

## Two Best Practices Implemented by the Institute

### 1. Established Mechatronics Lab

Arya Institute of Engineering and Technology setup the Mechatronics lab in the campus.

As technology advances, electronics and computer science play a more and more important role in mechanical systems, so that the mechanical engineering education must be completed with an increasing number of courses from the above-mentioned domains. Thus, the development of mechanical engineering in an interdisciplinary direction renders the introduction of “Mechatronics” as study domain as absolutely necessary.



We have the Following Trainers Kit in the Lab:

**Mechatronics Trainer-:**

This trainer is suitable for the teaching and training of courses such as electromechanical equipment installation and maintenance, electromechanical technology application, electric operation and control, electrical technology application, PLC technology and so on.



**Practical Outcomes**

- Automatic detection technology application
- Pneumatic technology application
- Programmable logic controller programming
- Electrical control circuit application
- Frequency converter application
- Automatic control technology application
- Mechanical system installation and debugging
- System maintenance and troubleshooting



### Manipulator System Trainer-:

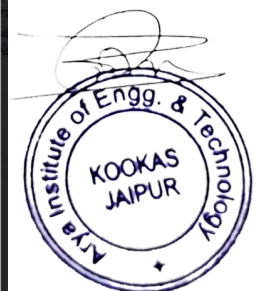
This trainer is mainly composed of powder coating metal frame, PLC module, mechanical structure, control panel board and so on. The manipulator adopted is coordinate type, with four degrees of freedom, that is, horizontal movement, vertical movement, manipulator rotation and paw rotation



### Practical Outcomes

- Sensor technology application
- Pneumatic technology application
- Programmable logic controller technology training
- System maintenance and fault detection training
- Automatic control technology training
- Mechanical system installation and debugging
- Electrical control circuit training

### Portable Basic Pneumatics Training Kit -:



The portable pneumatic principle trainer is designed for common courses such as pneumatic control technology', 'hydraulic and pneumatic transmission.

- Understanding of pneumatic components structure, signal and functions
- Reversing loop of push button valve controlled single acting cylinder
- Speed control loop of single acting cylinder
- Manual controlled reversing loop of hand directional valve
- Pneumatic controlled reversing loop of hand directional valve
- Speed control loop of double acting cylinder
- Speed control loop of throttle valve
- Sequential loop of two cylinders
- Reversing loop of OR gate valve controlled single acting cylinder
- Remote controlled unloading loop
- Push button valve controlled double acting cylinder loop
- Reducing valve controlled pressure-relief loop
- Two hands controlled single acting cylinder reversing loop
- Disassembly and assembly of hand directional valve





## 2. Advance Robotics Lab:

We have established the Advance Robotics Lab in the campus for R&D purpose and also to meet the Industrial requirement with following Technologies

- Advance Laser Cutting
- Vacuum Forming
- Laser Welding
- Plasma Cutting
- Industrial Level 3D Printer
- SLA Printer
- LIDAR and SLAM Technology

