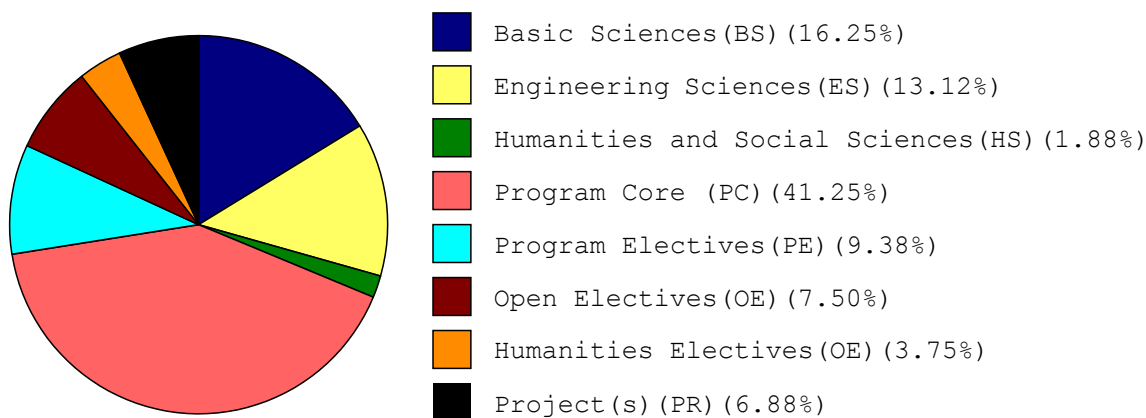


DEPARTMENT OF MECHANICAL ENGINEERING

B.TECH. MECHANICAL ENGINEERING

Program curriculum grouping based on course components

Course Component	Curriculum Content (% of total number of credits program)	Total number of contact hours	Total number of credits
Basic Sciences (BS)	16.25	30	26
Engineering Sciences (ES)	13.13	29	21
Humanities and Social Sciences (HS)	1.88	4	3
Professional Core (PC)	41.25	76	66
Professional Electives (PE)	9.38	12	15
Open Electives (OE)	7.5	9	12
Humanities Electives (HE)	3.75	6	6
Project(s) (PR)	6.88	16	11
Mandatory Course(s) (MC)	--	8	--
Total number of Credits			160



B.TECH. MECHANICAL ENGINEERING

(w.e.f. the batch of students admitted from the academic year 2018-2019)

Three Weeks Orientation Programme is Mandatory before starting Semester I [First Year]

Semester I [First Year]

COURSE STRUCTURE

SNo.	Course Details		Scheme of Instruction			Scheme of Examination			Category
	Code No.	Subject Name	Periods per week			Maximum Marks		Credits	
			L	T	P	SES	EXT		
1	ME/CE/EC 111	Mathematics-I	3	1	-	40	60	4	BS
2	ME/EC/EE 112	Engineering Chemistry	3	1	-	40	60	4	BS
3	ME/CE/CH/EE 113	English for Communication Skills	2	-	-	40	60	2	HS
4	ME/EC/EE 151	Chemistry Lab	-	-	3	40	60	1.5	BS
5	ME/CE/CH/EE 152	English Language Communication Skills Lab	-	-	2	40	60	1	HS
6	ME/CE/EE 153	Workshop Practice Lab	1	-	4	40	60	3	ES
7	MC 002	Environmental Science	2	-	-	100	-	-	MC
TOTAL			11	2	9	340	360	15.5	TPW-22

Semester II [First Year]

COURSE STRUCTURE

SNo.	Course Details		Scheme of Instruction			Scheme of Examination			Category
	Code No.	Subject Name	Periods per week			Maximum Marks		Credits	
			L	T	P	SES	EXT		
1	ME/CE/EC 121	Mathematics-II	3	1	-	40	60	4	BS
2	ME 122	Engineering Physics	3	1	-	40	60	4	BS
3	ME/CE/CH/CS/EE/EC/IT 123	Programing for Problem Solving	3	-	-	40	60	3	ES
4	ME/CH 124	Basic Electrical Engineering	3	1	-	40	60	4	ES
5	ME 161	Physics Lab	-	-	3	40	60	1.5	BS
6	ME/CE/CH/CS/EE/EC/IT/ 162	Programing for Problem Solving Lab	-	-	4	40	60	2	ES
7	ME/CE/EE 163	Engineering Graphics & Design Lab	1	-	4	40	60	3	ES
8	ME/CH 164	Basic Electrical Engineering Lab	-	-	2	40	60	1	ES
9	MC 001	Constitution of India	2	-	-	100	-	-	MC
TOTAL			15	3	13	420	480	22.5	TPW-31

Semester III [Second Year]

COURSE STRUCTURE

SNo.	Course Details		Scheme of Instruction			Scheme of Examination			Category
	Code No.	Subject Name	Periods per week			Maximum Marks		Credits	
			L	T	P	SES	EXT		
1	ME 211	Engineering Mechanics	2	1	-	40	60	3	ES
2	ME 212	Life Sciences for Engineers	2	-	-	40	60	2	BS
3	ME 213	Manufacturing Processes	3	-	-	40	60	3	PC
4	ME 214	Basic Thermodynamics	2	1	-	40	60	3	PC
5	ME 215	Theory of Mechanisms & Machines	2	1	-	40	60	3	PC
6	ME 216	Fluid Mechanics & Hydraulic Machines	2	1	-	40	60	3	PC
7	ME 251	Machine Drawing Lab	1	-	2	40	60	2	PC
8	ME 252	Communicative English Lab	1	-	2	40	60	2	BS
9	ME 253	Basic Electronics Lab	1	-	2	40	60	2	ES
10	MC 003	Essence of Indian Traditional Knowledge	2	-	-	100	-	-	MC
TOTAL			18	4	6	460	540	23	TPW-28

Semester IV [Second Year]**COURSE STRUCTURE**

SNo.	Course Details		Scheme of Instruction			Scheme of Examination			Category Code
	Code No.	Subject Name	Periods per week			Maximum Marks		Credits	
			L	T	P	SES	EXT		
1	ME 221	Mathematics - III (PDE, Probability & Statistics)	2	1	-	40	60	3	BS
2	ME 222	Strength of Materials	2	1	-	40	60	3	PC
3	ME 223	Manufacturing Technology	3	-	-	40	60	3	PC
4	ME 224	Applied Thermodynamics	2	1	-	40	60	3	PC
5	ME 225	Material Science and Metallurgy	3	-	-	40	60	3	PC
6	ME 226	Open Elective-I	3	-	-	40	60	3	OE
7	ME 261	Fluid Mechanics & Strength of Materials Lab	-	-	2	40	60	1	PC
8	ME 262	Manufacturing Lab - 1	-	-	2	40	60	1	PC
9	ME 263	Modelling Lab	-	-	2	40	60	1	PC
10	MC 004	Design Thinking and Innovation	2	-	-	100	-	-	MC
TOTAL			17	3	6	460	540	21	TPW-26

Semester V (Third Year)**COURSE STRUCTURE**

SNo.	Course Details		Scheme of Instruction			Scheme of Examination			Category Code
	Code No.	Subject Name	Periods per week			Maximum Marks		Credits	
			L	T	P	SES	EXT		
1	ME 311	Design of Machine Elements	2	1	-	40	60	3	PC
2	ME 312	Solid Mechanics	2	1	-	40	60	3	PC
3	ME 313	Machine Dynamics and Vibrations	3	-	-	40	60	3	PC
4	ME 314	Operations Research	2	1	-	40	60	3	PC
5	ME 315	Professional Elective-I	3	-	-	40	60	3	PE
6	ME 316	Humanities Elective-I	3	-	-	40	60	3	HE
7	ME 351	Thermal Engineering Laboratory I	1	-	2	40	60	2	PC
8	ME 352	Professional Communication Skills Lab	-	-	2	40	60	1	PC
TOTAL			16	3	4	320	480	21	TPW-23

Semester VI [Third Year]**COURSE STRUCTURE**

SNo.	Course Details		Scheme of Instruction			Scheme of Examination			Category Code
	Code No.	Subject Name	Periods per week			Maximum Marks		Credits	
			L	T	P	SES	EXT		
1	ME 321	Design of Transmission Elements	2	1	-	40	60	3	PC
2	ME 322	Finite Element Method	2	1	-	40	60	3	PC
3	ME 323	Heat Transfer	2	1	-	40	60	3	PC
4	ME 324	Professional Elective-II	3	-	-	40	60	3	PE
5	ME 325	Humanities Elective-II	3	-	-	40	60	3	HE
6	ME 326	Open Elective-II	3	-	-	40	60	3	OE
7	ME 361	Thermal Engineering Laboratory II	-	-	2	40	60	1	PC
8	ME 362	Analysis & Simulation Lab	-	-	2	40	60	1	PC
TOTAL			15	3	4	320	480	20	TPW-22

Semester VII [Fourth Year]**COURSE STRUCTURE**

SNo.	Course Details		Scheme of Instruction			Scheme of Examination		Category Code	
	Code No.	Subject Name	Periods per week			Maximum Marks	Credits		
			L	T	P				SES
1	ME 411	Automation in Manufacturing	3	-	-	40	60	3	PC
2	ME 412	Fundamentals of Industrial Engineering	3	-	-	40	60	3	PC
3	ME 413	Metrology and Mechanical Measurements	3	-	-	40	60	3	PC
4	ME 414	Professional Elective-III	3	-	-	40	60	3	PE
5	ME 415	Professional Elective-IV	3	-	-	40	60	3	PE
6	ME 416	Open Elective-III	3	-	-	40	60	3	OE
7	ME 451	Manufacturing Lab II (CAM)	-	-	3	40	60	1.5	PC
8	ME 452	Design and Metrology Lab	-	-	3	40	60	1.5	PC
9	ME 453	Internship	-	-	-	100	-	2	PR
10	ME 454	Mini Project	-	-	2	100	00	2.0	PR
TOTAL			18	0	6	520	480	25	TPW-24

Semester VIII [Fourth Year]**COURSE STRUCTURE**

SNo.	Course Details		Scheme of Instruction			Scheme of Examination		Category Code	
	Code No.	Subject Name	Periods per week			Maximum Marks	Credits		
			L	T	P				SES
1	ME 421	Professional Elective-V (MOOCs)	-	-	-	100	-	3	PE
2	ME 422	Open Elective-IV (MOOCs)	-	-	-	100	-	3	OE
3	ME 461	Project	-	-	14	40	60	6	PR
TOTAL			0	0	14	240	60	12	TPW-14

Program Elective Courses

Code No.	Subject Name	Code No.	Subject Name
MEEL01	Computer Aided Design	MEEL02	Mechatronic System Design
MEEL03	Fluidics and control systems	MEEL04	Industrial Robotics
MEEL05	I C Engines and Gas Turbines	MEEL06	Gas Dynamics and JET Propulsion
MEEL07	Refrigeration and Air Conditioning	MEEL08	Automobile Engineering
MEEL09	Power Plant Engineering	MEEL10	Energy Conservation and Management
MEEL11	Product Lifecycle Management	MEEL12	Principles of Management
MEEL13	Process Planning and Cost Estimation	MEEL14	Total Quality Management
MEEL15	Composite Materials	MEEL16	Design Of Experiments
MEEL17	Farm Machinery and Equipment	MEEL18	Computational Fluid Dynamics
MEEL19	Introduction to Aircraft Industry and Systems	MEEL20	Research Methodology

Value Added Courses

Code No.	Subject Name	Code No.	Subject Name
ME V01	English Competency Development Programme	ME V02	AI Tools , Techniques & Applications
ME V03	Internet of Things		

Open Elective Courses

Code No.	Subject Name	Code No.	Subject Name
CEOL01	Building Materials and Construction	CEOL02	Solid waste Management
CEOL03	Remote Sensing and GIS	CHOL01	Energy Engineering
CHOL02	Biofuels	CHOL03	Pollution Control
CHOL04	Nanoscience and Nanotechnology	CSOL01	Programming with Java
CSOL02	Relational Database Management Systems	CSOL03	Programming with Python
CSOL04	Internet of Things	ECOL01	Applied Electronics
ECOL02	Basic Communication	ECOL03	Basic Electronics & Communication Engineering
ECOL04	Microprocessors & Interfacing	ECOL05	Digital Image Processing

EEOL01	Renewable energy sources	EEOL02	Utilization of Electrical Energy
EEOL03	Power Converters	EEOL04	Energy Conservation
EEOL05	Introduction to Electric Vehicles and Storage System	sITOL01	Data Structures & Algorithms
ITOL02	Operating Systems	ITOL03	Big Data Analytics
ITOL04	Web Technologies		