



INSTRUMENT MECHANICIAN

Qualification Purpose

The purpose of this qualification is to prepare a learner to operate as an Instrument Mechanician to install/remove, calibrate, maintain, and repair instruments and control systems. A qualified learner will be able to:

- Calibrate instrumentation equipment.
- Install and remove instrumentation equipment.
- Optimise Process Control Loops.
- Fault find and repair instrumentation equipment.
- Maintain instrumentation equipment.

Foundational Learning Competence (SAQA Minimum Entry Level)

NQF Level 4 qualification with Mathematics and Science

Trade Test Requirements

Learner should have passed:

- a) N2 Mathematics, Science Industrial Electronics, Instrument Trade Theory
- b) N2 Certificate including the four relevant subjects of maths, engineering science and a fourth subject as required by the trade: or
- c) technical trade theory programs quality assured by a SETA deemed to be equivalent to NQF level 3 (N2); or
- d) Relevant Engineering NCV Certificate with seven subjects at NQF level 3; or
- e) Technical Grade 11 with Maths, Science, Language, and related trade theory subject; or
- f) Relevant (directly related to the trade theory subjects) N6 certificate or National Technical Diploma (T, S or N stream.)

In addition to the above-mentioned minimum educational qualification the applicant must also have:

- a) Successfully completed all off the job practical training unit standards (in the case of learnerships) or modules (in the case of an apprenticeship) of an artisan learning program at an accredited training provider as verifiable by training records (logbook).
- b) Satisfied the requirements of the structured workplace, on the job, learning for a minimum period of 12 months verifiable through a workplace learning record (e.g. logbook) unless any other workplace period has been contractually specified before the date of publication of this Regulation.

Note: A Logbook is a record of all training the learner has received, contributing to their portfolio of evidence.

Skills Obtained as Outcomes

- Maintain process control systems.
- Maintain Programmable Logic Controllers (PLC).
- Demonstrate understanding of the principles of process Communication Systems.
- Maintain and support policies and procedures to solve a variety of problems within a Measurement, Control, and Instrumentation field.
- Range: Problems include both familiar and unfamiliar.
- The learner can identify deviations related to equipment and procedures and creatively finding solutions through clearly defined methods and techniques.
- Work effectively with others as a member of a team daily to effectively provide maintenance and related services to process control systems.
- Organize and manage oneself and one's activities responsibly and effectively by proactively handling and maintaining instrumentation, equipment, and tools.
- Communicate effectively using appropriate verbal and nonverbal skills to ensure a smooth shift take-over and hand-over and reporting all work-related issues.
- Demonstrate an understanding of the world, as a set of related systems by recognizing that problem solving in the context of Instrumentation and Analytical equipment does not happen in isolation.
- Use science and technology to show responsibility towards the environment and health of the broader community by complying with health, safety and environmental policies and procedures as dictated by legislation.

Qualification Outcome

Qualified Instrument Mechanician (Red seal) Internationally Recognised

Types of Jobs Pertaining to the Trade

- Entrepreneur / Contractor
- As an employee in any of the industries listed

Approximate Trade Duration:

Off the job practical training

Phase 1 – Duration – 15 Weeks

Phase 2 – Duration – 12 Weeks

Phase 3 – Duration – 8 Weeks

Phase 4 – Duration – 4 Weeks (Revision and Trade Test)

Industries where they can work if Qualified

- Mining
- Manufacturing
- Agriculture
- Chemical

Workplace (on the job) experience

- 18 months. Registered learner with a SETA.
- 3 years ARPL route.

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