MARTHANDAM COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

MECHATRONICS LABORATORY

Major Equipments Available in the Lab

Sl.No	Name of the Equipments	Specification	Quantity
1	Design and testing of fluid power circuits to control velocity, direction, force of single and double acting cylinders	4/2 DCV, ½ Hydraulic Cylinder, Hydraulic Hose, PC with Lab view software	1
2	Basic Pneumatic trainer kit	PLC component for FRL unit Solenoid valve and cylinders	1
3	Electro pneumatic trainer kit with switch mode power supply	PLC based advanced electro Pneumatic trainer kit, CECO	1
4	Stepper Motor interfacing with 8051 micro controller	2Kgs/12V 50 Pin FRC OEN	2
5	Computerized data logging system with control for process variables like pressure flow and temperature	8 Channels, Analog to Digital converter 12 bit Resolution	1
6	Speed control of AC and DC Drives	415V Ac/100W Squirrel cage induction motor	1
7	Servo controller interfacing for Dc Motor and PID controller Interfacing	16 bit Microcontroller based PWM and P,PI,PID controller for position and speed control of AC and DC Servo Motor	1
8	Air Compressor	Power Source: Electric Single stage compressor	1
9	simulation of basic hydraulics and Pneumatics electrical circuits using software or automation software	Autosim software,PC	10 users
10	Modelling and analysis of basic electrical hydraulic and Pneumatic systems using lab view software's	Lab view Software,PC	10 users
11	Computers	4GB Ram,64 GB Hard Disk, 17 inch LED Monitor	15
12	UPS	Input voltage 220, Operating frequency 50/60 Hz	1

13	Traffic light interface kit	50 Pin FRC OEN/8051 Microcontroller	1
14	Image processor of hardware and Software	456-MHzC6748 Fixed/Floating point DSP	1
SOFTWARE			
1	Autosim software		

COURSES OFFERED

Sl.No	Odd Sem (Course code & Name)	Class	Even Sem (Course code & Name)	Class
1	ME8781 Mechatronics Laboratory	IV MECH	-	-

MARTHANDAM COLLEGE OF ENGINEERING AND TECHNOLOGY

K.K.DISTRICT

DEPARTMENT OF MECHANICAL ENGINEERING

ME8781 MECHATRONICS LABORATORY

OBJECTIVE

To know the method of programming the microprocessor and also the design, modeling & analysis of basic electrical, hydraulic & pneumatic Systems which enable the students to understand the concept of mechatronics.

OUTCOMES

Upon the completion of this course the students will be able to

CO1 Demonstrate the functioning of mechatronics system with various pneumatic, hydraulic and electrical systems.

CO2 Demonstrate the functioning of control systems with the help of PLC and microcontrollers.

LIST OF EXPERIMENTS

1. Assembly language programming of 8085 – Addition – Subtraction – Multiplication – Division – Sorting – Code Conversion.
2. Stepper motor interface.
3. Traffic light interface.
4. Speed control of DC motor.
5. Study of various types of transducers.
6. Study of hydraulic, pneumatic and electro-pneumatic circuits.
7. Modelling and analysis of basic hydraulic, pneumatic and electrical circuits using Software.
8. Study of PLC and its applications.
9. Study of image processing technique.