

Discipline: Mechanical Engg.
 Subject: Mechatronics

Semester: 5th
 No. of days/week
 class allotted: 5

Name of the teaching faculty: Ramakanta Nayak
 Semester from: 01/10/21
 to: 08/01/22

Week	No. of period	Topics to be covered
1st Oct	1st	Introduction of mechatronics
to	2nd	GIANDHI JAYANTI
2nd Oct		
	1st	Advantages and disadvantages of mechatronics
4th Oct		
to	2nd	Application of mechatronics
9th Oct		
	3rd	Scope of mechatronics in industrial sector
	4th	Components of a mechatronics system
	5th	Importance of mechatronics in automation
11th Oct		_____
to		DURGA PUJA HOLIDAYS
18th Oct		_____
	1st	Introduction of sensors and transducers
19th Oct		
to	2nd	KUMAR PURNIMA
23rd Oct		
	3rd	Definition of transducers
	4th	Classification of transducers
	5th	Electromechanical transducers
	1st	Transducers actuating mechanisms
25th Oct		
to	2nd	Displacement and position sensors
	3rd	Velocity, motion sensors
30th Oct		
	4th	Force and pressure sensors
	5th	Temperature sensors

Week	No. of period	Topics to be covered
	1 st	Light sensors
1 st Nov	2 nd	Revision of sensors and Transducers
to	3 rd	Introduction of mechanical actuators
6 th Nov	4 th	Machine, Kinematic link
	5 th	Kinematic pair
8 th Nov	1 st	Mechanism, Inversion of Mechanism
to	2 nd	Slider crank mechanism
13 th Nov	3 rd	Definition of Gear, Gear drive
	4 th	Gear Terminology
	5 th	Types of gears
15 th Nov	1 st	LAST MONDAY OF KARTIKA
to	2 nd	Belt and Belt drives
20 th Nov	3 rd	Bearings
	4 th	Introduction of electrical actuators
	5 th	Switches and relay
	5 th	KARTIKA PURNIMA
22 nd Nov	1 st	Solenoid, switches and relay
to	2 nd	D.C. motors
27 th Nov	3 rd	A.C. motors
	4 th	Stepper motors
	5 th	PRATHAMASTAMI
29 th Nov	1 st	specification and control of stepper motors
to	2 nd	D.C. Servo motors
4 th Dec	3 rd	A.C. Servo motors
	4 th	Introduction of programmable logic controllers (PLC).

Week	No. of period	Topics to be covered
	5 th	Advantages of PLC
6 th Dec	1 st	Selection of a PLC
to	2 nd	Use of PLC
11 th Dec	3 rd	Architecture basic internal structure of PLC
	4 th	Input/output processing and programming
	5 th	Mnemonics, Master and jump controller
13 th Dec	1 st	Introduction to numerical control machines and CAD/CAM
to	2 nd	CNC machines
18 th Dec	3 rd	computer aided design (CAD)
	4 th	LAST THURSDAY OF MARGASHIRA
	5 th	computer aided manufacturing (CAM)
20 th Dec	1 st	Software and hardware for CAD/CAM
to	2 nd	Functioning of CAD/CAM system
25 th Dec	3 rd	Features and characteristics of CAD/CAM system
	4 th	Application areas for CAD/CAM
	5 th	CRIST MASS
27 th Dec	1 st	Elements of CNC machines, machine structure
to	2 nd	Introduction and types of guideways/ slide ways.
1 st Jan	3 rd	Factors of design of guideways
	4 th	Spindle drives and feed drives

Week	No. of period	Topics to be covered
	5 th	NEW YEAR
3 rd Jan to 8 th Jan	1 st 2 nd	Spindle and spindle bearings definition, function and law of robotics
	3 rd	Types of industrial robots
	4 th	Robotic systems
	5 th	Advantages and disadvantages of robots.

~~Verified~~

~~10/10/2021~~

~~R. Nagaraj~~