



**GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR**

SESSION PLAN

5TH SEMESTER, BRANCH-MECHANICAL(GROUP 1)

MECHATRONICS(TH-4)

Name of the Faculty – ER. SANJAY KUMAR BISHOYEE						
Topics to be taken				Actually taken		
SL NO & CHAPTER	No. of Periods assigned by SCTE & VT	Details of the topics	PLANNED DATE	Details of the topics	ACTUAL DATE	Remarks
1. INTRODUCTION TO MECHATRONICS	5	1.1 Definition of Mechatronics	2.08.2023 TO 9.08.2023	1.1 Definition of Mechatronics	2.08.2023	
		1.2 Advantages & disadvantages of Mechatronics		1.2 Advantages & disadvantages of Mechatronics		
		1.3 Application of Mechatronics		1.3 Application of Mechatronics	3.08.2023	
		1.4 Scope of Mechatronics in Industrial Sector		1.4 Scope of Mechatronics in Industrial Sector	4.08.2023	
		1.5 Components of a Mechatronics System		1.5 Components of a Mechatronics System	5.08.2023	
		1.6 Importance of mechatronics in automation		1.6 Importance of mechatronics in automation	9.08.2023	
2. SENSORS AND TRANSDUCERS	10	2.1Defination of Transducers	10.08.2023 TO 25.08.2023	2.1Defination of Transducers	10.08.2023	
		2.2 Classification of Transducers		2.2 Classification of Transducers	11.08.2023	
		2.3 Electromechanical Transducers		2.3 Electromechanical Transducers	12.08.2023	
		2.4 Transducers Actuating Mechanisms		2.4 Transducers Actuating Mechanisms	16.08.2023	
		2.5 Displacement & Positions Sensors		2.5 Displacement & Positions Sensors	17.08.2023	
		2.6 Velocity, motion, force and pressure sensors.		2.6 Velocity, motion, force and pressure sensors.	18.08.2023	
		2.7 Temperature and light sensors.		2.7 Temperature and light sensors.	19.08.2023	
					23.08.2023	
					24.08.2023	
					25.08.2023	

3. ACTUATORS- MECHANICAL, ELECTRICAL	10	3.1Mechanical Actuators 3.1.1 Machine, Kinematic Link, Kinematic Pair 3.1.2 Mechanism, Slider crank Mechanism 3.1.3 Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear 3.1.4 Belt & Belt drive 3.1.5 Bearings 3.2 Electrical Actuator 3.2.1 Switches and relay 3.2.2 Solenoid 3.2.3 D.C Motors 3.2.4 A.C Motors 3.2.5 Stepper Motors 3.2.6 Specification and control of stepper motors 3.2.7 Servo Motors D.C & A.C	26.08.2023 TO 15.09.2023	3.1Mechanical Actuators 3.1.1 Machine, Kinematic Link, Kinematic Pair 3.1.2 Mechanism, Slider crank Mechanism 3.1.3 Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear 3.1.4 Belt & Belt drive 3.1.5 Bearings 3.2 Electrical Actuator 3.2.1 Switches and relay 3.2.2 Solenoid 3.2.3 D.C Motors 3.2.4 A.C Motors 3.2.5 Stepper Motors 3.2.6 Specification and control of stepper motors 3.2.7 Servo Motors D.C & A.C	26.08.2023 31.08.2023 1.09.2023 2.09.2023 7.09.2023 8.09.2023 9.09.2023 13.09.2023 14.09.2023 15.09.2023	
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4. PROGRAMMABLE LOGIC CONTROLLERS(PLC)	15	4.1 Introduction	16.09.2023 TO 13.10.2023	4.1 Introduction	16.09.2023	
		4.2 Advantages of PLC		4.2 Advantages of PLC	21.09.2023	
		4.3 Selection and uses of PLC		4.3 Selection and uses of PLC	22.09.2023	
		4.4 Architecture basic internal structures		4.4 Architecture basic internal structures	23.09.2023	
		4.5 Input/output Processing and Programming		4.5 Input/output Processing and Programming	27.09.2023	
		4.6 Mnemonics		4.6 Mnemonics	29.09.2023	
		4.7 Master and Jump Controllers		4.7 Master and Jump Controllers	30.09.2023	
					4.10.2023	
					5.10.2023	
					6.10.2023	
					7.10.2023	
					11.10.2023	
					12.10.2023	
					13.10.2023	

6. ROBOTICS	5	6.1 Definition, Function and laws of robotics 6.2Types of industrial robots 6.3 Robotic systems 6.4 Advantages and Disadvantages of robots	23.11.2023 TO 30.11.2023	6.1 Definition, Function and laws of robotics 6.2Types of industrial robots 6.3 Robotic systems 6.4 Advantages and Disadvantages of robots REVISION-	23.11.2023 24.11.2023 25.11.2023 29.11.2023 30.11.2023 1.12.2023 2.12.2023 6.12.2023	
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Sanjay Kumar Bishoojee .

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**GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR**

SESSION PLAN

5TH SEMESTER, BRANCH-MECHANICAL(GROUP 2)

MECHATRONICS(TH-4)

Name of the Faculty – ER. BEDA PRAKASH NAYAK						
Topics to be taken				Actually taken		
SL NO & CHAPTER	No. of Periods assigned by SCTE & VT	Details of the topics	PLANNED DATE	Details of the topics	ACTUAL DATE	Remarks
1. INTRODUCTION TO MECHATRONICS	5	1.1 Definition of Mechatronics 1.2 Advantages & disadvantages of Mechatronics 1.3 Application of Mechatronics 1.4 Scope of Mechatronics in Industrial Sector 1.5 Components of a Mechatronics System 1.6 Importance of mechatronics in automation	2.08.2023 TO 16.08.2023	1.1 Definition of Mechatronics 1.2 Advantages & disadvantages of Mechatronics 1.3 Application of Mechatronics 1.4 Scope of Mechatronics in Industrial Sector 1.5 Components of a Mechatronics System 1.6 Importance of mechatronics in automation	2.08.2023 5.08.2023 9.08.2023 12.08.2023 16.08.2023	
2. SENSORS AND TRANSDUCERS	10	2.1Defination of Transducers 2.2 Classification of Transducers 2.3 Electromechanical Transducers 2.4 Transducers Actuating Mechanisms 2.5 Displacement &Positions Sensors 2.6 Velocity, motion, force and pressure sensors. 2.7 Temperature and light sensors.	19.08.2023 TO 30.09.2023	2.1Defination of Transducers 2.2 Classification of Transducers 2.3 Electromechanical Transducers 2.4 Transducers Actuating Mechanisms 2.5 Displacement &Positions Sensors 2.6 Velocity, motion, force and pressure sensors. 2.7 Temperature and light sensors.	19.08.2023 23.08.2023 26.08.2023 2.09.2023 9.09.2023 13.09.2023 16.09.2023 23.09.2023 27.09.2023 30.09.2023	

3. ACTUATORS- MECHANICAL, ELECTRICAL	10	3.1Mechanical Actuators 3.1.1 Machine, Kinematic Link, Kinematic Pair 3.1.2 Mechanism, Slider crank Mechanism 3.1.3 Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear 3.1.4 Belt & Belt drive 3.1.5 Bearings 3.2 Electrical Actuator 3.2.1 Switches and relay 3.2.2 Solenoid 3.2.3 D.C Motors 3.2.4 A.C Motors 3.2.5 Stepper Motors 3.2.6 Specification and control of stepper motors 3.2.7 Servo Motors D.C & A.C	4.10.2023 TO 22.11.2023	3.1Mechanical Actuators 3.1.1 Machine, Kinematic Link, Kinematic Pair 3.1.2 Mechanism, Slider crank Mechanism 3.1.3 Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear 3.1.4 Belt & Belt drive 3.1.5 Bearings 3.2 Electrical Actuator 3.2.1 Switches and relay 3.2.2 Solenoid 3.2.3 D.C Motors 3.2.4 A.C Motors 3.2.5 Stepper Motors 3.2.6 Specification and control of stepper motors 3.2.7 Servo Motors D.C & A.C	4.10.2023 7.10.2023 11.10.2023 18.10.2023 4.11.2023 8.11.2023 11.11.2023 15.11.2023 18.11.2023 22.11.2023	
6. ROBOTICS	5	6.1 Definition, Function and laws of robotics 6.2Types of industrial robots 6.3 Robotic systems 6.4 Advantages and Disadvantages of robots	25.11.2023 TO 6.12.2023	6.1 Definition, Function and laws of robotics 6.2Types of industrial robots 6.3 Robotic systems 6.4 Advantages and Disadvantages of robots	25.11.2023 29.11.2023 2.12.2023 6.12.2023	

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Name of the Faculty – ER. MANASI BHOI						
Topics to be taken				Actually taken		
SL NO & CHAPTER	No. of Periods assigned by SCTE & VT	Details of the topics	PLANNED DATE	Details of the topics	ACTUAL DATE	Remarks
4. PROGRAMMABLE LOGIC CONTROLLERS(PLC)	15	4.1 Introduction 4.2 Advantages of PLC 4.3 Selection and uses of PLC 4.4 Architecture basic internal structures 4.5 Input/output Processing and Programming 4.6 Mnemonics 4.7 Master and Jump Controllers	3.08.2023 TO 18.09.2023	4.1 Introduction 4.2 Advantages of PLC 4.3 Selection and uses of PLC 4.4 Architecture basic internal structures 4.5 Input/output Processing and Programming 4.6 Mnemonics 4.7 Master and Jump Controllers	3.08.2023 7.08.2023 10.08.2023 14.08.2023 17.08.2023 21.08.2023 24.08.2023 28.08.2023 31.08.2023 4.09.2023 7.09.2023 11.09.2023 14.09.2023 18.09.2023	

5. ELEMENTS OF CNC MACHINES	15	5.1 Introduction to Numerical Control of machines and CAD/CAM	21.09.2023 TO 4.12.2023	5.1 Introduction to Numerical Control of machines and CAD/CAM	21.09.2023	
		5.1.1 NC machines		5.1.1 NC machines	25.09.2023	
		5.1.2 CNC machines		5.1.2 CNC machines	5.10.2023	
		5.1.3.CAD/CAM		5.1.3.CAD/CAM	9.10.2023	
		5.1.3.1 CAD		5.1.3.1 CAD	12.10.2023	
		5.1.3.2 CAM		5.1.3.2 CAM	16.10.2023	
		5.1.3.3 Software and hardware for CAD/CAM		5.1.3.3 Software and hardware for CAD/CAM	19.10.2023	
		5.1.3.4 Functioning of CAD/CAM system		5.1.3.4 Functioning of CAD/CAM system	2.11.2023	
		5.1.3.4 Features and characteristics of CAD/CAM system		5.1.3.4 Features and characteristics of CAD/CAM system		
		5.1.3.5 Application areas for CAD/CAM		5.1.3.5 Application areas for CAD/CAM	6.11.2023	
		5.2 elements of CNC machines		5.2 elements of CNC machines	9.11.2023	
		5.2.1 Introduction		5.2.1 Introduction	16.11.2023	
		5.2.2 Machine Structure		5.2.2 Machine Structure	20.11.2023	
		5.2.3 Guideways/Slide ways		5.2.3 Guideways/Slide ways	23.11.2023	
		5.2.3.1 Introduction and Types of Guideways		5.2.3.1 Introduction and Types of Guideways	30.11.2023	
		5.2.3.2 Factors of design of guideways		5.2.3.2 Factors of design of guideways	4.12.2023	
		5.2.4 Drives		5.2.4 Drives		
		5.2.4.1 Spindle drives		5.2.4.1 Spindle drives		
		5.2.4.2 Feed drive		5.2.4.2 Feed drive		
		5.2.5 Spindle and Spindle Bearings		5.2.5 Spindle and Spindle Bearings		

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