

Training Facilities at ICE Department

Laboratories and shops

At present there are 7 (Seven) laboratories furnished with latest model training equipment with the following names.

2.0 Instrumentation & Control Engineering Department

- 2.1 Basic Instrumentation and Control Laboratory
- 2.2 Distributed Control System (DCS) Pilot Plant
- 2.3 Advanced Instrumentation Laboratory
- 2.4 Vibration Monitoring and Analysis Laboratory
- 2.5 Advanced PLC Laboratory
- 2.6 Distributed Control System (DCS) Laboratory
- 2.7 Industrial Instrument and Calibration Laboratory

2.0 Instrumentation and Control Engineering Department

There are 7 Laboratories in this department. These are follows: Basic Instrumentation and Control Lab, Distributed Control System (DCS) Pilot Plant, Advanced Instrumentation Lab, Vibration Monitoring and Analysis lab, Advanced PLC Lab, Distributed Control System (DCS) Lab, Industrial Instrument & Calibration Lab

2.1 Basic Instrumentation & Control Laboratory



This lab is located at 1st floor of Academic Building-1. Trainers are introduced to principles and methods of modern instrumental measurement and control.

This lab have the following instruments:

- Sensing elements
- Standard Pressure Gauge
- Temperature Recorders
- Pneumatic and Electronic Transmitters
- Programmable Controllers
- Control Valve
- Dead weight tester
- Themocouple/RTD calibrator

2.2 Distributed Control System (DCS) Pilot Plant



This lab is located at Ground floor of Academic Building-2. DCS Pilot plant is a fully computerized system incorporating practical facilities on computerized process control and automatic startup shutdown logic interlock widely used in industries.

DCS Pilot plant consists of the following control loops:

- Pressure control loop
- Flow control loop
- Temperature control loop

This lab also incorporates the following facilities:

- Electro-hydraulic control system training assembly
- Level control loop with sequential logic control and analog control system
- Set up for hands on practice of relay based sequential logic control system



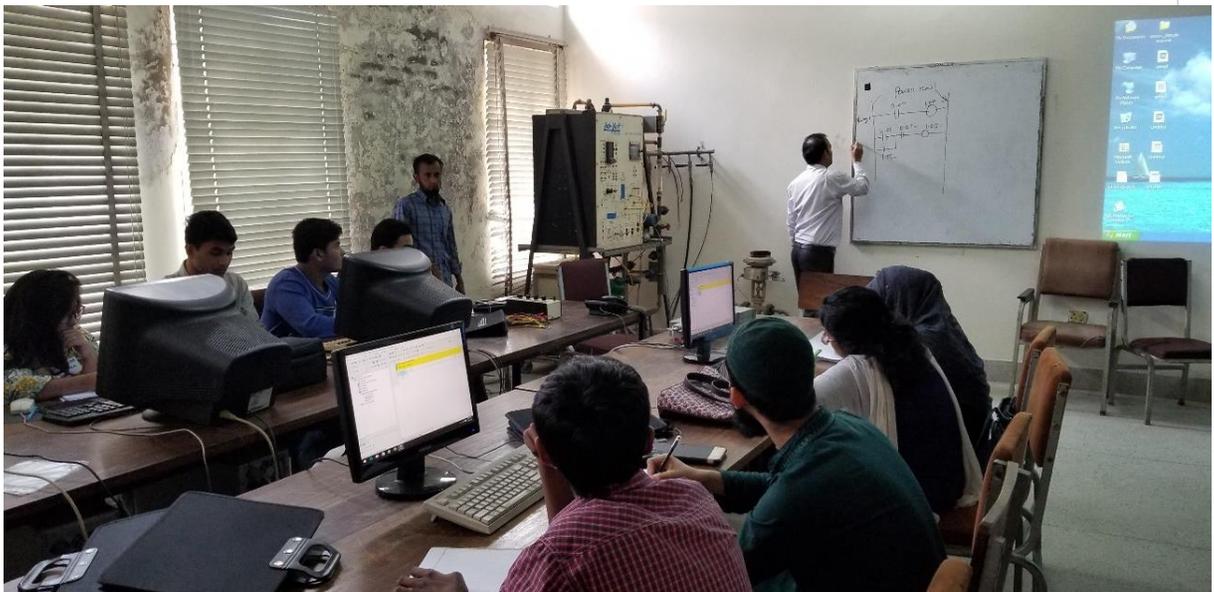
2.3 Advanced Instrumentation Laboratory



This lab is located at 1st floor of Academic Building-2. Trainers are introduced to the principles and methods of automatic level control loop with advanced programmable instruments.

This lab have the following instruments-

- Programmable Logic Controller (PLC) with sensors and actuators
- Level Control Process Station with programmable transmitter, controller and control valve
- Large number of PC with programming software of PLC for hands on practice
- PLC & HMI panel for automation of level loop



2.4 Vibration Monitoring and Analysis Laboratory



This lab is located at 1st floor of Academic Building-2. Facilities of this lab include highly sophisticated vibration monitoring and analysis equipment for on-line troubleshooting of rotating machines.

This lab is equipped with the following instruments-

- 3300 series vibration monitor of Bently Nevada Corporation
- Rotor Kit machine train up to 10,000 rpm
- Stroboscope for accurate determination of machine speed and to freeze motion
- Data Acquisition Interface Unit (DAIU) for computerized data acquisition and diagnostic system.



2.5 Advanced PLC Laboratory



This lab is located at 3rd floor of Academic Building-2. Facilities of this lab include configuration and programming of Siemens, Mitsubishi, Yokogawa and Allen Bradley PLC with Trainer Module.

This lab have the following instruments-

- Programmable Logic Controller Trainer with SIEMENS (S7-1200), Mitsubishi (FX_{3u}-32M), Allen Bradley (MicroLogix 1400), Desktop Computer
- Level Control Loop module with Mitsubishi PLC (Q03) & Touch Panel (Proface)
- Advanced PLC Trainer Module with Yokogawa FCN-RTU



2.6 Distributed Control System (DCS) Laboratory



Distributed Control System (DCS) lab is located at 3rd floor of Academic Building-2. This lab is a fully computerized system incorporating practical facilities on computerized process control and automatic startup shutdown logic interlock widely used in industries.

This lab consists of the following plant:

- Fluid Control Plant with Yokogawa PLC (CPS-DCS50Y-P1)
- Digital and Analog Control Plant with Yokogawa PLC (CPS-DCS50Y-P2)
- Factory Automation Control Plant with Yokogawa PLC (CPS-DCS50Y-P3)
- Server station
- Client station

2.7 Industrial Instrument and Calibration Laboratory



Industrial Instruments & Calibration lab is located at 3rd floor of Academic Building-2. This lab has the Facility to study pressure measurement and calibration, temperature measurement and calibration. Procedure and the devices used of different make and models.

This lab consists of the following instruments

- Temperature Recorder (Honeywell)
- Programmable Controller
- Flow Transmitter
- Pneumatic Transmitter
- P/I and I/P Converter
- Dead weight Tester
- Universal Calibrator FLUKE-754
- Differential Pressure Transmitter

Important labs & major equipment of ICED

Academic Building -1

Sl. No.	Name of the Lab	Location	Major Equipment
1.	Basic Instrumentation and Control Lab	1 st Floor	<ul style="list-style-type: none"> - Sensing elements - Standard Pressure Gauge - Temperature Recorders - Pneumatic and Electronic Transmitters - Programmable Controllers - Control Valve - Dead weight tester - Themocouple/RTD calibrator

Academic Building -2

Sl. No.	Name of the Lab	Location	Major Equipment
1.	Distributed Control System (DCS) Pilot Plant	Ground Floor	<ul style="list-style-type: none"> - Temperature Control Loop - Pressure Control Loop - Flow Control Loop - Level Control Loop - UMC 800 Multi loop controller - PlantScape Server and work Station - Honeywell paperless recorder - Electrohydraulic control system - Relay based electrical sequence control
2.	Advanced Instrumentation Lab	1 st Floor	<ul style="list-style-type: none"> - OMRON PLC CS1G-H, CPU43 with input output panel - HMI Module (OMRON) - Level Control process station with programmable Transmitter, Controller and Control Valve - PC based Programming device (Desktop) - Allen Bradley PLC (SLC-100) with programming console
3.	Vibration Monitoring and Analysis Lab	1 st Floor	<ul style="list-style-type: none"> - 3300 series vibration monitor of Bently Nevada Corporation - Rotor Kit machine train up to 10,000 rpm - Stroboscope for accurate determination of machine speed and to freeze motion - Data Acquisition Interface Unit (DAIU) for computerized data acquisition and diagnostic system. - Optical Driver - Velocity Seismo probe
4.	Advanced PLC Lab	3 rd Floor	<ul style="list-style-type: none"> - Programmable Logic Controller Trainer with SIEMENS (S7-1200), Mitsubishi (FX_{3U}- 32M), Allen Bradley (MicroLogix 1400), Desktop Computer - Level Control Loop module with Mitsubishi PLC (Q03) & Touch Panel (Proface) - Advanced PLC Trainer Module with Yokogawa FCN-RTU

Sl. No.	Name of the Lab	Location	Major Equipment
5.	Distributed Control System (DCS) Lab	3 rd Floor	<ul style="list-style-type: none"> - Fluid Control Plant with Yokogawa PLC (CPS-DCS50Y-P1) - Digital and Analog Control Plant with Yokogawa PLC (CPS-DCS50Y-P2) - Factory Automation Control Plant with Yokogawa PLC (CPS-DCS50Y-P3) - Server station - Client station
6.	Industrial Instrument and Calibration Lab	3 rd Floor	<ul style="list-style-type: none"> - Temperature Recorder (Honeywell) - Programmable Controller - Flow Transmitter - Pneumatic Transmitter - P/I and I/P Converter - Dead weight Tester - Universal Calibrator FLUKE-754 - Differential Pressure Transmitter

Technical Assistance & Consulting Service Facilities

Training Institute for Chemical Industries (TICI) maintains a technical service pool consisting of highly qualified personnel having foreign training and long working experience in heavy industries. Areas of specialized technical services offered by ICE Department of TICI at present are as follows:

- Design, installation and commissioning of close loop automatic process control instrumentation system
- Trouble-shooting, repair and calibration of online monitoring system of rotating machine
- Design, installation and commissioning of open loop measuring and indicating instruments
- Programmable Logic Control programming and system operation including trouble-shooting and repair
- Distributed Control system (DCS) programming system operation trouble-shooting
- In situ dynamic mass balancing of rotating machine
- Calibration of different measuring and controlling instruments of different organizations



Vibration measuring & analysis job in Linde Bangladesh Ltd.