

B. Tech. Mechanical Engineering
Course Structure for Semester III [Second Year] w.e.f. 2018-2019

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
BTBSC301	BSC 7	Engineering Mathematics-III	3	1	--	20	20	60	100	4
BTMEC302	ESC 11	Materials Science and Metallurgy	3	1	--	20	20	60	100	4
BTMEC303	PCC 1	Fluid Mechanics	3	1	--	20	20	60	100	4
BTMEC304	PCC 2	Machine Drawing and CAD	2	--	--	20	20	60	100	2
BTMEC305	ESC 12	Thermodynamics	3	1	--	20	20	60	100	4
BTHM3401	HSMC 3	Basic Human Rights	2	--	--	50	--	--	50	Audit (AU/ NP)
BTMEL307	ESC 13	Materials Science and Metallurgy Lab	--	--	2	60	--	40	100	1
BTMEL308	PCC 3	Fluid Mechanics Lab	--	--	2	60	--	40	100	1
BTMEL309	PCC 4	Machine Drawing and CAD Lab	--	--	4	60	--	40	100	2
BTMEF310	Project 1	Field Training Internship/Industrial Training I	--	--	--	--	--	50	50	1
Total			16	4	8	330	100	470	900	23

B. Tech. Mechanical Engineering

Course Structure for Semester IV [Second Year] w.e.f. 2018-2019

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
BTMEC401	PCC 5 ✓	Manufacturing Processes - I	2	1	--	20	20	60	100	3
BTMEC402	PCC 6 ✓	Theory of Machines-I	3	1	--	20	20	60	100	4
BTMEC403	PCC 7 ✓	Strength of Materials	3	1	--	20	20	60	100	4
BTMEC404	BSC 8	Numerical Methods in Mechanical Engineering	2	1	--	20	20	60	100	3
BTID405	PCC 8 ✓	Product Design Engineering – I	1	--	2	60	--	40	100	2
BTBSE406A	OEC 1	Physics of Engineering Materials	3	--	--	20	20	60	100	3
BTBSE3405A		Advanced Engineering Chemistry								
BTHM3402		Interpersonal Communication Skill & Self Development								
BTMEL407	PCC 9	Manufacturing Processes Lab – I	--	--	2	60	--	40	100	1
BTMEL408	PCC 10	Theory of Machines Lab- I	--	--	2	60	--	40	100	1
BTMEL409	PCC 11	Strength of Materials Lab	--	--	2	60	--	40	100	1
BTMEL410	BSC 9	Numerical Methods Lab	--	--	2	60	--	40	100	1
Total			14	4	10	400	100	500	1000	23

Minimum 4 weeks training which can be completed partially in third and fourth semester or in at one time.

B. Tech. Mechanical Engineering
Course Structure for Semester V [Third Year] w.e.f. 2019-2020

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
BTMEC501	PCC 12	Heat Transfer	3	1	--	20	20	60	100	4
BTMEC502	PCC 13	Applied Thermodynamics - I	2	1	--	20	20	60	100	3
BTMEC503	PCC 14	Machine Design - I	2	1	--	20	20	60	100	3
BTMEC504	PCC 15	Theory of Machines- II	3	1	--	20	20	60	100	4
BTMEC505	PCC 16	Metrology and Quality Control	2	1	--	20	20	60	100	3
BTID506	PCC 17	Product Design Engineering - II	1	--	2	60	--	40	100	2
BTMEC506A		Automobile Engineering								Audit (AU/ NP)
BTMEC506B	OEC 2	Nanotechnology	3	--	--	--	--	--	--	
BTMEC506C		Energy Conservation and Management								
BTMEL507	PCC 18	Heat Transfer Lab	--	--	2	30	--	20	50	1
BTMEL508	PCC 19	Applied Thermodynamics Lab	--	--	2	30	--	20	50	1
BTMEL509	PCC 20	Machine Design Practice- I	--	--	2	30	--	20	50	1
BTMEL510	PCC 21	Theory of Machines Lab- II	--	--	2	30	--	20	50	1
BTMEF511	Project 2	Field Training / Internship/ Industrial Training II	--	--	--	--	--	50	50	1
Total			16	5	10	280	100	470	850	24

B. Tech. Mechanical Engineering
Course Structure for Semester VI [Third Year] w.e.f. 2019-2020

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
BTMEC601	PCC 22	Manufacturing Processes- II	2	1	--	20	20	60	100	3
BTMEC602	PCC 23	Machine Design-II	3	1	--	20	20	60	100	4
BTMEC603	PCC 24	Applied Thermodynamics- II	2	1	--	20	20	60	100	3
BTMEC604A	PEC 1	Engineering Tribology	2	1	--	20	20	60	100	3
BTMEC604B		IC Engines								
BTMEC604C		Additive Manufacturing								
BTMEC604D		Mechanical Measurements								
BTMEC605A	OEC 3	Quantitative Techniques in Project Management	3	--	--	20	20	60	100	3
BTMEC605B		Sustainable Development								
BTMEC605C		Renewable Energy Sources								
BTMEC606A	OEC 4	Biology for Engineers	3	--	--	--	--	--	--	Audit (AU/ NP)
BTMEC606B		Solar Energy								
BTMEC606C		Human Resource Management								
BTMEL607	PCC 25	Metrology and Quality Control Lab	--	--	2	30	--	20	50	1
BTMEL608	PCC 26	Machine Design Practice-II	--	--	2	30	--	20	50	1
BTMEL609	PCC 27	IC Engine Lab	--	--	2	30	--	20	50	1
BTMEL610	PCC 28	Refrigeration and Air Conditioning Lab	--	--	2	30	--	20	50	1
BTMEM611	Project 3	Technical Project for Community Services	--	--	4	30	--	20	50	2
Total			15	4	12	250	100	400	750	22

B. Tech. Mechanical Engineering
Course Structure for Semester VII [Fourth Year] w.e.f. 2020-2021

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
BTMEC701	PCC 29	✓ Mechatronics	2	1	--	20	20	60	100	3
BTMEC702	PCC 30	✓ CAD/CAM	2	1	--	20	20	60	100	3
BTMEC703	PCC 31	✓ Manufacturing Processes - III	2	1	--	20	20	60	100	3
BTMEC704A	PEC 2	✓ Fluid Machinery	2	1	--	20	20	60	100	3
BTMEC704B		✓ Industrial Engineering and Management								
BTMEC704C		✓ Finite Element Method								
BTMEC704D		✓ Surface Engineering								
BTMEC704E		✓ Refrigeration and Air Conditioning								
BTAMC704C		✓ Automobile Design (Product Design, PLM, CAE, Catia)								
BTMEC705A		OEC 5								
BTMEC705B	Intellectual Property Rights									
BTMEC705C	✓ Wind Energy									
BTMEC705D	Knowledge Management									
BTMEL706	PCC 32	Manufacturing Processes Lab - II	--	--	2	30	--	20	50	1
BTMEL707	PCC 33	Mechatronics Lab	--	--	2	30	--	20	50	1
BTMEL708	PCC 34	CAD/CAM Lab	--	--	2	30	--	20	50	1
BTMES709	Project 4	Seminar	--	--	2	30	--	20	50	1
BTMEF710	Project 5	Field Training Internship/Industrial Training III	--	--	--	--	--	50	50	1
BTMEP711	Project 6	Project Stage-I**	--	--	6	30	--	20	50	3
Total			11	4	14	230	80	390	700	20

**In case of students opting for Internship in the eighth semester, the Project must be industry-based.

B. Tech. Mechanical Engineering
Course Structure for Semester VIII [Fourth Year] w.e.f. 2020-2021

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
Choose any two subjects from ANNEXURE-A#			-	-	--	20	20	60	100	3
			-	-	--	20	20	60	100	3
BTMEP803	Project 7	Project Stage-II or Internship and Project*	--	--	30	50	--	100	150	15
Total			--	--	30	90	40	220	350	21

* Six months of Internship in the industry

These subjects are to be studied on self-study mode using SWAYAM/NPTEL/Any other source

Student doing project in Industry will give NPTEL Examination/Examination conducted by the University i.e. CA/MSE/ESE

Students doing project in the Institute will have to appear for CA/MSE/ESE

ANNEXURE-A#

Recommendations of 8th Semester Courses in Self-study Mode from NPTEL/ SWYAM Platform

Sr No	Course Code	Course Name	Duration (Weeks)	Institute Offering Course	Name of Professor
1	BTMEC801A	Fundamentals of Automotive Systems	12 Weeks	IITM	Prof. C. S. Shankar Ram
2	BTMEC801B	Mechanics of Fiber Reinforced Polymer Composite Structures	12 Weeks	IITG	Prof. Debabrata Chakraborty
3	BTMEC801C	Explosions and Safety	12 Weeks	IITM	Prof. K. Ramamurthi
4	BTMEC801D	Material Characterization	12 Weeks	IITM	Prof. Sankaran.S
5	BTMEC801E	Dealing with materials data : collection, analysis and interpretation	12 Weeks	IISc	Prof. M P Gururajan

**MASTER OF TECHNOLOGY
(Mechanical Engineering)**

Syllabus with effect from July 2018

Semester-I

Course Code	Type of Course	Name of the Course	Hours/Week			Credit	Examination Scheme				
			L	T	P		Theory		CA	PR/OR	Total
							TH	Test			
MMECH11	PCC	✓ Engineering Thermodynamics	3	1	--	4	60	20	20	--	100
MMECH12	PCC	✓ Machining and Forming Processes	3	1	--	4	60	20	20	--	100
MMECH13	PCC	✓ Mechanical Vibrations	3	1	--	4	60	20	20	--	100
MDE14A	Elective I	✓ Advanced Machine Design	3	--	--	3	60	20	20	--	100
MTE14B		✓ Utilization of Solar Energy									
MTE14C		✓ Advanced I.C. Engines									
MME14D		✓ Additive Manufacturing									
MMECH15A	Elective II	✓ Manufacturing Planning and Control	3	--	--	3	60	20	20	--	100

ME-XX15C		✓ Hydraulic, Pneumatic and Fluidic Control									
MTE15D		✓ Wind Energy									
MME15E		✓ Finite Element Method									
BSH16	HSMC	Communication Skills	2	--	--	2	--	--	25	25	50
MMECH17	PCC	Mechanical Engineering Lab	--	--	3	2	--	--	25	25	50
Total			17	3	3	22	300	100	150	50	600

Semester-II											
Course Code	Type of Course	Name of the Course	Hours/Week			Credit	Examination Scheme				
			L	T	P		Theory		CA	PR/OR	Total
							TH	Test			
MMECH21	PCC	✓ Advanced Fluid Mechanics and Heat Transfer	3	1	--	4	60	20	20	--	100
MMECH22	PCC	✓ Mechanical Design Analysis	3	1	--	4	60	20	20	--	100
MMECH23A	Elective III	Numerical Methods and Computational Techniques	3	--	--	3	60	20	20	--	100
ME-XX23B		✓ CAD- CAE									
MTE23B		✓ Computational Fluid Dynamics									
MTE23C		✓ Advanced Refrigeration									
MTE23D		✓ Design of Heat Exchangers									
MTE23E		✓ Alternative Fuels for I.C. Engines									
MTE24A		✓ Steam and Gas Turbines									
MME24B		✓ Surface Engineering									
MTE24B	Elective IV	✓ Cryogenic Engineering	3	--	--	3	60	20	20	--	100

MMECH24C		Nanotechnology									
MME24F		World Class Manufacturing									
MOE25A	Elective V	Research Methodology	3	--	--	3	60	20	20	--	100
MOE25B		Design of Experiments									
MOE25C		Advanced Optimization Techniques									
MOE25D		Environmental Engineering and Pollution Control									
MOE25E		Soft Computing Techniques									
MOE25F		Manufacturing Automation									
MOE25G		Modeling and Simulation									
MMECH26		PCC									
MMECH27	PCC	Mini Project	--	--	4	2	--	--	50	50	100
Total			15	6	4	21	300	100	200	100	700

Semester-III

Course Code	Type of Course	Name of the Course	Hours/Week			Credit	Examination Scheme				
			L	T	P		Theory		CA	PR/OR	Total
							TH	Test			
MMECH31	PCC	Project Management (Self Study Course)	--	--	--	2	--	--	50	50	100
MMECH32		OR Intellectual Property Rights (Self Study Course)	--	--	--	2	--	--	50	50	100
MMECH33	PCC	Project Stage -I	---	--	--	10	--	--	50	50	100
Total			---	--	--	12	--	--	100	100	200

Semester-IV

Course Code	Type of Course	Name of the Course	Hours/Week			Credit	Examination Scheme				
			L	T	P		Theory		CA	PR/OR	Total
							TH	Test			
MMECH41	PCC	Project Stage -II	---	--	--	20	--	--	100	100	200
Total			---	--	--	20	--	--	100	100	200

B. Tech. Mechanical Engineering
Semester-III
Effective from 2017-2018

Course Code	Course Name	L	T	P	C
BSH 301	Engineering Mathematics-III	3	1	0	4
ME 302 ✓	Machine Drawing and Computer-aided Drafting	2	0	0	2
ME 303 ✓	Thermodynamics	3	1	0	4
ME 304 ✓	Fluid Mechanics	3	1	0	4
ME 305 ✓	Materials Science and Metallurgy	3	0	0	3
BSH 306	Basic Human Rights	2	0	0	2
BSH 307	Elective - I	3	0	0	3
ME 308	Fluid Mechanics Lab	0	0	2	1
ME 309	Machine Drawing and Computer-aided Drafting Lab	0	0	4	2
ME 310	Materials Science and Metallurgy Lab	0	0	2	1
ME 311	NCC/NSS/Sports/Arts	0	0	0	0
		19	3	8	26

Elective-I (From Humanities and Basic Sciences)

BSH 307A	Physics of Engineering Materials
BSH 307B	Applied Chemistry
BSH 307C	Interpersonal Skills

Semester-IV

Course Code	Course Name	L	T	P	C
ME 401 ✓	Theory of Machines and Mechanisms-I	4	0	0	4
ME 402 ✓	Strength of Materials	3	1	0	4
ME 403 ✓	Manufacturing Processes-I	3	0	0	3
ME 404 ✓	Applied Thermodynamics	3	1	0	4
ME 405	Numerical Methods in Engineering	2	1	0	3
ME 406	Elective - II	3	0	0	3
ME 407	Theory of Machines and Mechanisms Lab-I	0	0	2	1
ME 408	Manufacturing Processes Lab-I	0	0	2	1
ME 409	Strength of Materials Lab	0	0	2	1
ME 410	Thermal Engineering Lab-I	0	0	2	1
ME 411	NCC/NSS/Sports/Arts	0	0	0	0
		18	3	8	25

Elective - II

ME 406A	NSS-I
ME 406B	Biology for Engineers
ME 406C	Value Education
ME 406D	Renewable Energy Sources

FACULTY OF SCIENCE AND TECHNOLOGY
Revised Structure w.e.f.2018-2019
T.Y. B.Tech. (Mechanical)

Sub Code / Faculty Name	SEMESTER-V	Contact Hrs / Week				Examination Scheme						
		Subject	L	T	P	Total	CT	TH	TW	P	Total	Credits
MED301	Design of Machine Elements I:	4	-	-	4	20	80	-	-	100	4	3 Hrs
MED302	Production Management:	4	-	-	4	20	80	-	-	100	4	3 Hrs
MED303	Heat Transfer:	4	-	-	4	20	80	-	-	100	4	3 Hrs
MED304	CAD/CAM/CAE:	4	-	-	4	20	80	-	-	100	4	3 Hrs
MED305	Theory of Machines:	4	-	-	4	20	80	-	-	100	4	4 Hrs
MED341-343	Elective II :	2	-	-	2	10	40	-	-	50	2	2 Hrs
MED321	Lab: Design of Machine Elements I:	-	-	2	2	-	-	25	25	50	1	
MED322	Lab: Heat Transfer:	-	-	2	2	-	-	25	25	50	1	
MED323	Lab: CAD/CAM/CAE:	-	-	2	2	-	-	25	25	50	1	
MED324	Lab: Theory of Machines:	-	-	2	2	-	-	50	-	50	1	
MED325	Minor Project:	-	-	2	2	-	-	50	-	50	1	
Total of semester-V		22	-	10	32	110	440	175	75	800	27	

Sub Code / Faculty Name	SEMESTER-VI	Contact Hrs / Week				Examination Scheme						
		Subject	L	T	P	Total	CT	TH	TW	P	Total	Credits
MED351	Design of Machine Elements II:	4	-	-	4	20	80	-	-	100	4	3 Hrs
MED352	Materials and Metallurgy:	4	-	-	4	20	80	-	-	100	4	3 Hrs
MED353	Internal Combustion Engines:	4	-	-	4	20	80	-	-	100	4	3 Hrs
BSH354	Industrial Management (All)	4	-	-	4	20	80	-	-	100	4	3 Hrs
*	Open Elective I	4	-	-	4	20	80	-	-	100	4	3 Hrs
MED355	Computational Techniques	2	-	-	2	10	40	-	-	50	2	2 Hrs
MED371	Lab: DME II:	-	-	2	2	-	-	25	25	50	1	
MED372	Lab: Materials and Metallurgy	-	-	2	2	-	-	25	25	50	1	
MED373	Lab: Internal Combustion Engines	-	-	2	2	-	-	25	25	50	1	
MED374	Lab: Computational Techniques	-	-	2	2	-	-	50	-	50	1	
MED375	Project I	-	-	2	2	-	-	-	50	50	1	
**	*Audit Course-I	2	-	-	2	-	-	-	-	-	-	
Total of semester-VI		24	-	10	34	110	440	125	125	800	27	
Grand Total of V& VI										1600	54	

L: Lecture hours per week T: Tutorial hours per week P: Practical hours per week CT: Class Test
TH: University Theory Examination TW: Term Work P: Practical/Oral Examination

Note: Interested students can opt for any one of the audit course offered by various departments.

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad
Proposed Syllabus Structure of B. E. (Mechanical Engineering) w. e. f. Academic Year 2014-15

Part I

Subject No.	Subject	Contact Hours / Week				Examination Scheme					Duration of Theory Examination	Remark	
		L	T	P	Total	CT	TH	TW	P	Total			
MED401	I. C. Engine	4		2	6	20	80				100	3	
MED402	Automatic Control System	4		2	6	20	80				100	3	
MED403	Metrology and Quality Control	4		2	6	20	80				100	3	
MED404	Turbo Machines	4		2	6	20	80				100	3	
	Elective-I*	4			4	20	80				100	3	
MED421	Lab-I I.C. Engine								25	25	50		
MED422	Lab-II Automatic Control System								25		25		
MED423	Lab-III Metrology and Quality Control								25	25	50		
MED424	Lab-IV Turbo Machines									25	25		
MED425	Lab-V												
	Seminar			2	2				50		50		
	Project-I			2	2					50	50		
		20		12	32	100	400	125	125	750			

Elective-I

MED441	Energy Conservation and Management
MED442	Power Plant Engineering
MED443	Production Planning and Control
MED444	Advanced Materials and Manufacturing
MED445	Modern Management Techniques
MED446	Open Elective

Part I

Subject No.	Subject	Contact Hours / Week				Examination Scheme					Duration of Theory Examination	Remark
		L	T	P	Total	CT	TH	TW	PR	Total		
MED451	Automobile Engineering	4		2	6	20	80			100	3	
MED452	Project Management and Operation Research	4		2	6	20	80			100	3	
MED453	Refrigeration and Air Conditioning	4		2	6	20	80			100	3	
	Elective-II*	4		2	6	20	80			100		
MED471	Lab-VI Automobile Engineering							25	25	50		
MED472	Lab-VII Project Management and Operation Research							25	25	50		
MED473	Lab-VIII Refrigeration and Air Conditioning							25	25	50		
MED474	Lab-IX							50		50		
	Project-II**			4	4			50	100	150		
		16		12	28	80	320	175	175	750		

Elective-II

MED491	Robotics and Industrial Automation
MED492	Machine Tool Design
MED493	Computational Fluid Dynamics
MED494	Industrial Engineering
MED495	Tribology
MED496	Open Elective

L: Lecture Hours per Week

T: Tutorial Hours per Week

P: Practical Hours per Week

CT: Class Test

TH: University Theory Exam.

TW: Term Work

PR: Practical/ Oral Exam.

Note: *Student can opt for open elective.

**Projects can be interdisciplinary.

SE Mechanical Engineering

Semester -I

Sub Code	Semester-I	Contact Hrs/Week				Examination Scheme						Dura of The Exan tio
	Subject	L	T	P	Total	CT	TH	TW	PR	Total	credits	
BSH201	Engineering Mathematics –III	4	--	--	4	20	80	--	--	100	4	3 F
MED202	Thermodynamics-I	4	--	--	4	20	80	--	--	100	4	3 F
MED203	Machine Drawing	4	--	--	4	20	80	--	--	100	4	4 F
MED204	Strength of Materials	4	--	--	4	20	80	--	--	100	4	3 F
MED205	Production Processes	4	--	--	4	20	80	--	--	100	4	3 F
MED221	Lab 1: Thermodynamics-I	--	--	2	2	--	--	25	25	50	1	
MED222	Lab 2: Machine Drawing	--	--	2	2	--	--	25	25	50	1	
MED223	Lab 3: Strength of Materials	--	--	2	2	--	--	25	--	25	1	
MED224	Lab 4: Workshop Practice-III	--	--	2	2	--	--	25	50	75	1	
MED225	Lab 5: Computer Aided Drafting	--	--	4	4	--	--	50	--	50	2	
	Total	20	0	12	32	100	400	150	100	750	26	

L: Lecture hours per week

T: Tutorial hours per week

CT: Class Test

TW: Term Work

TH: University Theory Examination

P: Practical hours per week

PR: Practical/Oral Examination

SE Mechanical Engineering

Semester-II

Sub Code	Semester-II	Contact Hrs/Week				Examination Scheme						Durat of The Exami on
	Subject	L	T	P	Total	CT	TH	TW	PR	Total	credits	
BSH251	Engineering Mathematics-IV	4	--	--	4	20	80	--	--	100	4	3 Hr
MED252	Thermodynamics-II	4	--	--	4	20	80	--	--	100	4	3 Hr
MED253	Theory of Machines-I	4	--	--	4	20	80	--	--	100	4	4 Hr
MED254	Electrical Machines	4	--	--	4	20	80	--	--	100	4	3 Hr
MED255	Machine Tools	4	--	--	4	20	80	--	--	100	4	3 Hr
MED271	Lab 6: Thermodynamics-II	--	--	2	2	--	--	25	25	50	1	
MED272	Lab 7: Theory of Machines-I	--	--	2	2	--	--	25	25	50	1	
MED273	Lab 8: Electrical Machines	--	--	2	2	--	--	50	--	50	1	
MED274	Lab 9: Workshop Practice-IV	--	--	2	2	--	--	25	25	50	1	
MED275	Lab 10: Communication Skills- I	--	--	4	4	--	--	50	--	50	2	
	Total	20	0	12	32	100	400	175	75	750	26	

L: Lecture hours per week

CT: Class Test

TH: University Theory Examination

PR: Practical/Oral Examination

T: Tutorial hours per week

TW: Term Work

P: Practical hours per week

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Proposed Syllabus Structure of T.E. (Mechanical Engineering) w.e.f. Academic Year 2013-14

Part-I

Subject No.	Subject	Contact Hours / Week				Examination Scheme						Remark
		L	T	P	Total	TH	CT	TW	P	Total	Duration of Theory Examination	
MED301	Design of Machine Elements-I	4		2	6	80	20			100	3	
MED302	Theory of Machines-II	4		2	6	80	20			100	3	
MED303	Metallurgy and Materials	4		2	6	80	20			100	3	
MED304	Fluid Mechanics and Machinery	4		2	6	80	20			100	3	
MED305	Industrial Management and Engineering Economics	4			4	80	20			100	3	
MED321	Lab-I Design of Machine Elements-I							25	25	50		
MED322	Lab-II Theory of Machines-II							50		50		
MED323	Lab-III Metallurgy and Materials							25		25		
MED324	Lab-IV Fluid Mechanics and Machinery							25	25	50		
BSH 331	Lab-V Communication Skills -II			2	2				50	50	01	Online Exam
MED326	Lab-VI Workshop-V			2	2			25		25		
	Total	20		12	32	100	400	125	125	750		

Part-II

Subject No.	Subject	Contact Hours / Week				Examination Scheme						Remarks
		L	T	P	Total	CT	TH	TW	P	Total	Duration of Theory Examination	
MED351	Design of Machine Elements-II	4		2	6	20	80			100	3	
MED352	Heat Transfer	4		2	6	20	80			100	3	
MED353	Industrial Hydraulics and Pneumatics	4		2	6	20	80			100	3	
MED354	Tool Engineering	4		2	6	20	80			100	4	
MED355	CAD / CAM / CAE	4		2	6	20	80			100	3	
MED356	Mechanical Measurements	2		2	4	10	40			50		Online Exam
MED371	Lab-VII Design of Machine Elements-II								25	25		
MED372	Lab-VIII Heat Transfer								25	25		
MED373	Lab-IX Industrial Hydraulics and Pneumatics								25	25		
MED374	Lab-X Tool Engineering								25	25		
MED375	Lab-XI CAD / CAM / CAE								25	25		
	Total	22		12	34	110	440		125	75	750	

L: Lecture hours per week

T: Tutorial Hours per week

P: Practical hours per week

TH: University Theory Examination

TW: Term Work

P: Practical / Oral Examination

FACULTY OF ENGINEERING AND TECHNOLOGY
Revised Structure
[Second Engineering (Mechanical/Production)]

Subject No.	SEMESTER-I Subject	Contact Hours / Week				Examination Scheme					Duration of Theory Examination
		L	T	P	Total	CT	TH	TW	P	Total	
BSH201	Engineering Maths-III	3	1		4	20	80			100	3 Hrs
✓MED202	Thermodynamics-I	4			4	20	80			100	4 Hrs
✓MED203	Machine Drawing	4			4	20	80			100	3 Hrs
✓MED204	Strength of Materials	4			4	20	80			100	3 Hrs
✓MED205	Production Processes-I	4			4	20	80			100	3 Hrs
MED221	Lab-I Thermodynamics-I			2	2			25	25	50	
MED222	Lab-II Machine Drawing			4	4			50	50	100	
MED223	Lab-III Strength of Materials			2	2			25	25	50	
MED224	Lab-IV Workshop - III			2	2			25	50	75	
	Total	19	1	10	30	100	400	125	125	750	

Subject No.	SEMESTER-II Subject	Contact Hours / Week				Examination Scheme					Duration of Theory Examination
		L	T	P	Total	CT	TH	TW	P	Total	
BSH251	Engineering Maths-IV	3	1		4	20	80			100	3 Hrs
✓MED253	Theory of Machines-I	4			4	20	80			100	4 Hrs
✓MED254	Thermodynamics-II	4			4	20	80			100	3 Hrs
✓MED255	Electrical Machines & Applied Electronics	4			4	20	80			100	3 Hrs
✓MED256	Production Processes-II	4			4	20	80			100	3 Hrs
MED271	Lab-V Theory of Machines-I			2	2			25	25	50	
MED272	Lab-VI Thermodynamics-II			2	2			25	25	50	
MED273	Lab-VII Electrical Machines & Applied Electronics			2	2			25	25	50	
MED274	Lab-VIII Workshop - IV			2	2			50	50	100	
BSH275	Lab-IX Communication Skill			2	2			50	50	100	
	Total	19	1	10	30	100	400	150	100	750	

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Semester – I

Course Code	Name of Subject	Teaching Scheme Contact hrs per week				Examination Scheme Marks					Duration of Theory Exam	Credit
		L	T	P	Total Hrs	Theory	Class Test	Term work	Viva- voce	Total		
✓ MME 601	Advanced Optimization Techniques	03	01	-	04	80	20	-	-	100	3 Hrs	4
✓ MME 602	Modern Engineering Materials	03	01	-	04	80	20	-	-	100	3 Hrs	4
✓ MME 603	Advanced I.C. Engines	03	01	-	04	80	20	-	-	100	3 Hrs	4
MME 641	Elective-I	03	01	-	04	80	20	-	-	100	3 Hrs	4
MME 642	Elective-II	03	01	-	04	80	20	-	-	100	3 Hrs	4
MME 621	Lab-I	-	-	04	04	-	-	50	-	50	-	2
MME 622	Lab – II	-	-	02	02	-	-	-	50	50	-	1
MME 623	Seminar – I	-	-	02	02	-	-	-	50	50	-	1
Total		15	05	08	28	400	100	50	100	650	15	24

* Elective Subjects:

Elective	Group A : Design	Group B : Production	Group C : Heat and Power
Elective-I (MME 641 A-C)	Computational Modeling and Simulation	Maintenance & Reliability Engineering	Advanced Thermodynamics
Elective-II (MME 642 A-C)	Machine Stress Analysis	Productivity Management	Advanced Heat Transfer

*Note: Candidates are required to opt the elective subjects (Elective I, II, III & IV) from the same group as mentioned above.

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Semester – II

Course Code	Name of Subject	Teaching Scheme Contact hrs per week				Examination Scheme Marks					Duration of Theory exam	Cre
		L	T	P	Total Hrs	Theory	Class Test	Term Work	Viva-voce	Total		
✓ MME 651	Advanced Machine Design	03	01	-	04	80	20	-	-	100	3 Hrs	4
✓ MME 652	Advanced Manufacturing Techniques	03	01	-	04	80	20	-	-	100	3 Hrs	4
✓ MME 653	Engineering Experimental Techniques	03	01	-	04	80	20	-	-	100	3 Hrs	4
✓ MME 691	Elective-III	03	01	-	04	80	20	-	-	100	3 Hrs	4
MME 692	Elective-IV	03	01	-	04	80	20	-	-	100	3 Hrs	4
MME 671	Lab-III	-	-	04	04	-	-	50	-	50	-	2
MME 672	Lab-IV	-	-	02	02	-	-	-	50	50	-	1
MME 673	Seminar – II	-	-	02	02	-	-	-	50	50	-	1
Total		15	05	08	28	400	100	50	100	650	15	24

*Elective Subjects:

Elective	Group A : Design	Group B : Production	Group C : Heat and Power
Elective-III (MME 691)	Finite Elements Methods (FEM)	Computer Aided Design (CAD)	Computational Fluid Dynamics (CFD)
Elective-IV (MME 692)	Mechanical Vibrations	Computer Integrated Manufacturing (CIM)	Refrigeration and Cryogenic Systems

*Note: Candidates are required to opt the elective subjects (Elective I, II, III & IV) from the same group as mentioned above.

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Semester – III

Course code	Name of the Subject	Teaching Scheme Hrs per week			Examination scheme Marks				Credit
		L	CH	Total hrs	Theory	Term work	Viva voce	Total	
✓ MME 731	Dissertation Part – I	-	12	12	-	50	50	100	12
	Total	-	12	12	-	50	50	100	12

Semester – IV

Course code	Name of the Subject	Teaching Scheme Hrs per week			Examination scheme Marks				Credit
		L	CH	Total hrs	Theory	Term work	Viva voce	Total	
✓ MME 781	Dissertation Part- II	-	20	20	-	100	200	300	20
	Total	-	20	20	-	100	200	300	20
	Grand Total							1700	80

L: Lecture hours per week T: Tutorial Hours per week P: Practical hours per week CH: Contact Hours

$$\begin{aligned}
 \text{Total Credits} &= \text{SEM I} + \text{SEM II} + \text{SEM III} + \text{SEM IV} \\
 &= 24 + 24 + 12 + 20 \\
 &= 80
 \end{aligned}$$