

B.Tech. (Mechatronics Engineering) 2022-26

Year	Semester-I	L	P	U	Semester-II	L	P	U	
I	Mathematics-I	3	0	3	Mathematics-II	3	0	3	
	English	2	2	3	Physics	3	2	4	
	Introduction to Electrical & Electronics Sciences	3	2	4	Environment Sciences & SDGs	2	0	2	
	Chemistry	3	2	4	Digital Signal Processing	3	0	3	
	Introduction to DS and AI	3	0	3	Professional Communication	3	0	3	
	Computer Programming	3	2	4	Workshop Practice	2	2	3	
	Essence of Indian Traditional Knowledge (Audit)				Engineering Graphics	2	2	3	
Total No of Credits		21			Total No of Credits		21		
II	Semester-III				Semester-IV				
	Introduction to IOT	3	0	3	Strength of Materials	2	2	3	
	Object Oriented Programming Concepts	2	4	4	Thermal Engineering	3	0	3	
	Mathematics-III	3	0	3	FM and HM	3	2	4	
	Elements of Mechatronics	3	0	3	Industry Coding Practice (Python and R)	2	2	3	
	Engineering Mechanics	3	0	3	Matlab based Numerical Methods	3	0	3	
	Principles of Managerial Economics	3	0	3	Data Structures	2	4	4	
Kinematics & Dynamics of Machinery	3	0	3	Design of Machine Elements	3	0	3		
CRT	0	2	1	CRT	0	2	1		
Total No of Credits		23			Total No of Credits		24		
SUMMER INTERNSHIP PROGRAM I (for Internship option only)									
5									
III	Semester-V				Semester-VI				
	Control Systems	3	0	3	Microprocessor and Micro controllers	3	0	3	
	Sensors , Actuators and Drivers	3	2	4	Digital Humanities Elective I	3	0	3	
	Manufacturing Processes and Metrology	2	2	3	Mechatronic System Design	3	0	3	
	CAD/CAM	3	0	3	Autonomous Vehicles	3	0	3	
	Micro Electro Mechanical Systems	3	0	3	Intelligent Transport Systems	3	0	3	
	Autotronics	3	0	3	Robotics and Automation	3	0	3	
Audit Course	0	0	0	Special Project /TIP/Capstone Project	0	6	3		
CRT	0	2	1	CRT	0	2	1		
Total No of Credits		20			Total No of Credits		22		
IV	Semester-VII				Semester-VIII				
	Internship Program II /Thesis				Internship Program II /Thesis				
	Electives (4)+ Professional/Discipline				Electives (4)+ Professional/Discipline				
Humanities Electives (1)				Humanities					

			Electives (1)	
Total No of Credits	20/18	Total No of Credits	20/18	
Total No of Credits			174	

Digital Humanities Electives I (VI Semester)			
Course Title	L	P	U
Social Innovation	3	0	3

Specialization Electives (VII/VIII Semester)			
Robotics			
Course Title	L	P	U
Advances in Robotics	3	0	3
Haptics	3	0	3
Computational Motion Planning	3	0	3
Humanoids	3	0	3
Human Robot Interaction (HRI)	3	0	3
Mobile Robotics	3	0	3
Unmanned Aerial Vehicles	3	0	3

Bio-Robotics			
Course Title	L	P	U
Medical Devices	3	0	3
Tissue Modelling	3	0	3
Medical Image Processing	3	0	3
Cognitive Robotics	3	0	3
Surgical Robots	3	0	3
Machine Perception	3	0	3

Medical Robotics			
Course Title	L	P	U
Medical Devices	3	0	3
Tissue Modelling	3	0	3
Medical Image Processing	3	0	3
Cognitive Robotics	3	0	3
Surgical Robots	3	0	3
Machine Perception	3	0	3

Mechatronics			
Course Title	L	P	U
Nano Electro Mechanical Systems	3	0	3
Smart Materials	3	0	3
CNC Technology	3	0	3
Computer Integrated Manufacturing	3	0	3
Hydraulic and Pneumatic Systems	3	0	3

Humanities Electives			
Course Title	L	P	U
Dynamics of Social Change	3	0	3
Introduction to Psychology	3	0	3
Heritage of India	3	0	3
Modern Political Science	3	0	3
Public Administration	3	0	3
Professional Ethics	3	0	3