



**National Craft Assessment and Certification Program
S P E C I F I C A T I O N S**

Instrumentation Technician V4

AEN12TINST04

March 2020

Focus Statement

An Instrument Technician lays out, fabricates, installs, and performs leak testing on tubing and piping systems. The technician also installs instruments and instrument stands and interprets instrument construction drawings, specifications, and any other resource documents. The instrument technician is expected to exhibit basic mechanical and mathematical skills and to demonstrate good safety practices, especially electrical safety.

Overview

- Two-hour closed-book examination
- May use downloadable Instrumentation Formula sheet found on Instrumentation craft page of NCCER website
- May use a basic function, non-printing calculator
- No extra papers, books, notes or study materials are allowed
- A corresponding hands-on Performance Verification is available

The minimum passing score is 75

NCCER Curriculum

All NCCER knowledge assessments are referenced to NCCER’s curriculum modules as listed on this specification sheet. You may order modules from Pearson (800.922.0579) or from NCCER's Online Catalog at www.nccer.org.

Assessment Development

All questions are developed and approved by subject matter experts under the direction of NCCER.

Credentials

Upon successful completion of the knowledge assessment, NCCER will send applicable credentials to the assessment center.

Score Report and Training Prescription

Each candidate will have access to their assessment results including their overall score and recommended training.

NCCER Registry

Knowledge assessment results are recorded in NCCER’s Registry and become a part of the portable record of an individual’s NCCER credentials.

Knowledge Assessment Contents:

Module ID	Content Domain / Module Title	Number of Items
12107-14	Instrument Drawings and Documents, Part One	6
12108-14	Gaskets, O-Rings, and Packing	4
12109-14	Lubricants, Sealants, and Cleaners	4
12110-15	Temperature, Pressure, Level, and Flow	6
12111-14	Tubing	4
12115-14	Instrumentation Safety Practices	4
12116-14	Electrical Systems for Instrumentation	4
12119-14	Craft-Related Mathematics	4
12202-15	Instrument Drawings and Documents, Part Two	4
12204-16	Process Control Theory	4
12205-16	Detectors, Secondary Elements, Transducers, and Transmitters	6
12206-16	Controllers	4

(continued)

Module ID	Content Domain / Module Title	Number of Items
12207-16	Control Valves, Actuators, and Positioners	6
12209-16	Switches and Photoelectric Devices	4
12210-15	Instrument Air Filters, Regulators, and Dryers	4
12302-15	Layout and Installation of Tubing and Piping Systems	4
12303-15	Clean, Purge, and Test Tubing and Piping Systems	4
12304-14	Inspect, Handle, and Store Instrumentation Materials	4
12305-16	Instrumentation Electrical Circuitry	4
12306-16	Grounding and Shielding of Instrumentation Wiring	4
12402-16	Instrument Calibration and Configuration	4
12410-16	Proving, Commissioning, and Troubleshooting a Loop	4
33205-10	Test Equipment	4
Total Number of Items		100

Assessment References:

Instrumentation Trainee Guide – Edition 3, Level 1; NCCER; revised in 2014

(Order from Pearson using ISBN 978-0-13-383080-4)

Instrumentation Trainee Guide – Edition 3, Level 2; NCCER; revised in 2015

(Order from Pearson using ISBN 978-0-13-413101-6)

Instrumentation Trainee Guide – Edition 3, Level 3; NCCER; revised in 2016

(Order from Pearson using ISBN 978-0-13-413095-8)

Instrumentation Trainee Guide – Edition 3, Level 4; NCCER; revised in 2016

(Order from Pearson using ISBN 978-0-13-449532-3)