

SANJIVANI RURAL EDUCATION SOCIETY'S
SANJIVANI COLLEGE OF ENGINEERING
KOPARGAON

(An Autonomous Institute Affiliated to SPPU Pune)



DEPARTMENT OF MECHANICAL ENGINEERING
COURSE STRUCTURE - 2019 PATTERN
SECOND YEAR to FINAL YEAR B. TECH.

LIST OF ABBREVIATIONS			
Abbreviation	Full Form	Abbreviation	Full Form
ES	Engineering Science	HSMC	Humanity Science
PC	Professional Core	CA	Continuous Assessment
PE	Professional Elective	OR	End Semester Oral Examination
OE	Open Elective	PR	End Semester Practical Examination
ISE	In-Semester Evaluation	TW	Continuous Term work Evaluation
ESE	End-Semester Evaluation	BSC	Basic Science Course
PRJ	Project	MC	Mandatory Course

COURSE STRUCTURE- 2019 PATTERN
SECOND YEAR B. TECH: MECHANICAL ENGINEERING

SEMESTER-III 2019

Cat.	Code	Course Title	Teaching Scheme			Credits	Evaluation Scheme-Marks						
			L (hrs)	T (hrs)	P (hrs)		Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PRJ	ME201	Professional Internship-I	-	-	2	1	-	-	-	-	-	50	50
BSC	BS202	Vector Calculus and Differential Equations	3	1	-	4	30	50	20	-	-	-	100
PC	ME203	Basic Thermodynamics	3	-	-	3	30	50	20	-	-	-	100
PC	ME204	Manufacturing Processes	3	-	-	3	30	50	20	-	-	-	100
PC	ME205	Strength of Materials	3	-	-	3	30	50	20	-	-	-	100
HSMC	HS206	Universal Human Values & Ethics	3	-	-	3	30	50	20	-	-	-	100
PC	ME207	Basic Thermodynamics Lab	-	-	2	1	-	-	-	50	-	-	50
PC	ME208	Machine Shop - I	-	-	2	1	-	-	-	-	50	-	50
PC	ME209	Strength of Materials Lab	-	-	2	1	-	-	-	50	-	-	50
MC	MC210	Mandatory Course-III	2	-	-	No	-	-	-	-	-	-	-
Total			17	1	8	20	150	250	100	100	50	50	700

SEMESTER-IV

Cat.	Code	Course Title	Teaching Scheme			Credits	Evaluation Scheme-Marks						
			L (hrs)	T (hrs)	P (hrs)		Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PC	ME211	Numerical Methods	3	-	-	3	30	50	20	-	-	-	100
PC	ME212	Fluid Mechanics	4	-	-	4	30	50	20	-	-	-	100
PC	ME213	Materials Science & Metallurgy	3	-	-	3	30	50	20	-	-	-	100
PC	ME214	Kinematics of Machines	4	-	-	4	30	50	20	-	-	-	100
PRJ	ME215	Seminar	-	-	2	1	-	-	-	50	-	-	50
PC	ME216	Machine Drawing & Geometrical Modeling	1	-	4	3	-	-	-	-	-	50	50
PC	ME217	Numerical Methods Lab	-	-	2	1	-	-	-	-	50	-	50
PC	ME218	Fluid Mechanics Lab	-	-	2	1	-	-	-	-	50	-	50
PC	ME219	Materials Science & Metallurgy Lab	-	-	2	1	-	-	-	50	-	-	50
PC	ME220	Kinematics of Machines Lab	-	-	2	1	-	-	-	50	-	-	50
MC	MC221	Mandatory Course-IV	2	-	-	No	-	-	-	-	-	-	-
Total			17	-	14	22	120	200	80	150	100	50	700

MC210	Mandatory Course-III	Constitution of India – Basic features and fundamental principles
MC221	Mandatory Course-IV	Innovation - Project based – Sc., Tech, Social, Design & Innovation

Note: For evaluation of Oral/Practical/TW, students should submit the journal regularly. Non submission of journal will be treated as absentees in concern head.

T.Y.B. Tech SEM V 2019

Cat	Code	Course Title	Hrs./Week			Credits	Marks						
			L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
PRJ	ME301	Professional Internship-II	-	-	-	2	-	-	-	50	-	-	50
PCC	ME302	Production Technology	3	-	-	3	30	50	20	-	-	-	100
PCC	ME303	Machine Design –I	3	-	-	3	30	50	20	-	-	-	100
PCC	ME304	Metrology and QC	3	-	-	3	30	50	20	-	-	-	100
PCC	ME305	Heat Transfer	3	-	-	3	30	50	20	-	-	-	100
PEC	ME306	Professional Elective-I	3	-	-	3	30	50	20	-	-	-	100
PCC	ME307	Machine Design –I Lab	-	-	2	1	-	-	-	-	-	25	25
PCC	ME308	Metrology and QC Lab	-	-	2	1	-	-	-	25	-	-	25
PCC	ME309	Heat Transfer Lab	-	-	2	1	-	-	-	-	50	-	50
PRJ	ME310	Skill based Credit Course/PBL	1	-	-	1	-	-	50	-	-	-	50
MLC	ME311	Mandatory Learning Course	1	-	-	NC	-	-	-	-	-	-	-
Total			17		06	21	150	250	150	75	50	25	700

T.Y.B. Tech SEM VI

Cat	Code	Course Title	Hrs./Week			Credits	Marks						
			L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
PCC	ME312	Applied Thermodynamics	3	-	-	3	30	50	20	-	-	-	100
PCC	ME313	Machine Design –II	3	-	-	3	30	50	20	-	-	-	100
PEC	ME314	Professional Elective-II	3	-	-	3	30	50	20	-	-	-	100
OE	ME315	Open Elective-I	4	-	-	4	30	50	20	-	-	-	100
PRJ	PR316	IPR & EDP	2	-	-	2	15	25	10	-	-	-	50
PRJ	PR317	IPR & EDP Lab	-	-	2	1	-	-	-	-	-	50	50
HSMC	HS318	Corporate Readiness	1	-	2	2	-	-	-	-	-	50	50
PCC	ME319	Applied Thermodynamics Lab	-	-	2	1	-	-	-	-	50	-	50
PCC	ME320	Machine Design –II Lab	-	-	2	1	-	-	-	50	-	-	50
PCC	ME321	Machine Shop-II Lab	-	-	2	1	-	-	-	-	-	50	50
MLC	ME322	Mandatory Learning Course	1	-	-	NC	-	-	-	-	-	-	-
Total			17		10	21	135	225	90	50	50	150	700

Professional Elective – I				Professional Elective – II			
ME306A	Refrigeration System			ME314A	Turbo Machinery		
ME306B	Reliability Engineering			ME314B	Operation Research		
ME306C	Industrial Tribology			ME314C	Process Equipment Design		

Open Electives-I				
ME315A	IoT (Internet of Things)		ME315C	Digital Marketing
ME315B	Artificial Intelligence		ME315D	Enterprise Resource Planning
ME315E	Renewable Energy Sources		ME315F	OOP-C++/JAVA/Python

ME311	Mandatory Learning Course	Proficiency Skills (Design Thinking)
ME322	Mandatory Learning Course	Proficiency Skills (Programing Skills)

Final. B.Tech SEM VII 2019

Cat	Code	Course Title	Hrs./Week			Credits	Marks						
			L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
PRJ	ME401	Professional Internship-III	-	-	-	2	-	-	-	50	-	-	50
PCC	ME402	Finite Element Analysis	3	-	-	3	30	50	20	-	-	-	100
PCC	ME403	Mechatronics	3	-	-	3	30	50	20	-	-	-	100
PEC	ME404	Professional Elective-III	3	-	-	3	30	50	20	-	-	-	100
OE	ME405	Open Elective-II	3	-	-	3	30	50	20	-	-	-	100
OE	ME406	Open ELECTIVE-III [Online through MOOCs]	2	-	-	2	-	30	20*	-	-	-	50 *
PCC	ME407	Finite Element Analysis Lab	-	-	2	1	-	-	-	-	50	-	50
PCC	ME408	Mechatronics Lab	-	-	2	1	-	-	-	50	-	-	50
PRJ	ME409	Project Stage-I	-	-	4	2	-	-	-	50	-	-	50
MLC	ME410	Mandatory Learning Course	(1)	-	-	Non-Credit	-	-	-	-	-	-	-
Total			15	-	8	20	120	230	100	150	50	-	650

Final. B.Tech SEM VIII

Cat	Code	Course Title	Hrs./Week			Credits	Marks						
			L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
PCC	ME411	HVAC Heating Ventilation and Air Conditioning	3	-	-	3	30	50	20	-	-	-	100
PCC	ME412	Hydraulic and Pneumatics	3	-	-	3	30	50	20	-	-	-	100
PCC	ME413	Dynamics of Machines	3	-	-	3	30	50	20	-	-	-	100
PEC	ME414	Professional Elective-IV	3	-	-	3	30	50	20	-	-	-	100
PCC	ME415	Lab-I (HVAC and HPLab)	-	-	2	1	-	-	-	-	50	-	50
PCC	ME416	Dynamics of Machines Lab	-	-	2	1	-	-	-	50	-	-	50
PRJ	ME417	Project Stage-II	-	-	8	4	-	-	-	50	-	100	150
MLC	ME418	Mandatory Learning Course	(1)	-	-	Non-Credit	-	-	-	-	-	-	-
Total			13	-	12	18	120	200	80	100	50	100	650

Professional Elective – III		Professional Elective – IV	
ME404A	Additive Manufacturing	ME414A	Advanced Finite Element Analysis
ME404B	Computational Fluid Dynamics	ME414B	Power Plant Engineering
ME404C	Robotics and Automation	ME414C	Automobile Engg

Open Electives-II		Open Electives-III	
ME405A	Optimization Techniques	ME406A	Industrial Safety
ME405B	Artificial Neural Networks and Fuzzy Systems	ME406B	Logistics & ware-housing
ME405C	Cyber Law and Ethics	3	
ME405D	Speech and Image Processing	4	
ME405E	Fire Safety (Health Safety and Environment)	5	
ME405F	Quality Management System	6	

ME410	Mandatory Learning Course	
ME418	Mandatory Learning Course	

Credit Structure

Semester	No of Credits	Total Marks	Oral Heads	Pr Heads	TW Heads
I	21	650	-	-	5
II	21	650	-	-	6
III	20	700	2	1	1
IV	22	700	3	2	1
V	21	700	1	1	1
VI	21	700	1	1	3
VII	20	650	3	1	-
VIII	18	650	2	1	1
Total	164	5400	12	7	18

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