

# WAGE GRADE CAREER PATH

WG 2602

## Electronic Measurement Equipment Mechanic

This occupation covers nonsupervisory jobs involved in the testing, maintenance, repair, calibration, and installation of electronic test, measurement, and diagnostic equipment (TMDE). This equipment is used to maintain and assure the functional accuracy and operational precision of industrial, experimental, airborne, marine, and ground electronic systems and equipment. Electronic measurement equipment work requires knowledge and practical application of electronic principles to support measurement and control equipment, measurement instruments, and test stations. The work also requires the ability to perform precise measurement of electrical and electronic values, quantities, and relationships.

Electronic measurement equipment work also requires skill and knowledge in:

- operating a variety of electronic test equipment;
- using tools of the trade to rewire equipment, solder connections, and fabricate and assemble test equipment, cables, programmers, and adapters according to manufacturers' specifications; and
- using computer systems and software to operate automated testing and calibration systems and to document results.

### Journeyman

- 1 Continue required on-the-job and formal classroom training required in Civilian Training Plan
- 2 Complete task qualifications for current position
- 3 Complete task certifications for current position
- 4 Master common to complex work tasks. At Grade 10 Electronic measurement equipment mechanics exercise skill at:
  - reading and interpreting clearly defined technical information contained in schematics, manufacturers' specifications, fault isolation aids, and calibration procedures;
  - troubleshooting equipment to localize defects;
  - operating a variety of test equipment such as oscilloscopes, signal and frequency counters, digital voltmeters, multimeters, spectrum analyzers, and other specialized equipment;
  - making adjustments to potentiometers, capacitors, and coils related to characteristics such as gain, distortion, linearity, and sensitivity;
  - repairing, adjusting, or replacing parts and installing modifications to the various circuits or wiring in accordance with technical directives and instructions;
  - using computer equipment and software to maintain records and run automated tests; and
  - using basic hand and power tools, such as wire strippers, screwdrivers, hand drills, files, and soldering irons, to repair, align, and assemble equipment.
- 5 Master common to complex work tasks including: Grade 11 Electronic measurement equipment mechanics at this level apply a comprehensive knowledge of:
  - operating electronic principles related to equipment which is:
    - integrated with other devices; and
    - complicated by a variety of multicomponent assemblies and devices with intricate functional relationships;
  - production and utilization of oscillations over a broad range of frequencies;
  - signal and wave form behavior, distortion, and amplification;
  - pulse, trigger, and synchronization techniques;
  - digital/analog processing and data conversion techniques;
  - a variety of display and indication methods;
  - methods of signal modulation and electromagnetic radiation;
  - methods and techniques of precise measurement of electrical and electronic quantities and relationships, such as standing wave ratio, power, impedance, reactance, and attenuation; and
  - established techniques and methods to test, repair, align, and calibrate a wide variety of test equipment.

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Mechanics at this level are provided written or oral instructions, blueprints, or sketches of the item or system to be installed or repaired. They work in accordance with available drawings, specifications, or technical orders, and must often develop diagrams and sketches for equipment where specifications are vague and incomplete. These mechanics personally inspect the equipment to identify the work to be done, plan their own work, or devise a plan for others to follow. Mechanics at this level make templates when necessary. They select, use, or prescribe methods, materials, and machines most appropriate for the assigned project.
- 6 Master common to complex work tasks including: Electronic measurement equipment mechanics at grade 12 apply a thorough knowledge and understanding of:
  - the design, construction, function, and end-use application of a variety of highly complex, unconventional, custom-built precision measurement equipment used in connection with research, experimental, or testing activities;
  - electronic theory to calculate pulses and waveforms and trace relationships in the signal flow; and
  - innovations of the trade to perform major modifications to general purpose or common, commercially-manufactured test equipment.

Provide Grade 12 mechanics exercise significantly more judgment and independence in determining the methods and techniques required to solve unusually complex maintenance and repair problems than grade 11 mechanics. They independently judge the impact modifications and use of special test devices may have on tracing malfunctions, achieving test objectives, and ensuring proper alignment of integrated devices contained in the highly complex equipment serviced at this level. They determine the work sequence and special or nonstandard trade techniques required, and prescribe methods, materials, and procedures to be used by lower-graded workers. For example, they develop detailed schematics and drawings for use by lower-graded workers in the repair and maintenance of one-of-a-kind equipment production support service
- 7 Provide production support services
- 8 Maintain successful to above average performance ratings

This list isn't all inclusive. For more information on your series, visit the site below.

[OPM Classification Standards](#)