

DIPLOMA IN METALLURGICAL ENGINEERING

Programme Structure TO BE IMPLEMENTED FROM YEAR 2019-20 (180OB-OB1)

Course Code	Course Name	Course Type	Compulsory/Optional	Pre-Req -isite	Teaching Scheme		Total Credits	Examination Scheme								Total Marks	Internal/External	Class Declaration	Section		
								Theory				Practical/Oral									
								L	P	T	C	ESE	PA	ESE	PA						
								Min	Max	Min	Max	Min	Max	Min	Max						
LEVEL-1: Foundation Level Courses(All Compulsory)																					
HU1101	COMMUNICATION SKILLS I	Regular	Compulsory		2	0	1	3	16	40	NA	10	10	25	\$	10	25	100	Internal	No	No
HU1102	COMMUNICATION SKILLS II	Regular	Compulsory	HU1101	2	0	1	3	16	40	NA	10	NA	NA	20	50	100	-	No	No	
SC1101	APPLIED MATHEMATICS I	Regular	Compulsory		3	0	2	5	32	80	NA	20	NA	NA	10	25	125	-	No	No	
SC1102	APPLIED MATHEMATICS II	Regular	Compulsory	SC1101	3	0	2	5	32	80	NA	20	NA	NA	10	25	125	-	No	No	
SC1103	APPLIED PHYSICS	Regular	Compulsory		3	2	0	5	32	#80	NA	20	10	25	*	10	25	150	Internal	No	No
SC1106	APPLIED CHEMISTRY	Regular	Compulsory		3	2	0	5	32	#80	NA	20	10	25	*	10	25	150	Internal	No	No
6	Level Total				16	4	6	26	160	400		100	30	75	70	175	750				
LEVEL-2: Core Technology Courses A(Core Technology Courses- All Compulsory)																					
AM2101	ENGINEERING MECHANICS	Regular	Compulsory		4	2	0	6	32	80	NA	20	NA	NA	10	25	125	-	No	No	
CM2102	FUNDAMENTALS OF ICT	Regular	Compulsory		1	2	0	3	NA	NA	NA	NA	10	25	*	10	25	50	Internal	No	No
EE2102	ELECTRICAL TECHNOLOGY	Regular	Compulsory		3	2	0	5	32	80	NA	20	NA	NA	10	25	125	-	No	No	
ET2106	PRINCIPLES OF ELECTRONICS	Regular	Compulsory		3	2	0	5	32	80	NA	20	NA	NA	10	25	125	-	No	No	

ME2103	ENGINEERING DRAWING	Regular	Compulsory		2	4	0	6	32	80	NA	20	NA	NA	10	25	125	-	No	No
ME2106	ELEMENTS OF MECHANICAL ENGINEERING	Regular	Compulsory		3	2	0	5	32	80	NA	20	NA	NA	10	25	125	-	No	No
SC2106	ADVANCED PHYSICS	Regular	Compulsory		2	2	0	4	32	80	NA	20	NA	NA	10	25	125	-	No	No
WS2101	WORKSHOP PRACTICE	Regular	Compulsory		0	4	0	4	NA	NA	NA	NA	NA	NA	20	50	50	-	No	No
8				Sub Total	18	20	0	38	192	480		120	10	25	90	225	850			

LEVEL-2: Core Technology Courses B(Core Technology Courses- Any One)

MT2101	FURNACE TECHNOLOGY	Regular	Optional		3	1	0	4	32	80	NA	20	NA	NA	10	25	125	-	No	No
SC2101	APPLIED MATHEMATICS III	Regular	Optional	SC1102	3	0	1	4	32	80	NA	20	NA	NA	10	25	125	-	No	No
1				Sub Total	3	1	0	4	32	80		20	0	0	10	25	125			

Level Total 21 21 0 42 224 560 140 10 25 100 250 975

LEVEL-3: Basic Technology Courses(All Compulsory)

MT3101	BASIC METALLURGY	Regular	Compulsory		3	2	0	5	32	80	NA	20	20	50 \$	20	50	200	Internal	No	No
MT3102	MATERIAL TESTING & QUALITY ASSURANCE	Regular	Compulsory		3	4	0	7	32	80	NA	20	20	50 *	10	25	175	External	Yes	Yes
MT3103	METALLURGICAL ANALYSIS	Regular	Compulsory		2	2	0	4	16	40	NA	10	20	50 *	20	50	150	Internal	No	No
MT3104	IRON MAKING	Regular	Compulsory		3	0	0	3	32	80	NA	20	NA	NA	NA	NA	100	-	No	No
MT3105	STEEL MAKING	Regular	Compulsory		3	0	0	3	32	80	NA	20	NA	NA	NA	NA	100	-	No	No
MT3106	EXTRACTION OF NON FERROUS METALS	Regular	Compulsory		3	0	0	3	32	80	NA	20	NA	NA	NA	NA	100	-	No	No
6				Level Total	17	8	0	25	176	440		110	60	150	50	125	825			

LEVEL-4: Applied Technology Courses A(Auxiliary Courses - One Compulsory and Any One Optional)

AU4101	ENVIRONMENTAL SCIENCE	Regular	Compulsory	0	2	0	2	NA	NA	NA	NA	NA	NA	20	50	50	-	No	No
AU4102	RENEWABLE ENERGY TECHNOLOGIES	Regular	Optional	2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
AU4103	ENGINEERING ECONOMICS	Regular	Optional	2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
AU4104	ETHICAL SOURCES AND SUSTAINABILITY	Regular	Optional	2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
AU4105	DIGITAL MARKETING	Regular	Optional	0	2	0	2	NA	NA	NA	NA	10	25 \$	10	25	50	Internal	No	No
2			Sub Total	2	2	0	4	16	40		10	0	0	20	50	100			

LEVEL-4: Applied Technology Courses B(Management Level Courses - One Compulsory and Any One Optional)

MA4101	ENTREPRENEURSHIP AND STARTUPS	Regular	Compulsory	2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
MA4102	INDUSTRIAL ORGANISATION AND MANAGEMENT	Regular	Optional	2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
MA4103	MATERIALS MANAGEMENT	Regular	Optional	2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
MA4104	DISASTER MANAGEMENT	Regular	Optional	2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
MA4105	INTRODUCTION TO E-COMMERCE	Regular	Optional	2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
MA4106	INFORMATION MANAGEMENT	Regular	Optional	2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
2			Sub Total	4	0	0	4	32	80		20	0	0	0	0	100			

LEVEL-4: Applied Technology Courses C(Programme Specific Courses (All Compulsory))

MT4101	INDUSTRY INPLANT TRAINING	Inplant Training	Compulsory	LEVEL 1 AND LEVEL 2 COURSES TERM GRANT	0	6	0	6	NA	NA	NA	NA	20	50 \$	20	50	100	Internal	No	No
MT4102	PROJECT (IN-HOUSE / INDUSTRY)	Project Only	Compulsory	90 CREDITS AND LEVEL 1 PASSED	0	4	0	4	NA	NA	NA	NA	20	50 \$	20	50	100	External	Yes	No
MT4103	SEMINAR	Seminar Only	Compulsory	90 CREDITS AND LEVEL 1 PASSED	0	2	0	2	NA	NA	NA	NA	10	25 \$	10	25	50	Internal	Yes	No
MT4104	ELEMENTS OF PHYSICAL METALLURGY	Regular	Compulsory		4	4	0	8	32	80	NA	20	20	50 *	20	50	200	Internal	No	No
MT4105	FOUNDRY ENGINEERING	Regular	Compulsory		4	4	0	8	32	80	NA	20	20	50 \$	10	25	175	External	Yes	Yes
MT4106	POWDER METALLURGY	Regular	Compulsory		3	2	0	5	32	80	NA	20	20	50 \$	10	25	175	External	Yes	Yes
MT4107	METAL WORKING PROCESSES	Regular	Compulsory		4	2	0	6	32	80	NA	20	20	50 \$	10	25	175	External	Yes	Yes
MT4108	HEAT TREATMENT OF METALS & ALLOYS	Regular	Compulsory	MT4104	4	4	0	8	32	80	NA	20	20	50 *	10	25	175	External	Yes	Yes
8				Sub Total	19	28	0	47	160	400		100	150	375	110	275	1150			
				Level Total	25	30	0	55	208	520		130	150	375	130	325	1350			
LEVEL-5: Diversified Courses A(Diversified Courses- Any Two)																				
MT5101	METALLURGICAL DRAWING & DESIGN	Regular	Optional		4	4	0	8	32	80	NA	20	10	25 \$	10	25	150	External	Yes	Yes
MT5102	SELECTION OF MATERIALS & FAILURE ANALYSIS	Regular	Optional		4	4	0	8	32	80	NA	20	10	25 \$	10	25	150	External	Yes	Yes

MT5103	METAL JOINING PROCESSES	Regular	Optional		4	4	0	8	32	80	NA	20	10	25	\$	10	25	150	External	Yes	Yes
MT5104	COMPUTER APPLICATIONS IN METALLURGY	Regular	Optional		4	4	0	8	32	80	NA	20	10	25	\$	10	25	150	External	Yes	Yes
2				Sub Total	8	8	0	16	64	160		40	20	50		20	50	300			
LEVEL-5: Diversified Courses B(Diversified Courses- Any Two)																					
MT5105	ADVANCED PHYSICAL METALLURGY	Regular	Optional	MT4108	4	4	0	8	32	80	NA	20	10	25	\$	10	25	150	External	Yes	Yes
MT5106	MODERN FOUNDRY ENGINEERING	Regular	Optional	MT4105	4	4	0	8	32	80	NA	20	10	25	\$	10	25	150	External	Yes	Yes
MT5107	CORROSION & SURFACE PROTECTION	Regular	Optional		4	4	0	8	32	80	NA	20	10	25	\$	10	25	150	External	Yes	Yes
MT5108	NON METALLIC MATERIALS	Regular	Optional		4	4	0	8	32	80	NA	20	10	25	\$	10	25	150	External	Yes	Yes
2				Sub Total	8	8	0	16	64	160		40	20	50		20	50	300			
Level Total					16	16	0	32	128	320		80	40	100		40	100	600			
Total Credits					95	79	6	180	896	2240		560	290	725		390	975	4500			

Legends : L- Lecture, P- Practical, T- Tutorial, C- Credits ,ESE-End Semester Examination,PA- Progressive Assessment (Test I,II/TermWork) , *- Practical Exam, \$- Oral Exam, #- Online Examination ,Each Lecture/Practical period is of one clock hour;

Details About 180OB-OB1 Structure

Note: The figures at Sr. No. 3,4,5,9,10 may slightly vary depending upon optional courses offered by the programme.

1. Total Credits	180
2. Total No. Courses	37+0(Non Credit Courses)
3. No of Courses with Theory Examination	31
4. No. of Courses with Practical/Oral Examination	19
5. No. of Courses without Theory Examination	7+0(Non Credit Courses)
6. Total Marks	4500
7. Marks For Class Declaration	1625
8. Theory Paper Marks for Class Declaration	900
9. Theory:Practical Ratio as per Credits	53:47
10. Theory:Practical Ratio as per Marks	62:38
11. Class Declaration Courses	11