

## B. Tech. Curriculum for Metallurgical and Materials Engineering

### SEMESTER - I

Subject Name	Type	Subject Code	L-T-P	Credit	Contact Hour
Calculus and Ordinary Differential Equations	Mathematics	MA1L003	3-1-0	4	4
Environmental Science, Technology and Management	Earth, Ocean and Climate Science	ID2L003	2-0-0	2	2
English for learning and Communication	Humanities, Social Science and Management	HS1L011	2-0-2	3	4
Basic Electrical and Electronics Engineering	Electrical Engineering	EE1L002	3-1-0	4	4
Basic Electrical and Electronics Engineering Laboratory	Electrical Engineering	EE1P002	0-0-3	2	3
Engineering Drawing and Graphics	Infrastructure	CE1P001	1-0-3	3	4
Chemistry	Chemistry	CY1L001	3-0-0	3	3
Chemistry Laboratory	Chemistry	CY1P001	0-0-3	2	3
Extra Academic Activity-1		ID1T001	0-0-3	1	-
<b>Total</b>				<b>24</b>	<b>27</b>

### SEMESTER - II

Subject Name	Type	Subject Code	L-T-P	Credit	Contact Hour
Linear Algebra and Complex Analysis	Mathematics	MA1L004	3-1-0	4	4
Introduction to Bio Science and Technology	Chemistry	ID2L002	2-0-0	2	2
Happiness and life skill	Humanities, Social Science and Management	ID1LXXX	1-0-0	1	1
Introduction to Bharatiya Knowledge Traditions	Humanities, Social Science and Management	ID1LXXX	2-0-0	2	2
Engineering Mechanics	Mechanical Sciences	ME1L001	3-1-0	4	4
Programming in C	Computer Science Engineering	CS1L002	2-0-2	3	4
Physics	Physics	PH1L001	3-0-0	3	3
Physics Laboratory	Physics	PH1P001	0-0-3	2	3
Extra Academic Activity-2		ID1T002	0-0-3	1	-
<b>Total</b>				<b>22</b>	<b>23</b>

### SEMESTER-III

Name of the Subject	Type	Subject Code	L-T-P	Credit	Contact Hour
	HSS 2			3	3
Metallurgical Thermodynamics	DC 1	MM2L001	3-0-0	3	3
Transport Phenomena	DC 2	MM2L002	3-0-0	3	3
Structure of Materials	DC 3	MM2L003	3-0-0	3	3
Metal Processing	SDC 3	MM2L004	3-0-0	3	3
Thermodynamics and Kinetics of Materials Laboratory	Lab-4 (DC 1)	MM2P001	0-0-3	2	3
Metal Processing Laboratory	Lab-5 (DC 2)	MM2P002	0-0-3	2	3
<b>Total</b>				<b>19</b>	<b>21</b>

**SEMESTER-IV**

Name of the Subject	Type	Subject Code	L-T-P	Credit	Contact Hour
	HSS 3			3	3
Physical Metallurgy	DC 4	MM2L005	3-0-0	3	3
Computational Materials Engineering	DC 5	MM2L006	3-0-2	4	5
Nonferrous Extractive Metallurgy	DC 6	MM2L007	3-0-0	3	3
Mineral Processing	SDC 4	MM2L008	2-0-2	3	4
Process Control and Instrumentation Laboratory	Lab-6 (DC 3)	MM2P003	0-0-3	2	3
Physical Metallurgy Laboratory	Lab-7 (DC 4)	MM2P004	0-0-3	2	3
OE	OE 1			3	3
<b>Total</b>				<b>23</b>	<b>27</b>

**SEMESTER-V**

Name of the Subject	Type	Subject Code	L-T-P	Credit	Contact Hour
	HSS 4			3	3
Corrosion and Surface Engineering	DC 7	MM3L001	2-0-2	3	4
Mechanical Properties of Materials	DC 8	MM3L002	3-0-0	3	3
Materials Characterization	SDC 5	MM3L003	3-0-0	3	3
Mechanical Testing Laboratory	Lab-8 (DC 5)	MM3P001	0-0-3	2	3
Materials Characterization Laboratory	Lab-9 (DC 6)	MM3P002	0-0-3	2	3
OE	OE 2			3	3
<b>Total</b>				<b>19</b>	<b>22</b>

**SEMESTER-VI**

Name of the Subject	Type	Subject Code	L-T-P	Credit	Contact Hour
Functional and Energy Materials	DC 9	MM3L004	3-0-0	3	3
Mechanical Working of Materials	DC 10	MM3L005	3-0-0	3	3
Iron and Steel Making	DC 11	MM3L006	3-0-0	3	3
Materials Recycling and Sustainability	DC 12	MM3L007	3-0-0	3	3
Powder Metallurgy Processing	SDC 6	MM3L008	3-0-0	3	3
Functional and Energy Materials Laboratory	Lab-10 (DC 9)	MM3P003	0-0-3	2	3
Powder Metallurgy Processing Laboratory	Lab-11 (DC 10)	MM3P004	0-0-3	2	3
<b>Total</b>				<b>19</b>	<b>21</b>

**SEMESTER-VII**

Name of the Subject	Type	Subject Code	L-T-P	Credit	Contact Hour
OE / DE	OE 3 / DE 1		3-0-0	3	3

OE / DE	OE 4 / DE 2		3-0-0	3	3
OE / DE	OE 5 / DE 3		3-0-0	3	3
Summer Internship	Internship- I	MM4T001	0-0-0	2	
BTP - 1	Project 1/DE/OE-A	MM4D001/ Subject from OE/DE Basket	0-0-0	3	
<b>Total</b>				<b>14</b>	<b>9</b>

**SEMESTER-VIII**

Name of the Subject	Type	Subject Code	L-T-P	Credit	Contact Hour
OE	OE 6 / DE 4			3	3
OE	OE 7 / DE 5			3	3
OE	OE 8 / DE 6			3	3
BTP- 2	Project 2 /DE/OE- B & C	MM4D002/2 subjects from OE/DE Basket	0-0-0	6	
<b>Total</b>				<b>15</b>	<b>9</b>

**SEMESTER-VIII FOR SIX MONTH INTERNSHIP STUDENTS**

Name of the Subject	Type	Subject Code	L-T-P	Credit	Contact Hour
Six-month internship	Internship-II	MM4T002	0-0-0	3	
OE/DE	OE 7 / DE 6			3	3
OE/DE	OE 8 / DE 7			3	3
BTP- 2	Project 2 /DE/OE- B & C	MM4D002/ 2 subjects from OE/DE Basket	0-0-0	6	
<b>Total</b>				<b>15</b>	<b>6</b>

**Total Credit: 155**