

## Technical Summary of ICT & Mechatronics Training

Mechatronics is application of electronics and computer technology to control the motions of mechanical systems

Computer system has drives and their drivers, both of which forms the key components of Mechatronics

A drive is made up of electrical and mechanical parts designed to carry out a specification functions

A Driver is software and softwares are set of instructions written for the computer system to enable it carry out specific task

For Example, A Printer is a Mechatronics device, because it has the drive (Mechanical + Electronics systems) and the driver (which is a software or a PROGRAMMABLE LOGIC CONTROLLER (PLC), that is a computer control system that continuously monitors the state of input devices and makes decisions based upon a custom program to control the state of output devices).

To print, you need to ensure the drive (the mechanical and electrical components of the printer is on and working) and you have to give instructions to the printer driver by specifying the document to print, what no of pages and what colour to use, what paper layout etc before clicking on PRINT.

Without the Printers Drive and Drivers working together, the printer will not work well.

Mechatronic devices are everywhere, they are found in the computer Setting like Hard Disk Drive, CD ROM Drive, Photocopiers, Scanners. Other are found in Cars, Kitchen like your warmer etc

The Mechatronics parts of Hard Disk are

- a. The servomechanism that controls the position of the read-write heads of the HDD
- b. The spindle motor system that spins the disks at precisely regulated speed.

All these components have PROGRAMMABLE LOGIC CONTROLLER (PLC)

The focus of this training is in 2 folds

1. To show participants how to program the logic controllers of machine using Artificial Intelligence / Machine Learning. Machine Learning is the process of training and feeding machines with data so it can learn from experience and can predict possible outputs based on data given.
2. To Diagnose and Troubleshoot faults in Mechatronics Devices like (Cars) using OBD II device

At the End of the Training, We will create a new crop of Female Technicians that will be versatile in Machine Learning and will be able to Diagnose and Troubleshoot faults in Cars using OBD II Car Scanners.

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Office Application and Role in Mechatronics

MS Word

Beginning of any project is the planning phase

MS Word will enable users create and format documents for use in the design and planning of projects

MS Excel

Machine Learning is the process of feeding machines with data so it can learn from experience and can predict possible outputs, more like the neural network of the human brain.

MS Excel provides an avenue to generate and analyze data for planning and Machine Learning.