

# Instrumentation and Control Technician

Instrumentation involves automation in the production of various commodities. Complex process control and measurement systems such as those found in the oil and gas industry, chemical plants, food processing operations, and the pulp and paper industry require sensitive and accurate instruments. Recent technical developments in measuring and controlling process variables such as pressure, temperature, flow, and composition have increased the quality of products and have reduced operating costs. Today conventional pneumatic and electronic controls are being rapidly augmented or replaced by computer-based systems. These advantages in technology demand qualified technical personnel trained in the field of instrumentation.

## OBJECTIVES

The objective of the Instrumentation Program is to provide students with theoretical and practical training in the principles of operation and maintenance of pneumatic devices, control valves, electronic instruments, digital logic devices and computer-based process control systems.

The Provincial Apprenticeship and Certification Board through legislative authority is responsible for the registration of apprentices and trade qualifiers into the designated occupations.

The registration of an apprentice will take place when an individual is employed in a field of work directly relating to a designated occupation, and has a Memorandum of Understand (MOU) signed between the Division of Institutional and Industrial Education, an employer and the apprentice.

After successful completion of this program, the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyman's Examination.

## ENTRANCE REQUIREMENTS

Comprehensive Arts and Science Certificate (College Transition program),

**OR**

High School Graduation,

**OR**

Grade XI Certificate (Public Examinations or equivalent),

**OR**

Adult Basic Education (Level III) Graduation,

**OR**

Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:

1 Mathematics MA3107A, MA3107B, MA3107C

2 Science 3101, 3102, 3103

**OR**

Persons 19 years of age or older who do not meet the educational prerequisite may be considered on an individual basis under the Mature Student Clause.

## EMPLOYMENT OPPORTUNITIES

With industry becoming increasingly automated, instrument technicians are needed virtually anywhere there are control and metering systems. They are employed in the following industries:

- Pulp and Paper Processing
- Hydro Power Generation
- Mining, Petrochemical, and Natural Gas
- Industrial and Commercial Manufacturing
- Industrial Construction
- Industrial Instrument Servicing

## CERTIFICATE

- One year
- Start date varies
- Burin, Gander and Seal Cove Campuses

## COURSES

CODE	TITLE	Hrs
<b>Block 1 Entry Level</b>		
TS1510	Occupational Health and Safety	6
TS1530	Standard First Aid	14
TS1520	WHMIS	6
ER1110	Hand Tools	15
ER1120	Power Tools	30
ER1130	Fasteners & Adhesives	15
ER1140	Direct Current (DC) Theory	30
ER1150	Series & Parallel Circuits	45
ER1160	Codes	30
ER1170	Voltage Drop & Power Loss	30
ER1180	Single-Phase Theory	60
ER1190	Three-Phase Theory	30
ER1200	Blueprint (Generic)	30
ER1225	Conduit, Tubing & Fittings	15
ER1710	Signal Transmission	30
ER1732	Electronics	135
ER1760	Motors	45
ER2156	Process Measurement	300
ER2215	Pneumatic Systems Instrument Air Supply	30
CM2150	Workplace Communications	45
MR1220	Customer Service	30
SP2330	Quality Assurance/Quality Control	30
MC1050	Introduction to Computers	30
SD1700	Workplace Skills	30
SD1710	Job Search Techniques	15
SD1720	Entrepreneurial Awareness	15
<b>Block 2 Advanced Level</b>		
ER1740	On-Off Control	60
ER2196	Process Control	135
<b>Block 3 Advanced Level</b>		
ER2160	Solid State Drives	30
ER2170	PLC Fundamentals	15
ER2180	Programming PLC's	30
ER2226	Control Valves	60
ER2235	Hydraulic Systems	30
ER2325	Boiler Control	30
<b>Block 4 Advanced Level</b>		
ER1770	Process Analyzers	60
ER1780	DCS Process Applications	45
ER1790	PLC Process Applications	45
ER2116	Troubleshooting Techniques	6
ER2200	Distributed Control Systems	30
ER2380	Vibration	15