

B.Tech (Mechatronics Engineering) Program

General Structure (2022-26)

Year	Course Code	Semester-I	L	P	U	Course Code	Semester-II	L	P	U	
I		Mathematics-I	3	0	3		Mathematics-II	3	0	3	
		English Language Skills	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		Digital Fabrication	2	2	3	
		Essence of Indian Traditional Knowledge (Audit)	0	0	0		Engineering Graphics	2	2	3	
Total No of Credits			17	8	21	Total No of Credits			18	6	21
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	
II		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			20	6	23	Total No of Credits			18	12	24
SUMMER INTERNSHIP PROGRAM I (for Internship option only)										5	
Semester-V					Semester-VI						
		Control Systems	3	0	3		Microprocessor and Micro controllers	3	0	3	
III		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			17	6	20	Total No of Credits			18	8	22
Semester-VII					Semester-VIII						
IV	IP401/	Internship Program II /Thesis				IP401/	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 Code	Course Title	L	P	U
	Social Innovation	3	0	3

Specialization Electives (VII/VIII Semester)

Robotics				
Course Code	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 Code	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 Code	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 Code	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 Code	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