

**B. TECH. COURSE STRUCTURE OF METALLURGY & MATERIALS
ENGINEERING DEPARTMENT
(Effective from 2013 - 14)**

1ST YEAR

FIRST SEMESTER				SECOND SEMESTER			
Theory		Contact Hrs.	CR	Theory		Contact Hrs.	CR
Course Code	Subject	L .T .P		Course Code	Subject	L. T. P	
	Mathematics-I	3 - 1 - 0	4		Mathematics-II	3 - 1 - 0	4
	Physics/Chemistry	3 - 1 - 0	4		Chemistry/Physics	3 - 1 - 0	4
	Engg. Mechanics/ Programming & Data Str.	3 - 1 - 0	4		Programming & Data Str./ Engg. Mechanics	3 - 1 - 0	4
	Basic Elect. Engg/ Basic Electronics	3 - 1 - 0	4		Basic Electronics/ Basic Elect. Engg	3 - 1 - 0	4
	English for communication/ Env. Science & Engg.	3 - 1 - 0	4		Env. Science & Engg./ English for Communication	3 - 1 - 0	4
Sessionals				Sessionals			
	Physics Lab./Chemistry Lab.	0 - 0 - 3	2		Chemistry Lab./Physics Lab.	0 - 0 - 3	2
	Language Lab./ Programming Lab	0 - 0 - 3	2		Programming Lab./ Language Lab.	0 - 0 - 3	2
	Engineering Drawing Lab/ Workshop Practice	0 - 0 - 3	2		Workshop Practice/ Engineering Drawing Lab	0 - 0 - 3	2
	BEE Lab/BE Lab.	0 - 0 - 3	2		BE Lab/BEE Lab	0 - 0 - 3	2
	Extra Academic Activities (NCC/NSS/Yoga)	0 - 0 - 3	0		Extra Academic Activities (NCC/NSS/Yoga)	0 - 0 - 3	0
Total		15-5-15	28	Total		15-5-15	28

2ND YEAR

THIRD SEMESTER				FOURTH SEMESTER			
Theory		Contact Hrs.	CR	Theory		Contact Hrs.	CR
Course Code	Subject	L .T .P		Course Code	Subject	L. T. P	
	Mathematics -III	3 -1 - 0	4		Mathematics - IV	3 -1 - 0	4
	Engineering Economic & Costing	3 -1 - 0	4		Organizational Behavior	3 -1 - 0	4
	Introduction to Physical Metallurgy	3 -1 - 0	4		Mineral Engineering and Fuel Testing	3 -1 - 0	4
	Mechanics of Solids	3 -1 - 0	4		Basic Thermodynamics	3 -1 - 0	4
	Metallurgical Thermodynamics & Kinetics	3 -1 - 0	4		Object Oriented Programming	3 -1 - 0	4
SESSIONALS				SESSIONALS			
	Mechanics & Materials Testing Lab.	0 - 0 - 3	2		Mineral Processing Lab	0 - 0 - 6	4
	Physical Metallurgy Lab.	0 - 0 - 6	4		Fuel Testing Lab.	0 - 0 - 3	2
	Workshop Practice – II	0 - 0 - 3	2		Object Oriented Programming Lab.	0 - 0 - 3	2
	Total		28		Total		28

3RD YEAR

FIFTH SEMESTER				SIXTH SEMESTER			
Theory		Contact Hrs.	CR	Theory		Contact Hrs.	CR
Course Code	Subject	L.T.P.		Course Code	Subject	L.T.P.	
	Fundamentals of Fluid Mechanics	3-1-0	4		Iron Making	3-1-0	4
	Principles of Extractive Metallurgy	3-1-0	4		Refractories and Furnaces	3-1-0	4
	Deformation Behaviour of Materials	3-1-0	4		Phase Transformations and Heat Treatment	3-1-0	4
	Transport Phenomena	3-1-0	4		Non Ferrous Extractive Metallurgy	3-1-0	4
	Fabrication of Materials	3-1-0	4		Testing of Materials	3-1-0	4
	Sessional				Sessional		
	Materials Processing Lab.	0-0-6	4		Phase Transformations and Heat Treatment Lab.	0-0-6	4
	Process Metallurgy Lab.	0-0-6	4		Testing of Materials Lab.	0-0-3	2
					Computer Applications in Metallurgical Engg. Lab.	0-0-3	2
			28				28

4TH YEAR

SEVENTH SEMESTER				EIGHTH SEMESTER			
Theory		Contact Hrs.	CR	Theory		Contact Hrs.	CR
Course Code	Subject	L.T.P.		Course Code	Subject	L.T.P.	
	Steel Making	3-1-0	4		Corrosion and Degradation of Materials	3-1-0	4
	Characterization of Materials	3-1-0	4				
	Mechanical Working of Metallic Materials	3-1-0	4		Composite Materials	3-1-0	4
	Elective-I	3-1-0	4		Elective-III	3-1-0	4
	Elective-II	3-1-0	4		Elective-IV	3-1-0	4
	Sessional				Sessional		
	Materials Characterization Lab.	0-0-6	4		Comprehensive Viva-voce	-	2
	Seminar	0-0-3	2		Major Project	0-0-3	6
	Minor Project	0-0-3	2				
		15-5-12	28			12-4-3	24

Elective – I (Any one)				Elective – III (Any one)			
	(i) Joining of Materials (ii) Advanced Casting Processes (iii) Surface Engineering				(i) Alternative Routes of Iron Making (ii) Ferro-Alloys Technology (iii) Electrometallurgy		
Elective – II (Any One)				Elective – IV (Any one)			
	(i) Nano Materials (ii) Bio Materials (iii) Engineering Polymers				(i) Fracture Mechanics and Failure Analysis (ii) Materials for Advanced Applications (iii) Physics of Materials		