

**GOVERNMENT POLYTECHNIC JAJPUR**

A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

Website: <https://www.gpjajpur.org> E-mail: [principalgpjajpur@yahoo.co.in](mailto:principalgpjajpur@yahoo.co.in) Contact: 9437155107**LESSON PLAN (2021-22)**

Discipline : Mechanical Engineering	Semester: 5 <sup>th</sup> Sem	Name of the Teaching Faculty: Mahesh Kumar Patra, Basudev Barik
Subject: Mechatronics	No. Of Days/Week Class Allotted	Semester From Date: 01/10/2021 To Date: 31/01/2022 No. Of Weeks : 15
Week	Class Day	Theory/Practical Topics
1st	1st	<b>INTRODUCTION TO MECHATRONICS:</b> Definition, Advantages & disadvantages of Mechatronics.
	2nd	Application of Mechatronics, Importance of mechatronics in automation.
	3rd	Components of a Mechatronics System
	4th	Review class and Discussion
2nd	1st	Assignment Evaluation & Class Test
	2nd	<b>SENSORS AND TRANSDUCERS:</b> Definition and classification of transducer
	3rd	Classification of Transducer
	4th	Electromechanical Transducers
3rd	1st	Transducers Actuating Mechanisms
	2nd	Sensors and its classifications
	3rd	Displacement & Positions Sensors
	4th	Electromechanical Transducers
4th	1st	Transducers Actuating Mechanisms
	2nd	Sensors and its classifications
	3rd	Displacement & Positions Sensors
	4th	Velocity and Motion sensors
5th	1st	Force and Pressure sensors.
	2nd	Temperature sensors
	3rd	Light sensors
	4th	Review class and Discussion
6th	1st	Assignment Evaluation & Class Test
	2nd	<b>ROBOTICS:</b> Definition, Function and laws of robotics

## GOVERNMENT POLYTECHNIC JAJPUR

A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

Website: <https://www.gpjajpur.org> E-mail: [principalgpjajpur@yahoo.co.in](mailto:principalgpjajpur@yahoo.co.in) Contact: 9437155107

	3rd	Types of industrial robots, Advantages, Disadvantages and Applications of robots
	4th	Robotic systems
7th	1st	Review class and Discussion
	2nd	Assignment Evaluation & Class Test
	3rd	<b>ELEMENTS OF CNC MACHINES:</b> Introduction to Numerical Control of machines
	4th	NC machines
8th	1st	CNC machine
	2nd	CAD and CAM
	3rd	Software and hardware for CAD/CAM, Functioning of CAD/CAM system
	4th	Features and characteristics of CAD/CAM system, Application areas for CAD/CAM
9th	1st	Review class and Discussion
	2nd	<b>Introduction to CNC Machines,</b> Elements of CNC machines
	3rd	Machine Structure
	4th	Guide ways Slide ways and its types
10th	1st	Drives and types, Spindle drives
	2nd	Feed drive
	3rd	Spindle and Spindle Bearings
	4th	Review class and Discussion
11th	1st	Assignment Evaluation & Class Test
	2nd	<b>PROGRAMMABLE LOGIC CONTROLLERS(PLC):</b>
	3rd	Introduction, Definition and Advantages of PLC, Selection and uses of PLC
	4th	Architecture basic internal structures
12th	1st	Input-output Processing and Programming
	2nd	Mnemonics, Master and Jump Controllers
	3rd	Review class and Discussion
	4th	Assignment Evaluation & Class Test
13th	1st	<b>MECHANICAL ACTUATORS:</b>
	2nd	Machine, Kinematic Link, Kinematic Pair
	3rd	Mechanism, Slider crank Mechanism
	4th	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
14th	1st	Belt & Belt drive
	2nd	<b>Electrical Actuator:</b> Switches and relays, Solenoids
	3rd	D.C Motors

## GOVERNMENT POLYTECHNIC JAJPUR

A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

Website: <https://www.gpjajpur.org> E-mail: [principalgpjajpur@yahoo.co.in](mailto:principalgpjajpur@yahoo.co.in) Contact: 9437155107

	4th	A.C Motors
15th	1st	Stepper Motors, Specification and control of stepper motors
	2nd	Servo Motors D.C & A.C
	3rd	Review class
	4th	Assignment Evaluation & Class Test

*M. B. Patra*

Signature of the faculty

01/10/21