Bachelor of Technology in Mechanical Engineering-(2019-20)

Semester	Course Code Course Name (L-T-P)C							General Proficiency Courses	Software Skill Enhancement/Soft Skill Development/ Competitive Exam Preparation	Community SERVICE	Lect. Courses	L	T	P	Weekly Contact	Credits
I	MAL151 Engineering Maths-I (3-0-2) 4	CHL150 Engg. Chemistry (1-0-2) 2	CLL101 Eff. Comm.-I (2-0-0) 2	CSL106 FOCP-I (2-0-6) 5	MEP110 Engg Graphics & Drg (1-0-3) 2.5	CLL 120 Human Values and professional Ethics (1-0-1) 1.5	CSL110 Problem Solving and design thinking (0-0-4) 2	MER118 General Proficiency (--) 1			6	10	--	18	28	20
II	MAL152 Engineering Maths-II (3-0-2) 4	PYL150 Engineering Physics (3-0-2) 4	CLL102. Eff. Comm.-II (2-0-0) 2	CSL108 FOCP-II (2-0-6) 5	MEL150 Basics of Mechanical and Civil Engineering (2-0-2) 3	ECL110 Basics of Electrical & Electronics Engg. (2-0-2) 3		MER119 General Proficiency (--) 1			6	14	--	14	28	22
	MED 210: Minor Project															02
III	MEL215 Production Engineering (3-0-2) 4	MEL203 Mechanics of Solids-I (3-0-2) 4	MEL290 Thermodynamics (3-1-0) 4	MEL205 Engg. Mechanics (3-1-0) 4	MEP207 M/c Drawing (0-0-4) 2	OE-1 3 Credits		MER218 General Proficiency (--) 1	MEP200 Special Software Solidworks/ANSYS/ MATLAB/other software packages (0-0-2) 1	MES200 CS-III (35 Hours)	5	15	2	10	27	23
IV	MEL 314 Energy Conversion (3-0-2) 4	MEL206 Theory of Machines (3-1-0) 4	MEL208 Fluid Mechanics (3-1-0) 4	MEL209 Materials Science and Engg. (2-0-2) 3	OE-2 3 Credits	CLP120 Creative Writing (0-0-2) 1		MER219 General Proficiency (--) 1	MEP220 Special Software Solidworks/ANSYS/ MATLAB/other software packages (0-0-2) 1	MES200 CS-IV (35 Hours) 1 Credit	5	14	2	8	24	21+1
	MET 310: Industrial Training I															02

V	**MEL202 Heat and Mass Transfer (3-1-2) 5**	**MEL207 Machine Design I (3-1-0) 4**	**MEL303 Fluid Machines (2-1-2) 4**	**Foreign Language Elective (1-2-0) 3**	**SML300 Entrepreneurship (2-0-2) 3 Credits**	**MEC321 Seminar 1 Credit**		**MER318 General Proficiency (--) 1**	**MEP300 Special Software Solidworks/ANSYS/ MATLAB/other software packages (0-0-2) 1**	**MES300** CS-V (35 Hours)	5	**11**	**5**	8	24	22
VI	**MEL 326 Instrumentation & Control Engineering (3-0-2) 4**	**MEL 310 Industrial Engineering (3-1-0) 4**	**MEL 328 Machine Design II (2-2-0) 4**	**CHL100 Environmental Studies (3-0-0) 3**	**OE-3 3 Credits**	**MED320 Project Based Learning Tinkering lab. 1 Credit**		**MER319 General Proficiency (--) 1**	**CLP300 Campus to Corporate (0-0-2) 1**	**MES300** CS-VI (35 Hours) 1 Credit	5	14	3	4	21	21+1
		MET 410: Industrial Training-II														03
VII	**MED423 Major Project I Credits-4**	**MEL401 Operations Research (2-1-0) 3**	**PE-1 3 Credits**	**PE-2 3 Credits**	**PE-3 3 Credits**	**PE-4 3 Credits**		**MER418 General Proficiency (--) 1**		**MES400** CS-VII (70 Hours)	5	14	1		15	**20**
VIII	**MED424 Major Project II Credits-6**	**PE-5 3 Credits Could be offered through MOOCs**	**PE-6 3 Credits Could be offered through MOOCs**			**Optional pre-placement training (6 credits). Student opting for it is not required to register for Major Project II**		**MER419 General Proficiency (--) 1**	**SEG400 Self Study Course GATE NC**	**MES400** CS-VIII (70 Hours) 2 Credit	2	6			6	**13+2**
	CORE COURSES = 109 (BS=20, ESTA=30.5, HMS=10.5, PC=48); ELECTIVE COURSES = 30 (HMS=3, OE=9, PE=18); SPT = 19 ; VA = 3 ; GP = 8														**TOTAL CREDITS = 169 +4= 173**	

Name of Specialization	Set of Programme Electives for Specialization					
	4th year					
	PE-1, PE-2, PE-3,PE-4					
Thermal Engineering	**MEL 312** ICE & GT (2-0-2) 3	**MEL 402** RAC (2-1-2) 4	**MEL 404** Power Plant Engineering (2-1-0) 3	**MEL -611 TH** Renewable Energy Systems (2-1-0) 3	**MEL 410** Design of Thermal Systems (2-1-0) 3	**MEL 621-TH** Analysis of IC Engine systems (2-1-0) 3
Mechanical Engineering Design	**MEL 315** Mechanics of Solids II (2-1-0) 3	**MEL 625-MD** Vibration and Noise Engineering (2-0-2)3	**MEL 627-MD** Mechatronics (2-0-2)3	**MEL 510** Introduction to FEM **(2-1-0) 3**	**MEL 420** Advanced Theory of Machines (2-0-2) 3	**MEL 560** Advanced Machine Design (2-1-0) 3
Industrial & Production Engineering	**MEL 318** Modern Manufacturing Processes (3-0-0) 3	**MEL 403** Computer Aided Manufacturing (2-0-2)3	**MEL 627-MD** Mechatronics (2-0-2)3	**MEL 408** Quality Assurance and Reliability Engineering (2-1-0) 3	**MEL 412** Supply Chain Management (2-1-0) 3	**MEL 570** Production & Operations Management (2-1-0) 3
Automobile Engineering	**MEL 625-MD** Vibration and Noise Engineering (2-0-2) 3	**MEL 319** Automobile System Engineering (2-1-0) 3	**MEL 418** Vehicle Development and Testing (2-1-0) 3	**MEL 627-MD** Mechatronics (2-0-2)3	**MEL 409** Emerging Automotive Technologies (2-1-0) 3	**MEL 613-AE** Automotive Safety **(**2-1-0) 3

Minimum and maximum number of registered students in each elective should be 20 and 60 respectively.

Programme Electives (PE) for Non Specialization		L-T-P	C
MEL 311	Advanced Processing of Materials & Case Studies	2-1-0	3
MEL 312	ICE & GT	2-0-2	3
MEL 315	Mechanics of Solids II	2-1-0	3
MEL 318	Modern Manufacturing Processes	3-0-0	3
MEL 319	Automobile System Engineering	2-1-0	3
MEL 320*	Selected Topics-I	2-1-0	3
MEL 322	Metrology	2-0-2	3
MEL 402	Refrigeration & Air conditioning	2-1-2	4
MEL 403	Computer Aided Manufacturing	2-0-2	3
MEL 404	Power Plant Engineering	2-1-0	3
MEL-405	Introduction to Biomechanics	2-1-0	3
MEL 408	Quality Assurance and Reliability Engineering	2-1-0	3
MEL 409	Emerging Automotive Technologies	2-1-0	3
MEL 410	Design of Thermal Systems	2-1-0	3
MEL 412	Supply Chain Management	2-1-0	3
MEL 414	Industrial Tribology	2-1-0	3
MEL 415	Maintenance Engineering & Management	2-1-0	3
MEL 417	Automotive Electronics	2-1-0	3
MEL 418	Vehicle Development and Testing	2-1-0	3
MEL 420	Advanced Theory of Machines	2-0-2	3
MEL 421*	Selected Topics – II	2-1-0	3
MEL 510	Introduction to FEM	2-1-0	3
MEL 520	Advanced Thermodynamics	2-1-0	3
MEL 530	Advanced Manufacturing Processes	2-1-0	3
MEL 550	Advanced Heat & Mass Transfer	2-1-0	3

MEL 560	Advanced Machine Design	2-1-0	3
MEL 570	Production and Operations Management	2-1-0	3
MEL 580	Advanced Fluid Dynamics	2-0-2	3
MEL 590	Selected Topics in Mechanical Engineering	2-1-0	3
MEL 603-MD	Design for Manufacturing and Assembly	2-1-0	3
MEL-607-MD	Advanced Mechanics of Solids	2-1-0	3
MEL-611-TH	Renewable Energy Systems	2-1-0	3
MEL 613-IP	Project Management	2-1-0	3
MEL 613-AE	Automotive Safety	2-1-0	3
MEL-621-TH	Analyis of IC Engine Systems	2-1-0	3
MEL-625MD	Vibration and Noise Engineering	2-0-2	3
MEL 627-MD	Mechatronics	2-0-2	3
SML 617	Materials Management	2-0-2	3

*Syllabi for courses MEL 320 and MEL 421 (Selected Topics-I and Selected Topics-II) shall include topics from latest Industry practices, Research and Technology. The delivery of content of these courses shall be done by the area experts from Industry and Academia.