



Techno India NJR Institute of Technology

Academic Administration of Techno NJR Institute

Syllabus Deployment

Name of Faculty	: Mr. Chandra Shekar S.	Subject Code	: 5ME3-21
Training Program	: Mechatronics Lab	Sem	: V
Department	: Mechanical Engineering		
Total No. of Hours Planned:	12	Max. Marks:	50(IA: 30, ETE: 20)

COURSE OUTCOMES:

At the end of this course students will be able to:

- CO1: Identification of key elements of mechatronics system and its representation in terms of block diagram
- CO2: Understanding the concept of signal processing and use of interfacing systems such as ADC, DAC, digital I/O
- CO3: Interfacing of Sensors, Actuators using appropriate DAQ micro-controller
- CO4: Time and Frequency domain analysis of system model (for control application)
- CO5: PID control implementation on real time systems
- CO6: Development of PLC ladder programming and implementation of real life system.

SN	Agenda	Exposure
1	Transducer Kit	<ul style="list-style-type: none"> • Characteristics of LVDT • Principle & Characteristics of Strain Gauge
2		<ul style="list-style-type: none"> • Characteristics of Summing Amplifier • Characteristics of Reflective Opto Transducer
3	Mobile Robot	<ul style="list-style-type: none"> • Program for Operating Buzzer Beep • Program for Operating Motion control
4		<ul style="list-style-type: none"> • Program for Operating Direction control • Program for Operating White line follower for the given arena
5	PLC Programming	Ladder programming on Logic gates ,Timers & counters

6		Ladder Programming for digital & Analogy sensors
7		Ladder programming for Traffic Light control, Water level control and Lift control Modules
8	MATLAB Programming	Sample programmes on Mat lab
9		Simulation and analysis of PID controller using SIMULINK

TEXT/REFERENCE BOOKS

1. BOLTON, W., "MECHATRONICS: ELECTRONIC CONTROL SYSTEMS IN MECHANICAL AND ELECTRICAL ENGINEERING", PEARSON EDUCATION
2. MECHATRONICS, HMT HAND BOOK, TATA MCGRAW HILL