

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	MES201 CS-III (35 Hours)	5	15	2	10	27	23
IV	MEL314 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	MES202 CS-IV (35 Hours) 1 Credit	5	14	2	8	24	21+ 1
MET 310: Industrial Training I + Community Service (70 Hrs)															02	

V	MEL202 Heat and Mass Transfer (3-1-2) 5	MEL207 Machine Design I (3-1-0)4	MEL303 FluidMachines (2-1-2) 4	Foreign Language Elective (1-2-0)3	SML300 Entrepreneurs hip (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	MES301 CS-V	5	11	5	8	24	22
VI	MEL 326 Instrumentatio n & Control Engineering (3-0-2) 4	MEL 310 Industrial Engineering (3-1-0) 4	MEL328 MachineDesignII (2-2-0) 4	CHL100 Environm ental 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	MES302 CS-VI (140 Hours) * 2 credits	5	14	3	4	21	21+ 2
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		MES401 CS-VII	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	MES402 CS-VIII (140 Hours) 2 Credit	2	6			6	13+ 2
TOTAL CREDITS = 169 +5= 174																

*Students can utilise the summer/winter break period to complete the remaining 140 community service hours every year.

Name of Specialization	Set of Programme Electives for Specialization					
	4 th 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	Analysis 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.