for Term A	3.0	4.0	**3.0**	**4.0**	**7.0**
Semester 2									
MT1032	Principles of Materials Science & Engineering I	C	1.5	3/2	2.0				
EN1802	Basic Electronics	C	2.0	3/4	2.0				
MT1062	Polymer Science	C	1.5	3/2	2.0				
ME2122	Engineering Drawing and Computer Aided Modeling	C	2.0	3/1	3.0				
CS2812	Visual Programming	C	1.0	3/1	2.0				
MA1022	Methods of Mathematics	C	3.0	1/1	3.0				
MT1162	Metals and Alloys - I	C	1.5	3/2	2.0	0.0	16.0	0.0	16.0
				Total for Semester 2	16.0	0.0	**16.0**	**0.0**	**16.0**

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					GPA	NGPA	GPA	NGPA	Total
Semester 3									
MT2122	Principles of Materials Science & Engineering II	C	1.5	3/2	2.0				
ME1822	Basic Engineering Thermodynamics	C	1.5	3/2	2.0				
ME2012	Mechanics of Materials I	C	1.5	3/2	2.0				
MA2012	Differential Equations	C	2.0	-	2.0				
MA2022	Calculus	C	2.0	-	2.0				
MT2052	Communication Skills	C	1.5	3/2	2.0				
MT2042	Ceramic Science	C	1.5	3/2	2.0				
EE2802	Applied Electricity	C	1.5	3/2	2.0				
EN2852	Applied Electronics	C	1.5	3/2	2.0		18.0	0.0	18.0
				Total for Semester 3	18.0	0.0	**18.0**	**0.0**	**18.0**
Semester 4									
MT2142	Electrical and Magnetic Properties of Materials	C	2.5	3/2	3.0				
MT2072	Metal Forming and Machining	C	1.5	3/2	2.0				
MT 2032	Degradation of Materials	C	1.5	3/2	2.0				
MA2032	Linear Algebra	C	2.0	-	2.0				
MA 3012	Applied Statistics	C	2.0	-	2.0				
ME2832	Mechanics of Machines	C	1.5	3/2	2.0				
MT2152	Polymer Technology	C	1.5	3/2	2.0				
ME3062	Mechanics of Materials II	C	3.5	3/2	4.0				
ME2142	Machine Elements and Innovative Design	C	2.0	3/1	3.0		22.0	0.0	22.0
				Total for Semester 4	22.0	0.0	**22.0**	**0.0**	**22.0**

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Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignments hrs/weeks	Credits		Norm		
					GPA	NGPA	GPA	NGPA	Total
Semester 5									
MT 3052	Characterisation of Materials	C	2.0	3/2	2.5				
ME 3812	Machine Design	C	1.0	3/1	2.0				
MA 3022	Numerical Methods	C	2.0	-	2.0				
MN 3042	Business Economics and Financial Accounting	C	2.5	3/2	3.0				
MT 3902	Industrial Visits I	C				1.0	9.5	1.0	10.5
MT 3212	Metal Casting and Powder Metallurgy	E	1.5	3/2	2.0				
MT 3252	Ceramic Technology	E	2.5	3/2	3.0				
MT 3232	Polymer Engineering	E	2.5	3/2	3.0				
MT 3242	Joining of Materials	E	1.5	3/2	2.0		7.0	0.0	7.0
MT 3712	Extraction of Metals	O	1.5	3/2	2.0				
MN 3052	Industrial Management & Marketing	O	2.5	3/2	3.0				
ME 3012	Control Systems and Instrumentation	O	3.5	3/2	4.0				
MT 3722	Latex Science and Technology	O	1.5	3/2	2.0		5.0	0.0	5.0
				Total for Semester 5	30.5	1.0	**21.5**	**1.0**	**22.5**
Term B & Semester 6									
MT3992	Industrial Training	C	-	-		6.0	0.0	6.0	6.0
				Total for Term B & Semester 6	0.0	6.0	**0.0**	**6.0**	**6.0**

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Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignments hrs/weeks	Credits		Norm		
					GPA	NGPA	GPA	NGPA	Total
Semester 7									
MT 4022	Total Quality Management	C	1.5	3/2	2.0				
MT4202	Research Project**	C	-	-	2.0				
MT 4032	Optical and Electron Microscopy	C	1.5	3/2	2.0				
MT 4052	Mechanical Behaviour of Materials	C	1.5	3/2	2.0				
MT4902	Industrial Visits II	C	-	-		2.0	8.0	2.0	10.0
MT4352	Metals and Alloys - II	E	2.5	3/2	3.0				
MT4242	Advanced Ceramics	E	1.5	3/2	2.0				
MT4252	Design & Fabrication of Polymer Products	E	2.5	3/2	3.0		5.0	0.0	5.0
MT4712	Refractories & Kiln Technology	O	1.5	3/2	2.0				
MN4022	Engineering Economics	O	2.0	-	2.0				
MN4122	Human Resource Management and Industrial Relations	O	2.0	-	2.0				
MN4132	Consumer & Industrial Marketing	O	2.0	-	2.0				
MT4752	Industrial Polymer Process Engineering	O	2.0	3/1	3.0				
MT4762	Nano Materials	O	1.5	3/2	2.0		6.0	0.0	6.0
xx xxxx	Options offered by other departments	O					0.0	0.0	0.0
				Total for Semester 7	29.0	2.0	**19.0**	**2.0**	**21.0**
Term C									
MT4202	Research Project**	C	-	-	2.0		2.0	0.0	2.0
DE3xx2	Non-Technical Elective II*	E			2.0		2.0	0.0	2.0
				Total for Term C	4.0	0.0	**4.0**	**0.0**	**4.0**

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Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignments hrs/weeks	Credits		Norm		
					GPA	NGPA	GPA	NGPA	Total
Semester 8									
MT4202	Research Project**	C	-	-	4.0				
MN4042	Technology Management	C	1.5	3/2	2.0				
MT4112	Selection of Materials, Failure Analysis and Non Destructive Testing	C	2.0	3/2	2.5		8.5	0.0	8.5
MT4362	Heat treatments and strengthening Mechanisms of Metals	E	2.5	3/2	3.0				
MT4272	Smart Materials	E	1.5	3/2	2.0				
MT4372	Dies and Moulds for Polymer Processing	E	2.5	3/2	3.0				
MT4292	Polymer Process Control and Instrumentation	E	1.5	3/2	2.0				
MT4342	Cleaner Production	E	1.5	3/2	2.0		6.0	0.0	6.0
MA4022	Operational Research	O	3.0	-	3.0				
MT4722	Construction Materials	O	1.5	3/2	2.0				
MT4732	Bio Materials	O	1.5	3/2	2.0				
MT4742	Composites	O	1.5	3/2	2.0				
MT4772	Paint Technology	O	1.5	3/2	2.0				
MN4072	Small Business Management & Entrepreneurship	O	1.5	3/2	2.0		4.0	0.0	4.0
xx xxxx	Options offered by other departments	O					0.0	0.0	0.0
				Total for Semester 8	33.5	0.0	**18.5**	**0.0**	**18.5**
Total for the Programme					170.5	15.0	**137.0**	**13.0**	**150.0**

* - Weekly load of lectures and lab/Assignment hrs vary among different Non-technical modules.
** - A total of 8 credits for Research Project over Semester 7, Term C and Semester 8.

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Modules Offered to Other Fields of Specialization

Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignments hrs/weeks	Credits	
					GPA	NGPA
Semester 2						
MT2802	Materials Science	-	2.0	3/2	2.5	
MT1812	Engineering Materials	-	1.5	3/2	2.0	