



SHUKELA TRAINING CENTRE
31 Sugar Mill Way, Mount Edgecombe, 4300
P.O. Box 23, Mount Edgecombe, 4300
Telephone: +27 31 508 7700
Facsimile: +27 31 502 3520
Website: www.sasa.org.za

QUALIFICATION TITLE: INSTRUMENTATION PHASE 1

COURSE DURATION : 12 Weeks

TARGET POPULATION: 1st year Apprentices

COURSE CONTENT :

- Induction to Shukela Training Centre
- General safety in the workplace
- Identify and interpret engineering drawings
- Identify engineering materials and treatments
- Identify basic hand and measuring tools
- Apply basic hand tools
- Fuse and gas weld mild steel plate
- Braze /silver solder ferrous /non-ferrous metals
- Arc weld mild steel plate
- Gas cut mild steel plate
- Install small bore instrument tubing
- Describe the generation of electricity
- Identify and use electrical test instruments
- Wire and fault find on relay panels
- Design and wire alarm circuits
- Understand the fundamentals of automatic controls.
- Single and three phase motor testing
- Joining of conductors and cables.



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QUALIFICATION TITLE: INSTRUMENTATION PHASE 2

COURSE DURATION : 12 Weeks

TARGET POPULATION: 2nd Year Apprentices who have successfully completed Phase 1 or individuals who have been recommended for this course as a result of an assessment conducted at this Centre.

COURSE CONTENT :

- Fundamentals of pressure measurement
- Principles of level Measuring Equipment
- Principles of flow Measuring Equipment
- Principles of temperature Measurement
- Read instrument diagrams and symbols
- Maintain control valves and positioners
- Maintenance of recorders and controllers
- Identify and test electronic components
- Construct and test electronic circuits
- Install and program PLC's
- Design and fault find on pneumatic circuits
- Design and fault find on elect - pneumatic circuits



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QUALIFICATION TITLE: INSTRUMENTATION PHASE 3

COURSE DURATION : 10 Weeks

TARGET POPULATION: 2nd / 3rd Year Apprentices who have successfully completed Phase 2 or individuals who have been recommended for this course as a result of an assessment conducted at this Centre.

COURSE CONTENT :

- Fault find on electrical alarm panels
- Use a multi meter to test mystery boxes
- Calibration and alignment of controllers
- Calibration of differential pressure transmitter
- Calibration of control valves and positioners
- Temperature Installation
- Pneumatic control loops
- Electronic control loops
- Process control
- Maintain a DC drive unit
- Maintain an AC drive unit
- Construct and test electronic circuits