

BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI
NEW COURSE STRUCTURE - To be effective for B.Tech 2020-21
Based on CBCS system & OBE model
Recommended scheme of study
(For Mechanical Engineering Branch)

S.No	Semester of Study (Recommended)	Category of course	Course Code	Subjects	Mode of delivery & credits <i>L-Lecture; T-Tutorial; P-Practicals</i>			Total Credits <i>C-Credits</i>	
					L <i>(Periods/week)</i>	T <i>(Periods/week)</i>	P <i>(Periods/week)</i>		C
THEORY									
I.1	FIRST	FS Foundati on Sciences	MA103	Mathematics - I	3	1	0	4	
I.2			PH113	Physics	3	1	0	4	
I.3		GE General Engineer ing	EE101	Basic Electrical Engineering	3	1	0	4	
I.4			CS101	Programmin g for Problem Solving	3	1	0	4	
LABORATORIES									
I.6		FS & GE	PH114	Physics Lab	0	0	3	1.5	
I.7			CS102	Programmin g for Problem Solving Lab	0	0	3	1.5	
I.8			PE101	Workshop Practice	0	0	3	1.5	
I.9		MC Mandato ry Course	MC101/102/103/104	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA)	0	0	2	1	
TOTAL (Theory + Labs)								21.5	

THEORY									
II.1	SECOND	FS	MA107	Mathematics - II	3	1	0	4	
II.2			CH101	Chemistry	3	1	0	4	
II.3		GE	ME101	Basics of Mechanical Engineering	3	1	0	4	
II.4			EC101	Basics of Electronics and Communication Engineering	3	1	0	4	
		LABORATORIES							
II.6		FS	CH102	Chemistry Lab	0	0	3	1.5	
II.7		GE	EC102	Electronics and Communication Lab	0	0	3	1.5	
II.8			ME102	Engineering Graphics	0	0	4	2	
II.9		MC	MC105/106/107/108	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA)	0	0	2	1	
TOTAL (Theory + Labs)								22	
GRAND TOTAL FOR FIRST YEAR								43.5	
THEORY									
III.1	THIRD	FS	MA203	Numerical Methods	2	0	0	2	
III.2			CE101	Environmental Sciences	2	0	0	2	

III.3		ME201	Thermodynamics	3	0	0	3	
III.4		ME203	Fluid Mechanics & Hydraulic Machines	3	0	0	3	
III.5		PE213	Manufacturing Processes	3	0	0	3	
III.6		ME205	Strength of Materials	3	1	0	4	
III.7		PE214	Metallurgical and Materials Engineering	3	0	0	3	
		LABORATORIES						
III.8	GE	IT202	Basic IT Workshop	0	0	2	1	
III.9	FS	MA204	Numerical Methods Lab	0	0	2	1	
III.10	MC	MC201/202/203/204	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA)	0	0	2	1	
III.11	PC	ME202	Fluid Mechanics & Hydraulic Machines Lab	0	0	3	1.5	
III.12		ME204	Mechanical Engineering Lab I	0	0	3	1.5	
		TOTAL						26
	FOURTH	THEORY						
IV.1		FS	BE101	Biological Sciences	2	0	0	2

IV.2	GE	IT201	Basics of Intelligent Computing	3	0	0	3
IV.3	HSS	MT131	Understanding Harmony	3	0	0	3
IV.4	OE		OE1/MOOC	3	0	0	3
IV.5	PC	ME207	Kinematics & Dynamics of Machines	3	0	0	3
IV.6		ME209	Energy Conversion Systems	3	0	0	3
IV.7		ME211	Machine Design	3	0	0	3
LABORATORIES							
IV.8	GE	EE102	Electrical Engg. Lab	0	0	3	1.5
IV.9	MC	MC205/206/207/208	Choice of : NCC/NSS/PT & Games/ Creative Arts (CA)	0	0	2	1
IV.10	PC	ME208	Dynamics of Machines Lab	0	0	3	1.5
IV.11		PE205	Manufacturing Processes Lab	0	0	3	1.5
TOTAL							25.5
GRAND TOTAL FOR SECOND YEAR							51.5
	FIFTH	THEORY					

V.1		HSS	MT123	Business Communications	3	0	0	3	
V.2		OE		OE2/MOOC	3	0	0	3	
V.3		PC	ME301	I C Engines & Gas Turbines	3	0	0	3	
V.4	ME303		Mechanical Vibration	3	0	0	3		
V.5	ME315		Heat & Mass Transfer	3	0	0	3		
V.6		PE		Program Elective I	3	0	0	3	
		LABORATORIES							
V.7		PC	ME302	Heat Transfer Lab	0	0	3	1.5	
V.8			ME304	Internal Combustion Engine Lab	0	0	3	1.5	
V.9			ME306	Mechanical Engineering Lab II	0	0	2	1	
		TOTAL							22
		THEORY							
VI.1	SIXTH	PC	ME305	Automobile Engineering	3	0	0	3	
VI.2			ME307	Robotics Engineering	3	0	0	3	
VI.3		PE		Program Elective II	3	0	0	3	

VI.4			Program Elective III	3	0	0	3	
VI.5	OE		OE3/MOOC	3	0	0	3	
VI.6	MC	MC300	Summer training - compulsory				2	
LABORATORIES								
VI.7	PC	ME308	Robotics & Automation Lab	0	0	3	1.5	
VI.8		ME310	Automobile Engineering Lab	0	0	3	1.5	
TOTAL							20	
GRAND TOTAL FOR THIRD YEAR							42	
THEORY								
VII. 1	SEVENTH	OE		OE4/MOOC	3	0	0	3
VII. 2		PC	ME401	Refrigeration & Air Conditioning	3	0	0	3
VII. 4			ME409	Industrial Management	3	0	0	3
VII. 5			ME411	Computer Aided Design	3	0	0	3
		PE		Program Elective IV	3	0	0	3
VII. 6		MC	MT204	Constitution of India	2	0	0	NIL

		LABORATORIES						
VII. 7		PC	ME404	Refrigeration & Air Conditioning Lab	0	0	3	1.5
VII. 8			ME406	Computer Aided Design & Drafting Lab	0	0	3	1.5
		PROJ	ME400M	Minor Project	0	0	6	3
TOTAL								21
VIII .1	EIGHTH	PROJ	ME400	Research project / Industry Internship				10
GRAND TOTAL FOR FOURTH YEAR								31
GRAND TOTAL								168