



KARUNYA INSTITUTE OF TECHNOLOGY AND SCIENCES
(Declared as Deemed to be University under Sec. 3 of the UGC Act 1956)
A CHRISTIAN MINORITY RESIDENTIAL INSTITUTION
AICTE Approved & NAAC Accredited
Karunya Nagar, Coimbatore - 641 114, Tamil Nadu, India

DEPARTMENT OF MECHANICAL ENGINEERING

FLUID POWER CONTROL ENGINEERING AND MECHATRONICS LABORATORY

General outline

The Fluid Power Controls and Mechatronics Laboratory is a teaching and research laboratory specially designed to facilitate hands on experience in the fluid power technologies. The research aspect of this laboratory is focused on the design of new fluid power components and development of human friendly pneumatic/hydraulic systems in energy and transportation systems. The laboratory is in compliance with UG and PG curriculum with subject codes as ME237, ME238, 09ME225, 12ME205, 12ME209, 12ME243, 14ME2007, 10ME210, 14ME2010, 15ME3005, 17ME2030, 18ME2029, 18ME3016, 19ME2023, 19ME3002 and 20ME1005. The simulation software like Automation Studio and Fluid SIM are used for simulation purposes. This lab offers Add-On Courses / Short-Term Training Programs to the upcoming graduates and to enhance the employability by providing facilities for carry out research in the area of Mechatronics and Industrial Automation. The PLC software is used to develop various logic programs. The knowledge what the students gain during the course of study will be useful in design the PLC program for an industrial/other automation application

COURSE OBJECTIVES:

To impart knowledge on

1. Application of fluid power symbols
2. Designing a suitable hydraulic or pneumatic circuit
3. Automating an Industrial application.

COURSE OUTCOMES:

Ability to

1. Recognize the standard symbols used in fluid power circuits.
2. Illustrate the working principles of valves
3. Assess the suitable component for a particular application.
4. Construct the hydraulic circuits for an industrial application.
5. Build a pneumatic circuit and apply them to real life problems.
6. Design and develop a PLC controlled pneumatic circuit for industrial application

Facilities available for regular class work, project, research and consultancy

- | | |
|---|---|
| ✓ Automation Studio Software 5.7v | ✓ MPS – Distributing & Sorting Stations |
| ✓ Fluid SIM Software | ✓ Basic-Edu kit Process Automation |
| ✓ Electro pneumatic and hydraulic trainers | ✓ Advanced- Edu kit Process Automation |
| ✓ Didactic Equipment Set | ✓ Servo Motor - Drive Technology |
| ✓ Hydraulic Trainer Kit | ✓ Stepper Motor- Drive Technology |
| ✓ Electro Hydraulic Trainer Kit | ✓ Siemens Step 7- PLC |
| ✓ Electro Pneumatic Trainer Kit | Programming Software and other software |
| ✓ Ambu Cardiac Care System W-IV Arm and Hard Case with CPR Software and Ambu SAM Training Manikin | |

Major equipment's

Basic Pneumatic training kit



Electro-Hydraulic trainer



Electro-Pneumatic trainer kit



Electro-Pneumatic trainer kit



Transparent Hydraulic trainer kit



Programmable Logic Controller trainer



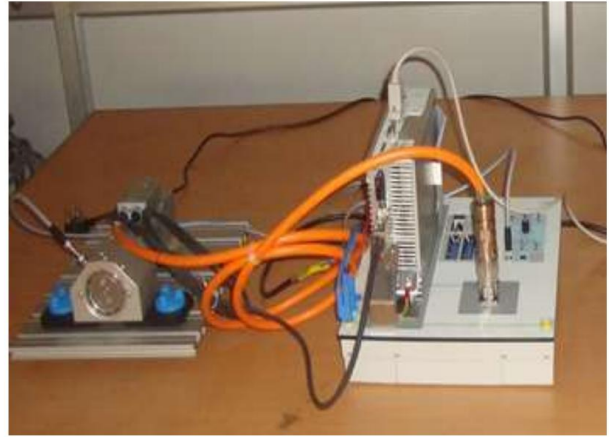
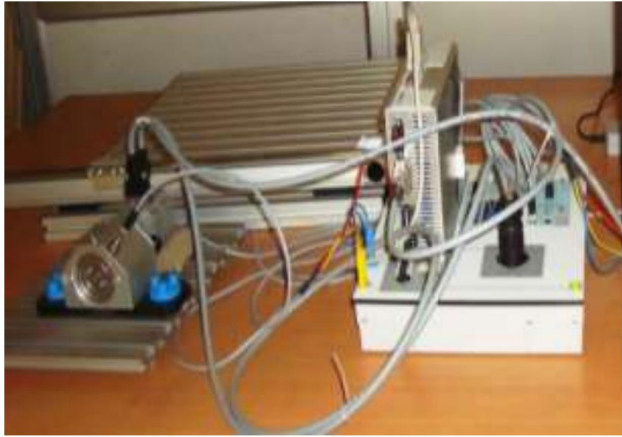
Profile board with Pneumatic components



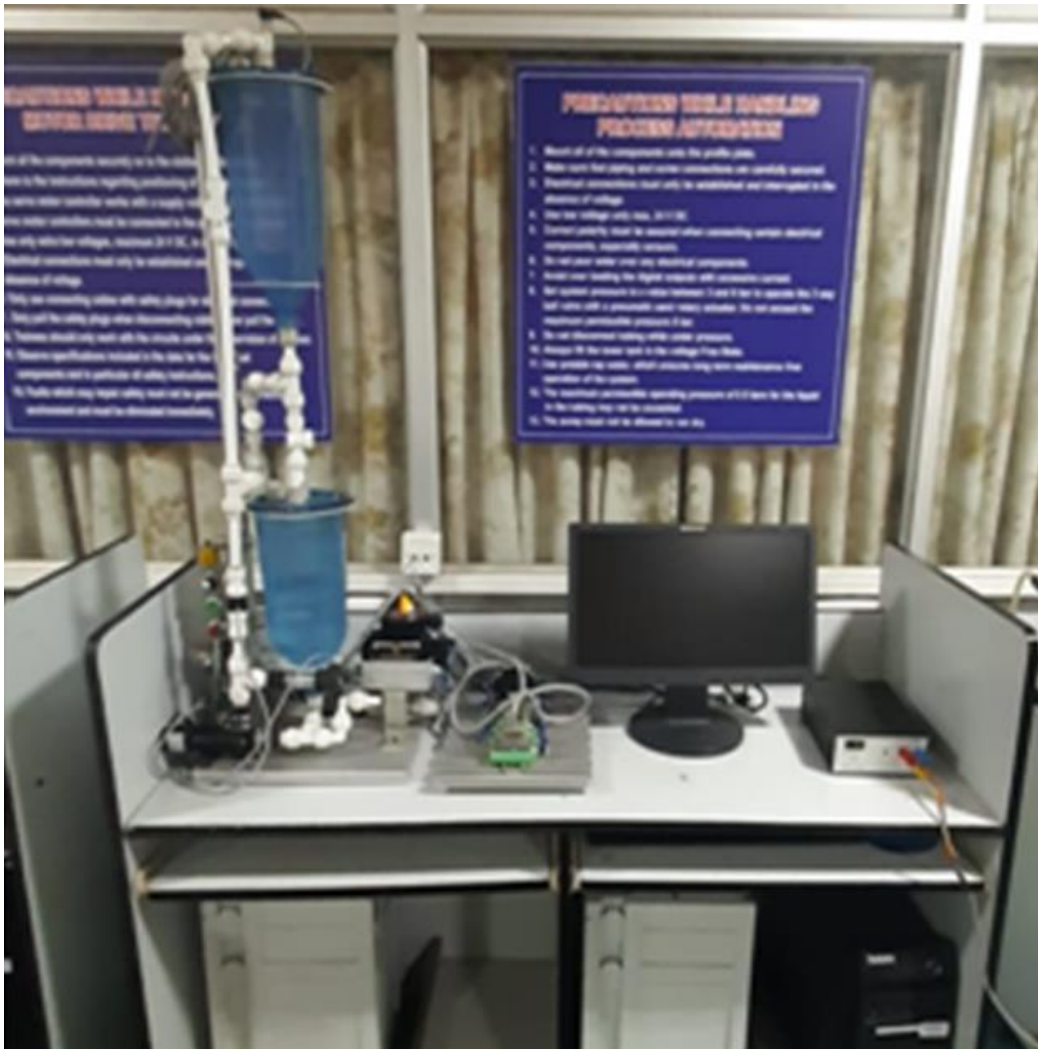
Modular Production System (MPS)



Stepper and Servo Motor -Drive Technology



Process Automation



Lab in charge:

Dr. G.Babu Rao , M.E., Ph.D.,

Assistant Professor (AGP 8000)



Lab technicians:

Mr. K. Sivasankaran, D.M.E., B.E., Engineering Technician

