

Established under the Sarala Birla University Act 2017 Govt. of Jharkhand as per Section 2(f) of UGC Act. 1956

CURRICULUM FOR

B.Tech

in Mechanical Engineering

(Based on UGC & AICTE- CBCS)

Effective from 2020-21

Definition of Credit							
1 Hr. Lectu	1 Hr. Lecture (L) Per Week 1 Credit						
1 Hr. Tutor	rial (T) Per Week	1 Credit					
1 Hr. Pract	ical (P) Per Week	0.5 Credit					
2 Hr. Pract	ical (P) Per Week	1 Credit					
	Course Code Definitions						
Course code	Defin	nitions					
BSC	Basic Scie	ence Course					
ESC	Engineering	Science Course					
HSMC	Humanities and Social Science	s including Management Course					
МС	Mandato	ory Course					
PCC-ME	Professiona	l Core Course					
PEC-ME	Professional E	Electives Course					
OEC-ME	Open Elec	tives Course					
MOOC'S	Massive Open Online Courses						
ME-P1	Project Stage-I						
ME-P2	Project Stage-II						
ME-P3	Project Stage-III						

	(Breakup of Credits)	
SI. No.	Category	Breakup of Credits
1	Humanities and Social Sciences including Management courses	12
2	Basic Science courses	23
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc	32
4	Professional core courses	57
5	Professional Elective courses relevant to chosen specialization/branch	35
6	Open subjects – Electives from other technical and /or emerging subjects	13
7	Project work, seminar and internship in industry or elsewhere	16
9	Mandatory Courses [Environmental Sciences, Induction Program, Indian Constitution, Essence of Indian Traditional Knowledge]	2
	Total Credits:	190

CREDITS DISTRIBUTION (SEMESTER-WISE AND COURSE-WISE)										
Semester	HSMC	BSC	ESC	PCC	PEC	OEC	PROJECT	MC	Total Credit Semester-wise	
1st	3	9.5	13	0	0	0	0	0	25.5	
2nd	3	9.5	12	0	0	0	0	2	26.5	
3rd	2	4	5	10	0	4	0	0	25	
4th	4	0	0	19	0	0	0	0	23	
5th	0	0	0	15	0	9	0	0	24	
6th	0	0	2	9	13	0	2	0	26	
7th	0	0	0	4	10	0	5	0	19	
8th	0	0	0	0	12	0	9	0	21	
Fotal Credit Course-wise	12	23	32	57	35	13	16	2	190	
			,	Total Cr	edit				190	

HUN	HUMANITIES & SOCIAL SCIENCES INCLUDING MANAGEMENT COURSES									
~~ ~~	Course]	Hours per wo	eek		Preferred			
SI. No.	Code	Course Title	L	Т	Р	Credits	Semester			
1	HSMC-101	English	3	0	0	3	Ι			
2	HSMC-102	Technical Communication	2	0	0	2	II			
3	HSMC-103	Technical Communication Lab	0	0	2	1	II			
4	HSMC-104	French Through Communicative Approach-I	2	0	0	2	III			
5	HSMC-105	French Through Communicative Approach-II	2	0	0	2	IV			
6	HSMC-106	Organisational Behaviour	2	0	0	2	IV			
			r	Fotal Cred	it:	12				

	BASIC SCIENCE COURSES											
SI. No.	Course Code	Course Title	Hours Per Week		Hours Per Week		Hours Per Week		Preferred Semester			
1	BSC-101	Chemistry	L 3	1	Р 0	4	Ι					
2	BSC-102	Chemistry Lab	0	0	3	1.5	Ι					
3	BSC-103	Physics	3	1	0	4	II					
4	BSC-104	Physics Lab	0	0	3	1.5	П					
5	BSC-105	Mathematics-I	3	1	0	4	Ι					
6	BSC-106	Mathematics-II	3	1	0	4	П					
7	BSC-107	Mathematics-III	3	1	0	4	III					
	Total Credit: 23											

	ENGINEERING SCIENCE COURSES										
SI.	Course	Course Title	le Hours Per Week			Credits	Preferred				
1	ESC-101	Basic Electrical & Electronics	L 3	T 1	Р 0	4	I				
2	ESC-102	Basic Electrical & Electronics Engineering Lab	0	0	2	1	Ι				
3	ESC-103	Introduction to Unix & C Programming	3	1	0	4	Ι				
4	ESC-104	Introduction to Unix & C Programming Lab	0	0	2	1	Ι				
5	ESC-105	Engineering Graphics & Design	1	0	4	3	Ι				
6	ESC-106	Electronic Devices	3	0	0	3	П				
7	ESC-107	Electronic Devices Lab	0	0	2	1	П				
8	ESC-108	Data Structure	3	1	0	4	П				
9	ESC-109	Data Structure Lab	0	0	2	1	II				
10	ESC-110	Workshop & Manufacturing Practices	1	0	4	3	Π				
11	ESC-111	Engineering Mechanics	3	1	0	4	III				
12	ESC-112	Programming using MATLAB	0	0	2	1	III				
13	ESC-113	Python Programming	1	0	2	2	VI				
			Τ	otal Cred	it	32					

	Professional Core Courses(Sem-III & IV) Branch: Mechanical Engineering (B.Tech)									
Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester					
1	PCC-ME-201	Thermodynamics	3:01:00	4	III/IV					
2	PCC-ME-202	Thermal Engineering Lab	0:00:02	1	III/IV					
3	PCC-ME-203	Engineering Metrology	3:01:00	4	III/IV					
4	PCC-ME-204	Production Technology	3:01:00	4	III/IV					
5	PCC-ME-205	Basic Mechanical Engineering Lab	0:00:02	1	III/IV					
6	PCC-ME-206	Material Engineering	3:01:00	4	III/IV					
7	PCC-ME-207	Material Testing Lab	0:00:02	1	III/IV					
8	PCC-ME-208	Strength of Material	3:01:00	4	III/IV					
9	PCC-ME-209	Strength of Material Lab	0:00:02	1	III/IV					
10	PCC-ME-210	Fluid Mechanics & Fluid Machine	3:01:00	4	III/IV					
11	PCC-ME-211	Fluid Mechanics Lab	0:00:02	1	III/IV					
12	PCC-ME-212	Applied Thermodynamics	3:01:00	4	III/IV					
			Total Credit:	33						

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Professional Core Courses(Sem-V & VI)

Branch: Mechanical Engineering (B.Tech)

Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester				
1	PCC-ME-301	Heat Transfer	3:01:00	4	V/VI				
2	PCC-ME-302	Heat Transfer Lab	0:00:02	1	V/VI				
3	PCC-ME-303	Manufacturing Process	3:01:00	4	V/VI				
4	PCC-ME-304	Production Practice Lab	0:00:02	1	V/VI				
5	PCC-ME-305	Theory of Machines	3:01:00	4	V/VI				
6	PCC-ME-306	Theory of Machines Lab	0:00:02	1	V/VI				
7	PCC-ME-307	Design of Machine Elements	3:01:00	4	V/VI				
8	PCC-ME-308	Design of Machine Elements Lab	0:00:02	1	V/VI				
9	PCC-ME-309	Dynamics of Machines	3:01:00	4	V/VI				
			Total Credit:	24					
	Professional Core Courses(Sem-VII& VIII)								
Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester				
1	PCC-ME-401	Automation in manufacturing	3:01:00	4	VII/VIII				

	Professional Elective Courses (Sem V & VI) Branch: Mechanical Engineering (B.Tech)									
SI. No.	Course Code	Course Title	Hrs./ Week L: T: P	Credits	Preferred Semester					
1	PEC-ME-301	Internal Combustion Engines	3:01:00	4	V/VI					
3	PEC-ME-302	Automobile Engineering	3:01:00	4	V/VI					
4	PEC-ME-303	Automobile Engineering Lab	0:00:02	1	V/VI					
5	PEC-ME-304	Operation Research	3:01:00	4	V/VI					
6	PEC-ME-305	Mechatronic Systems	3:01:00	4	V/VI					
7	PEC-ME-306	Microprocessors in Automation	3:01:00	4	V/VI					
8	PEC-ME-307	Composite Materials	3:01:00	4	V/VI					
	Profess	tional Elective Courses Branch: Mechanical Engineer	(Sem VII ing (B.Tech)	& VIII)					
SI.	Course Code	Course Title	Hrs./ Week		Preferred					
No.	Course Coue	Course Thie	L: T: P	Credits	Semester					
No. 1	PEC-ME-401	Refrigeration & Air Conditioning	L: T: P 3:01:00	4	Semester VII/VIII					
No. 1 2	PEC-ME-401 PEC-ME-402	Refrigeration & Air Conditioning Refrigeration & Air Conditioning Lab	L: T: P 3:01:00 0:00:02	4 1	Semester VII/VIII VII/VIII					
No. 1 2 3	PEC-ME-401 PEC-ME-402 PEC-ME-403	Refrigeration & Air Conditioning Refrigeration & Air Conditioning Lab Computer Aided Design	L: T: P 3:01:00 0:00:02 3:01:00	4 1 4	Semester VII/VIII VII/VIII VII/VIII					
No. 1 2 3 4	PEC-ME-401 PEC-ME-402 PEC-ME-403 PEC-ME-404	Refrigeration & Air Conditioning Refrigeration & Air Conditioning Lab Computer Aided Design Computer Aided Design Lab	L: T: P 3:01:00 0:00:02 3:01:00 0:00:02	4 1 4 1 4	Semester VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII					
No. 1 2 3 4 5	PEC-ME-401 PEC-ME-402 PEC-ME-403 PEC-ME-404 PEC-ME-405	Refrigeration & Air Conditioning Refrigeration & Air Conditioning Lab Computer Aided Design Computer Aided Design Lab Power Plant Engineering	L: T: P 3:01:00 0:00:02 3:01:00 0:00:02 3:01:00	Credits 4 1 4 1 4 1 4	Semester VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII					
No. 1 2 3 4 5 6	PEC-ME-401 PEC-ME-402 PEC-ME-403 PEC-ME-404 PEC-ME-405 PEC-ME-406	Refrigeration & Air Conditioning Refrigeration & Air Conditioning Lab Computer Aided Design Computer Aided Design Lab Power Plant Engineering Gas Dynamics & Jet Propulsion	L: T: P 3:01:00 0:00:02 3:01:00 0:00:02 3:01:00 3:01:00	Credits 4 1 4 1 4 1 4 1 4 1 4 1 4 4	Semester VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII					
No. 1 2 3 4 5 6 7	PEC-ME-401 PEC-ME-402 PEC-ME-403 PEC-ME-404 PEC-ME-405 PEC-ME-406 PEC-ME-407	Refrigeration & Air Conditioning Refrigeration & Air Conditioning Lab Computer Aided Design Computer Aided Design Lab Power Plant Engineering Gas Dynamics & Jet Propulsion Total Quality Management	L: T: P 3:01:00 0:00:02 3:01:00 0:00:02 3:01:00 3:01:00 3:01:00	Credits 4 1 4 1 4 1 4 1 4 1 4 1 4 4 4 4 4 4	Semester VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII VII/VIII					
No. 1 2 3 4 5 6 7 8	PEC-ME-401 PEC-ME-402 PEC-ME-403 PEC-ME-404 PEC-ME-405 PEC-ME-406 PEC-ME-407 PEC-ME-408	Course TrueRefrigeration & Air Conditioning LabComputer Aided DesignComputer Aided Design LabPower Plant EngineeringGas Dynamics & Jet PropulsionTotal Quality ManagementDesign of Transmission Systems	L: T: P 3:01:00 0:00:02 3:01:00 0:00:02 3:01:00 3:01:00 3:01:00 3:01:00	Credits 4 1 4 1 4 1 4 4 4 4 4 4 4 4 4 4 4 4 4	Semester VII/VIII					
No. 1 2 3 4 5 6 7 8 9	PEC-ME-401 PEC-ME-402 PEC-ME-403 PEC-ME-404 PEC-ME-405 PEC-ME-406 PEC-ME-407 PEC-ME-408	Course TrueRefrigeration & Air Conditioning LabRefrigeration & Air Conditioning LabComputer Aided DesignComputer Aided Design LabPower Plant EngineeringGas Dynamics & Jet PropulsionTotal Quality ManagementDesign of Transmission SystemsEnergy Conservation & Management	L: T: P 3:01:00 0:00:02 3:01:00 0:00:02 3:01:00 3:01:00 3:01:00 3:01:00	Credits 4 1 4 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Semester VII/VIII					
No. 1 2 3 4 5 6 7 8 9 10	PEC-ME-401 PEC-ME-402 PEC-ME-403 PEC-ME-404 PEC-ME-405 PEC-ME-406 PEC-ME-407 PEC-ME-408 PEC-ME-409 PEC-ME-410	Refrigeration & Air Conditioning LabRefrigeration & Air Conditioning LabComputer Aided DesignComputer Aided Design LabPower Plant EngineeringGas Dynamics & Jet PropulsionTotal Quality ManagementDesign of Transmission SystemsEnergy Conservation & ManagementFinite Element Analysis	L: T: P 3:01:00 0:00:02 3:01:00 0:00:02 3:01:00 3:01:00 3:01:00 3:01:00 3:01:00	4 1 4 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Semester VII/VIII VII/VIII					

Open Elective Courses

Branch: Mechanical Engineering (B.Tech)

SI. No.	Course Code	Course Title	Hrs./ Week L: T: P	Credits
1	OEC-CSE-301	Machie Learing for Real-World Applications	3:01:00	4
3	OEC-EEE-305	Renewable Energy	3:01:00	4
4	OEC-EEE-306	Renewable Energy Lab	0:00:02	1

	Project Work Branch: Mechanical Engineering (B.Tech)									
Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester					
1	ME-P1	Project Stage-I (Mini Project/ Industrial Training)	0:00:04	2	VI					
2	ME-P2	Project Stage-II (Minor Project) (To be continued in next semester)	0:00:10	5	VII					
3	ME-P3	Project Stage-III (Major Project Work & Dissertation)	0:00:18	9	VIII					
			Total Credit:	16						

	Massive Open Online Courses									
	Branch: Mechanical Engineering (B.Tech)									
SI. No.	Course Code	Course Title	Hrs./ Week L: T: P	Credits						
1	MOOCs -101	Artificial Intelligence for Real-World Application	3:01:00	4						
2	MOOCs -102	Applications of Deep Learning & Neural Networks	3:01:00	4						
3	MOOCs -103	Usability Design of Software Applications	3:01:00	4						
4	MOOCs -104	Applied Cloud Computing	3:01:00	4						
5	MOOCs -105	Information Security - Practitioner's perspective	3:01:00	4						
6	MOOCs -106	Innovation & Entrepreneurship	3:01:00	4						
7	MOOCs -107	Practical Approach to Data Mining & Analytics	3:01:00	4						
8	MOOCs -108	IoT & its Applications	3:01:00	4						
9	MOOCs -109	Intelligent Game Design & its Applications	3:01:00	4						
10	MOOCs -110	Industrial Mechatronic Systems	3:01:00	4						
11	MOOCs -111	Solar Energy Technology & its Applications	3:01:00	4						

Note: A student will be eligible to get Under Graduate degree with Honours or additional Minor Engineering, if he/she completes an additional 20 credits. These could be acquired through MOOCs.

SI			E	lours per we	ek		Proformad
No.	Course Code	Course Title	L	Т	Р	Credits	Semester
1	MC-101	Induction Programme	0	0	0	0	Ι
2	MC-102	Environmental Science	2	0	0	2	IV
3	MC-103	Values & Ethics	2	0	0	0	IV
4	MC-104	PDP-I	2	0	0	0	Ι
5	MC-105	PDP-II	2	0	0	0	II
6	MC-106	PDP-III	2	0	0	0	III
7	MC-107	PDP-IV	2	0	0	0	IV
8	MC-108	PDP-V	2	0	0	0	V
9	MC-109	PDP-VI	2	0	0	0	VI
10	MC-110	PDP-VII	2	0	0	0	VII
11	MC-111	PDP-VIII	2	0	0	0	VIII
12	MC-112	PT & Games/NSS/NCC-I	0	0	0	0	Ι
13	MC-113	PT & Games/NSS/NCC-II	0	0	0	0	II
14	MC-114	Vedic Mathematics-I	2	0	0	0	VI
15	MC-115	Vedic Mathematics-II	2	0	0	0	VII

Note.

PDP: Personality Devlopment Program **PT: Physical Traning** NSS: National Service Scheme **NCC: National Cadet Corps**

	COURSE STRUCTURE												
	SEMESTER I (1st YEAR) Branch: Machanical Engineering (B. Taak)												
CI.	Branch: Mechanical Engineering (B.Tech)												
SI. No.	Category	Course Code	Course Title	L	Hours	Р	Credit	IA	ESE	Total			
	Theory												
1	Basic Science Course	BSC-101	Chemistry	3	1	0	4	30	70	100			
2	Basic Science Course	BSC-105	Mathematics-I	3	1	0	4	30	70	100			
3	Engineering Science Course	ESC-101	Basic Electrical & Electronics Engineering	3	1	0	4	30	70	100			
4	Engineering Science Course	ESC-103	Introduction to Unix & C Programming	3	1	0	4	30	70	100			
5	Humanities and SocialHSMC-101English300330701005Sciences including ManagementHSMC-101English30033070100												
	Total(A) 19 150 350 500												
			Practical/Draw	ing/D	esign			1		1			
1	Engineering Science Course	ESC-105	Engineering Graphics & Design	1	0	4	3	30	20	50			
2	Basic Science Course	BSC-102	Chemistry Lab	0	0	3	1.5	30	20	50			
3	Engineering Science Course	ESC-102	Basic Electrical & Electronics Engineering Lab	0	0	2	1	30	20	50			
4	Engineering Science Course	ESC-104	Introduction to Unix & C Programming Lab	0	0	2	1	30	20	50			
			1		To	otal(B)	6.5	120	80	200			
			Mandatory (Cours	ses								
1	Mandatory Course	MC-101	Induction Program	0	0	0	0	0	0	0			
2	Mandatory Course	MC-112	PT & Games/NSS/NCC-I	0	0	2	0	0	0	0			
3	Mandatory Course	MC-104	PDP-I	2	0	0	0	0	0	0			
	Total(C) 0 0 0 0												
	Grand Total (A+B+C) 25.5 270 430 700												
L-Le	cture, T-Tutoria	al, P-Practica	l					1		1			
IA- I	nternal Assessm	ient, ESE-En	d Semester Examination										

	COURSE STRUCTURE												
	SEMESTER II (1st YEAR) Branch: Mechanical Engineering (B.Tech)												
SI. No	Category	Course Code	Course Title]	Hours	D	Credit	ТА	Marl	KS Tatal			
110.			Theory	L	1	r		IA	LSL	Total			
1	Basic Science Course	BSC-106	Mathematics-II	3	1	0	4	30	70	100			
2	2 Humanities and Social Sciences including Management Course HSMC-102		Technical Communication	2	0	0	2	30	70	100			
3	Engineering Science Course	ESC-106	Electronic Devices	3	0	0	3	30	70	100			
4	Basic Science Course	BSC-103	Physics	3	1	0	4	30	70	100			
5	Engineering Science Course	4	30	70	100								
	Total(A) 17 150 350 500												
	Practical/Drawing/Design												
1	Engineering Science Course	ESC-110	Workshop & Manufacturing Practices	1	0	4	3	30	20	50			
2	Engineering Science Course	ESC-107	Electronic Devices Lab	0	0	2	1	30	20	50			
3	Basic Science Course	BSC-104	Physics Lab	0	0	3	1.5	30	20	50			
4	Humanities and Social Sciences including Management Course	HSMC-103	Technical Communication Lab	0	0	2	1	30	20	50			
5	Engineering Science Course	ESC-109	Data Structure Lab	0	0	2	1	30	20	50			
					Tota	l(B)	7.5	150	100	250			
			Mandatory Courses		1	1							
1	Mandatory Course	MC-102	Environmental Science	2	0	0	2	30	70	100			
2	Mandatory Course	MC-113	PT & Games/NSS/NCC-II	0	0	2	0	0	0	0			
3	3Mandatory CourseMC-105PDP-II200							0	0	0			
	Total(C) 2 30 70 100												
тт	Grand Total (A+B+C) 26.5 330 520 850												
L-Leo IA- Ir	cture, 1-1 utorial, P-Pr iternal Assessment, ES	actical SE-End Semesto	er Examination										

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	COURSE STRUCTURE SEMESTER III (2nd YEAR) Branch: Mechanical Engineering (B Tech)										
SI.	Category	Course	Course Title		Hours	,	, Credit		Marks		
No.	Suregory	Code	Course Thie	L T P			orean	IA	ESE	Total	
	Theory										
1	Basic Science Course	BSC-107	Mathematics-III	3	1	0	4	30	70	100	
2	Engineering Science Course	ESC-111	Engineering Mechanics	3	1	0	4	30	70	100	
3	Professional Core Course	PCC-ME- 204	Production Technology	3	1	0	4	30	70	100	
4	Professional Core Course	РСС-МЕ- 203	Engineering Metrology	3	1	0	4	30	70	100	
5	Humanities and Social Sciences including Management Course	HSMC-105	French Through Communicative Approach-I	2	0	0	2	30	70	100	
6	Professional Core Course	PCC-ME- 201	Thermodynamics	3	1	0	4	30	70	100	
					To	tal(A)	22	180	420	600	
			Practical/Drawing/I	Design	1	1					
1	Professional Core Course	PCC-ME- 205	Basic Mechanical Engineering Lab	0	0	2	1	30	20	50	
2	Engineering Science Course	ESC-112	Programming using MATLAB	0	0	2	1	30	20	50	
3	Engineering Science Course	PCC-ME- 202	Thermal Engineering Lab	0	0	2	1	30	20	50	
	Total(B)								60	150	
		MG 102	landatory Courses/N	1000	.''S	0	0	0	0	0	
1	Mandatory Course	MC-103	Values & Ethics	2	0	0	0	0	0	0	
2	$\frac{2}{100000000000000000000000000000000000$										
	Grand Total (A+B+C) 25 270 480 750									750	
L-Le	L-Lecture, T-Tutorial, P-Practical										
IA- I	nternal Assessment, E	SE-End Sen	nester Examination								

		COU	RSE STR	RU	CT	UR	E					
			SEMESTER IV (2	nd Yl	EAR)							
Branch: Mechanical Engineering (B.Tech)												
Sl. No.	Category	Course Code	Course Title	т	Hours	р	Credit	ТА	Marks	Total		
		Cour	Theory	L	1	r		IA	LSE	Total		
	Durafaggianal Cana	DCC ME	Theory									
1	Course	208	Strength of Material	3	1	0	4	30	70	100		
2	Professional Core Course	PCC-ME- 206	Material Engineering	3	1	0	4	30	70	100		
3	Professional Core Course	PCC-ME- 210	Fluid Mechanics & Fluid Machine	3	1	0	4	30	70	100		
4	Professional Core Course	PCC-ME- 212	Applied Thermodynamics	3	1	0	4	30	70	100		
5	Humanities and Social Sciences including Management Course	HSMC-106	French Through Communicative Approach-II	2	0	0	2	30	70	100		
6	Humanities and Social Sciences including Management Course	HSMC-104	Organisational Behaviour	2	0	0	2	30	70	100		
					To	otal(A)	20	180	420	600		
	1		Practical/Drawing	g/Desig	n	1		1		1		
1	Professional Core Course	PCC-ME- 211	Fluid Mechanics Lab	0	0	2	1	30	20	50		
2	Professional Core Course	РСС-МЕ- 209	Strength of Material Lab	0	0	2	1	30	20	50		
3	Professional Core Course	PCC-ME- 207	Material Testing Lab	0	0	2	1	30	20	50		
					Т	otal(B)	3	90	60	150		
			Mandatory Co	urses						-		
1	Mandatory Course	MC-107	PDP-IV	2	0	0	0	0	0	0		
					To	otal(C)	0	0	0	0		
Grand Total (A+B+C) 23 270 480 750												
L-Lecti IA- Inte	ure, T-Tutorial, P-I ernal Assessment, I	Practical ESE-End Sem	ester Examination									

COURSE STRUCTURE

SEMESTER V (3rd YEAR)

Branch: Mechanical Engineering (B.Tech)

SI.	Catagoria	Course	urse Commo Title		Hours		Crue dit	Marks					
No.	Category	Code	Course little	L	Т	Р	Credit	IA	ESE	Total			
			Th	eory									
1	Professional Core Course	PCC-ME- 301	Heat Transfer	3	1	0	4	30	70	100			
2	Open Elective Course	OEC-EEE- 305	Renewable Energy	3	1	0	4	30	70	100			
3	Professional Core Course	PCC-ME- 303	Manufacturing Process	3	1	0	4	30	70	100			
4	Professional Core Course	РСС-МЕ- 305	Theory of Machines	3	1	0	4	30	70	100			
5	Open Elective Course	OEC-CSE- 301	Machie Learing for Real-World Applications	3	1	0	4	30	70	100			
	Total(A) 20 150 350 500												
	Practical/Drawing/Design												
1	Professional Core Course	РСС-МЕ- 302	Heat Transfer lab	0	0	2	1	30	20	50			
2	Professional Core Course	PCC-ME- 304	Production Practice Lab	0	0	2	1	30	20	50			
3	Professional Core Course	PCC-ME- 306	Theory of Machines Lab	0	0	2	1	30	20	50			
4	Open Elective Course	OEC-EEE- 306	Renewable Energy Lab	0	0	2	1	30	20	50			
					1	Fotal(B)	4	120	80	200			
			Mandatory Co	ourses/M	100C'S								
1 Mandatory Course MC-108 PDP-V 2 0 0 0 0										0			
		0	0	0	0								
Grand Total (A+B+C) 24 270 4													
L-Le	cture, T-Tutor	ial, P-Practio	cal				_		-				
IA- I	nternal Assess	ment, ESE-E	nd Semester Examir	nation									

	COURSE STRUCTURE											
		:	SEMESTER VI (3r	d YE	AR)							
	Branch: Mechanical Engineering (B.Tech)											
SI.	Category	Course Code	Course Title		Hours	1	Credit		Marks			
No.	No. Category Course Code Course Title L T P Credit IA ESE Total											
			Incory									
1	Professional Core Course	РСС-МЕ- 309	Dynamics of Machines	3	1	0	4	30	70	100		
2	Professional Core Course	PCC-ME- 307	Design of Machine Elements	3	1	0	4	30	70	100		
3	Professional Elective Course	PEC-ME- 302	Automobile Engineering.	3	1	0	4	30	70	100		
4	Professional Elective Course	PEC-ME- 301	Internal Combustion Engines	3	.1	0	4	30	70	100		
5	Professional Elective Course	PEC-ME- 304	Operation Research	3	1	0	4	30	70	100		
					Т	otal(A)	20	150	350	500		
			Practical/Drawing/E	Design	1	1			1			
1	Professional Core Course	PCC-ME- 308	Design of Machine Elements Lab	0	0	2	1	30	20	50		
2	Professional Elective Course	PEC-ME- 303	Automobile Engineering Lab	0	0	2	1	30	20	50		
3	Engineering Science Course	ESC-113	Python Programming	1	0	2	2	30	20	50		
4	Project Work	ME-P1	Project Stage-I (Mini Project/ Industrial Training)	0	0	4	2	75	25	100		
		-			T	otal(B)	6	165	85	250		
			Mandatory Cou	rses								
1	Mandatory Course	MC-109	PDP-VI	2	0	0	0	0	0	0		
2	Mandatory Course	MC-114	Vedic Mathematics-I	2	0	0	0	0	0	0		
L-Le	Grand Total (A+B+C) 26 315 435 750											
IA- I	nternal Assessment,	ESE-End Sei	nester Examination									

	COURSE STRUCTURE												
	SEMESTER VII (4th YEAR)												
	Branch: Mechanical Engineering (B.Tech)												
SI.		Course			Hours				Marks				
No.	Category	Code	Course Title	L	Т	Р	Credit	IA	ESE	Total			
	Theory												
1	Professional Elective Course	PEC-ME- 401	Refrigeration & Air Conditioning	3	1	0	4	30	70	100			
2	Professional Core Course	РСС-МЕ- 401	Automation in Manufacturing	3	1	0	4	30	70	100			
3	Professional Elective Course	PEC-ME- 403	Computer Aided Design	3	1	0	4	30	70	100			
	Total(A) 12 90 210 300												
			Practical/Drawing	/Desig	ı								
	Professional Elective	PEC-ME-	Refrigeration & Air										
1	Course	402	Conditioning Lab	0	0	2	1	30	20	50			
2	Professional Elective	PEC-ME-	Computer Aided	0	0	2	1	20	20	50			
3	Project Work	404 ME-P2	Design Lab Project-II (Minor Project)	0	0	10	5	75	20	100			
		<u> </u>	5 /		То	tal(B)	7	135	65	200			
			Mandatory Co	urses									
1	Mandatory Course	MC-110	PDP-VII	2	0	0	0	0	0	0			
2	Mandatory Course	MC-115	Vedic Mathematics-II	2	0	0	0	0	0	0			
	Total(C) 0 0 0 0												
Grand Total (A+B+C) 19 225 275 500													
L-Lecture, T-Tutorial, P-Practical													
IA- I	nternal Assessment, ES	SE-End Sem	ester Examination										

	COURSE STRUCTURE											
	SEMESTER VIII (4th YEAR)											
	Branch: Mechanical Engineering (B.Tech)											
SI.	Cotogomy	Course Code	Course Title		Hours		Credit		Marks			
No.	Category	Course Coue	Course Thie	L	Т	Р	Creun	IA	ESE	Total		
	Theory											
1	Professional Elective Course	PEC-ME-405	Power Plant Engineering	3	1	0	4	30	70	100		
2	Professional Elective Course	PEC-ME-406	Gas Dynamics & Jet Propulsion	3	1	0	4	30	70	100		
3	Professional Elective Course	PEC-ME-407	Total Quality Management	3	1	0	4	30	70	100		
					То	otal(A)	12	90	210	300		
			Practical/Drawin	g/Design	l							
1	Project Work	ME-P3	Project Stage-III (Major Project Work & Dissertation)	0	0	18	9	75	25	100		
					Т	otal(B)	9	75	25	100		
	Mandatory Courses/MOOC'S											
1	Mandatory Course	MC-111	PDP-VIII	2	0	0	0	0	0	0		
	Total(C)											
	Grand Total (A+B+C) 21 165 235 400											
L-Le	L-Lecture, T-Tutorial, P-Practical											
IA- I	nternal Assessment,	ESE-End Sem	ester Examination									