

FACULTY OF ENGINEERING AND TECHNOLOGY

Name of the Programme: Bachelor of Technology (Mechanical Engineering) : 2022-23 onwards

Semester/Year	Council Code (If any)	Subject Code (If already existing)	Nomenclature	Theory or Practical	Core/ AECC/ SEC/ VAC/ DSE/ GE	For ERP	Theory/Practical (Result Combined or Separate)	L	T	P	Credits	Contact Hours	Theory		Theory (Internal)				Practical				Practical (Internal)				Overall Pass Marks	Scheme of Examinations [Theory+Internal or Practical+Internal]			
													Max	Pass	Mid Term	Assignment	Project/Seminar	Max	Pass	Demonstration/Presentation	Viva-Voce	Max	Pass	Attendance	Viva-Voce in each class	Project/Lab Work			Conduct/Demonstration	Max	Pass
I	-	13030109	Engineering Mathematics-I	Theory	BSC	Core	Separate	3	1	0	4	4	60	24	20	10	10	40	16										40	Theory + Internal	
I	-	13030110	Engineering Mechanics	Theory	EAS	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16										40	Theory + Internal	
I	-	13030111	Basics of Electrical and Electronics Engineering	Theory	EAS	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16										40	Theory + Internal	
I	-	13030112	Engineering Graphics and Design	Theory	EAS	Core	Separate	1	0	0	1	1	60	24	20	10	10	40	16										40	Theory + Internal	
I	-	13030108	Engineering Graphics and Design Lab	Practical	EAS	Core	Separate	0	0	4	2	4								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal
I	-	13030113	Engineering Mechanics Lab	Practical	EAS	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal
I	-	13030114	Basics of Electrical & Electronics Engineering Lab	Practical	EAS	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal
I	-	13030115	Python for Engineers	Practical	EAS	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal
I	-	--	VAC	Theory	VAC	VAC	Separate	2	0	0	2	2	30	12	10	5	5	20	8										20	Theory + Internal	
I	-	--	AECC	Theory	AECC	AECC	Separate	2	0	0	2	2	30	12	10	5	5	20	8										20	Theory + Internal	
			Total Credits for the Semester					14	1	10	20	25																			
			Minor Degree in Robotics																												
I	-	13030116	Robotics Engineering & Applications	Theory	MD	DSE	Separate	3	-	-	3	3	60	24	20	10	10	40	16										40	Theory + Internal	
I	-	13030117	Robotics Engineering & Applications Lab	Practical	MD	DSE	Separate	-	-	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal
			Total Credits for the Semester with Minor Degree in Robotics					17	1	12	24	30																			
			Minor Degree in Electric Vehicles																												
I	-	13030118	Introduction to Hybrid and Electric Vehicles	Theory	MD	DSE	Separate	3	-	-	3	3	60	24	20	10	10	40	16										40	Theory + Internal	
I	-	13030119	Introduction to Hybrid and Electric Vehicles Lab	Practical	MD	DSE	Separate	-	-	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal
			Total Credits for the Semester with Minor Degree in Electric Vehicle					17	1	12	24	30																			
II	-	13030210	Engineering Mathematics-II	Theory	BSC	Core	Separate	3	1	0	4	4	60	24	20	10	10	40	16										40	Theory + Internal	
II	-	13030211	Programming for Problem Solving	Theory	EAS	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16										40	Theory + Internal	
II	-	13030212	Design Thinking	Theory	HSMC	Core	Separate	2	0	0	2	2	60	24	20	10	10	40	16										40	Theory + Internal	
II	-	13030213	Workshop Technology	Theory	EAS	Core	Separate	1	0	0	1	1	60	24	20	10	10	40	16										40	Theory + Internal	
II	-	13030207	Advance Graphics and Design Lab	Practical	EAS	Core	Separate	0	0	4	2	4								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal
II	-	13030214	Programming for Problem Solving Lab	Practical	EAS	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal
II	-	13030215	Workshop Technology Lab	Practical	EAS	Core	Separate	0	0	4	2	4								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal
II	-	--	VAC	Theory	VAC	VAC	Separate	2	0	0	2	2	30	12	10	5	5	20	8										20	Theory + Internal	
II	-	--	AECC	Theory	AECC	AECC	Separate	2	0	0	2	2	30	12	10	5	5	20	8										20	Theory + Internal	
			Total Credits for the Semester					13	1	10	19	24																			
			Minor Degree in Robotics																												
II	-	13030216	Mobile Robots	Theory	MD	DSE	Separate	3	-	-	3	3	60	24	20	10	10	40	16										40	Theory + Internal	
II	-	13030217	Mobile Robots Lab	Practical	MD	DSE	Separate	-	-	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal
			Total Credits for the Semester with Minor Degree in Robotics					16	1	12	23	29																			
			Minor Degree in Electric Vehicles																												
II	-	13030218	Autonomous Vehicles	Theory	MD	DSE	Separate	3	-	-	3	3	60	24	20	10	10	40	16										40	Theory + Internal	
II	-	13030219	Autonomous Vehicles Lab	Practical	MD	DSE	Separate	-	-	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal

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													Max	Pass	Mid Term	Assignment	Project/Seminar	Max	Pass	Demonstration/Presentation	Viva-voce	Max	Pass	Attendance	Viva-Voce in each class	Project/Lab Work			Conduct/Demonstration	Max	Pass			
Total Credits for the Semester with Minor Degree in Electric Vehicles								16	1	12	23	29																						
III	-	13030332	Engineering Mathematics-III	Theory	BSC	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16										40	Theory + Internal				
III	-	13030333	Biology for Engineers	Theory	BSC	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16										40	Theory + Internal				
III	-	13030334	Material Engineering & Technology	Theory	Core	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16										40	Theory + Internal				
III	-	13030335	Engineering Thermodynamics	Theory	Core	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16										40	Theory + Internal				
III	-	13030336	Manufacturing Processes	Theory	Core	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16										40	Theory + Internal				
III	-	13030331	Industrial Internship	Practical	Core	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal			
III	-	13030337	Material Engineering & Technology Lab	Practical	Core	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal			
III	-	13030338	Manufacturing Processes Lab	Practical	Core	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal			
III	-	--	Value-Added/Skill Enhancement Course-III	Practical	VAC-III	VAC	Separate	2	0	0	2	2	30	12	10	5	5	20	8										20	Theory + Internal				
Total Credits for the Semester								17	0	6	20	23																						
Minor Degree in Robotics																																		
III	-	13030339	Mechanics of Robot	Theory	MD	DSE	Separate	3	-	-	3	3	60	24	20	10	10	40	16											40	Theory + Internal			
III	-	13030340	Mechanics of Robot Lab	Practical	MD	DSE	Separate	-	-	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal			
Total Credits for the Semester with Minor Degree in Robotics								20	0	8	24	28																						
Minor Degree in Electric Vehicles																																		
III	-	13030341	Battery Management System	Theory	MD	DSE	Separate	3	-	-	3	3	60	24	20	10	10	40	16											40	Theory + Internal			
III	-	13030342	Battery Management System Lab	Practical	MD	DSE	Separate	-	-	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal			
Total Credits for the Semester with Minor Degree in Electric Vehicles								20	0	8	24	28																						
Minor Degree in Computer Science Engineering																																		
III	-	13030343	Object Oriented Programming	Theory	MD	DSE	Separate	3	-	-	3	3	60	24	20	10	10	40	16											40	Theory + Internal			
III	-	13030344	Object Oriented Programming Lab	Practical	MD	DSE	Separate	-	-	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal			
Total Credits for the Semester with Minor Degree in Computer Science								20	0	8	24	28																						
IV	-	13030434	Instrumentation and Control Engineering	Theory	Core	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal			
IV	-	13030435	Strength of Materials	Theory	Core	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal			
IV	-	13030436	Fluid Mechanics	Theory	Core	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal			
IV	-	13030437	Theory of Machines	Theory	Core	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal			
IV	-	13030438	Instrumentation and Control Engineering Lab	Practical	Core	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal			
IV	-	13030439	Strength of Materials Lab	Practical	Core	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal			
IV	-	13030440	Fluid Mechanics Lab	Practical	Core	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal			
IV	-	13030441	Theory of Machines Lab	Practical	Core	Core	Separate	0	0	2	1	2								20	20	40	16	10	10	10	30	60	24	40	Practical + Internal			
IV	-	--	MGE	Theory	MGE	GE	Separate	4	0	0	4	4	60	24	20	10	10	40	16											40	Theory + Internal			
IV	-	--	AECC	Theory	AECC	AECC	Separate	2	0	0	2	2	30	12	10	5	5	20	8											20	Theory + Internal			
Total Credits for the Semester								18	0	8	22	26																						
Minor Degree in Robotics																																		
IV	-	13030442	Sensors & Actuators	Theory	MD	DSE	Separate	3	-	-	3	3	60	24	20	10	10	40	16											40	Theory + Internal			

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													Max	Pass	Mid Term	Assignment	Project/Seminar	Max	Pass	Demonstration/Presentation	Viva-voce	Max	Pass	Attendance	Viva-Voce in each class			Project/Lab Work	Conduct/Demonstration	Max	Pass	
IV	-	13030443	Sensors & Actuators Lab	Practical	MD	DSE	Separate	-	-	2	1	2							20	20	40	16	10	10	10	30	60	24	40	Practical + Internal		
			Total Credits for the Semester with Minor Degree in Robotics					21	0	10	26	31																				
			Minor Degree in Electric Vehicles																													
IV	-	13030444	Powertrain Design	Theory	MD	DSE	Separate	3	-	-	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
IV	-	13030445	Powertrain Design Lab	Practical	MD	DSE	Separate	-	-	2	1	2							20	20	40	16	10	10	10	30	60	24	40	Practical + Internal		
			Total Credits for the Semester with Minor Degree in Electric Vehicles					21	0	10	26	31																				
			Minor Degree in Computer Science Engineering																													
IV	-	13030446	Database Management System	Theory	MD	DSE	Separate	3	-	-	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
IV	-	13030447	Database Management System Lab	Practical	MD	DSE	Separate	-	-	2	1	2							20	20	40	16	10	10	10	30	60	24	40	Practical + Internal		
			Total Credits for the Semester with Minor Degree in Computer Science					21	0	10	26	31																				
V	-	13030534	Design of Machine Elements	Theory	Core	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030535	Applied Thermodynamics	Theory	Core	Core	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
			Choose any one from PEI																													
V	-	13030536	Refrigeration & Air Conditioning	Theory	PE-I	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030537	Automobile Engineering	Theory	PE-I	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030538	Numerical Methods	Theory	PE-I	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030539	Product Design for Manufacturing	Theory	PE-I	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030540	Composite Materials	Theory	PE-I	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
			Choose any one from PEII																													
V	-	13030541	Steam Power Generation	Theory	PE-II	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030542	Total Quality Management	Theory	PE-II	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030543	Production Planning & Control	Theory	PE-II	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030544	Mechanical Vibration	Theory	PE-II	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030545	Tool Design	Theory	PE-II	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030533	Industrial Training-I	Practical	Core	Core	Separate	0	0	2	1	2							20	20	40	16	10	10	10	30	60	24	40	Practical + Internal		
V	-	13030546	Design of Machine Elements Lab	Practical	Core	Core	Separate	0	0	2	1	2							20	20	40	16	10	10	10	30	60	24	40	Practical + Internal		
V	-	13030547	Applied Thermodynamics Lab	Practical	Core	Core	Separate	0	0	2	1	2							20	20	40	16	10	10	10	30	60	24	40	Practical + Internal		
V	-	13030533	Industrial Training-I	Practical	Core	Core	Separate	0	0	2	1	2							20	20	40	16	10	10	10	30	60	24	40	Practical + Internal		
V	-	--	MGE/Open Elective-II	Theory	OE-II	Core	Separate	4	0	0	4	4	60	24	20	10	10	40	16										40	Theory + Internal		
V	-	--	Ability Enhancement Core Course -IV	Theory	AECC	AECC-IV	Separate	2	0	0	2	2	30	12	10	5	5	20	8										20	Theory + Internal		
			Total Credits for the Semester					18	0	6	21	24																				
			Minor Degree in Robotics																													
V	-	13030548	Pneumatics & Control	Theory	MD	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	
V	-	13030549	Pneumatics & Control Lab	Practical	MD	DSE	Separate	0	0	2	1	2							20	20	40	16	10	10	10	30	60	24	40	Practical + Internal		
			Total Credits for the Semester with Minor Degree in Robotics					21	0	8	25	29																				
			Minor Degree in Electric Vehicles																													
V	-	13030550	Plug-in Electric Vehicles in Smart Grid	Theory	MD	DSE	Separate	3	0	0	3	3	60	24	20	10	10	40	16											40	Theory + Internal	

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													Max	Pass	Mid Term	Assignment	Project/Seminar	Max	Pass	Demonstration/Presentation	Viva-voce	Max	Pass		
TOTAL CREDITS REQUIRED FOR B.Tech. (ME) DEGREE : 157																									
TOTAL CREDITS REQUIRED FOR B.Tech (ME) with minors in Robotics DEGREE : 185																									
TOTAL CREDITS REQUIRED FOR B.Tech (ME) with minors in Electric Vehicles DEGREE : 185																									
TOTAL CREDITS REQUIRED FOR B.Tech (ME) with minors in Computer Science Engineering DEGREE : 177																									
Student can earn 20% credits through online courses offered by SWAYAM/MOOCs recognized by UGC/AICTE																									
Student can also opt for offline course of the department. instead of MOOCs course with permission from HOD and Dean																									