



WAGE DATA

Rate Type / Statistical Type	Entry level	Mean	Experienced
Annual wage or salary	\$41,999	\$47,531	\$50,000
Hourly wage	\$21.76	\$24.18	\$26.56

JOB DESCRIPTION

Apply principles of mechanical engineering to modify, develop, test, or calibrate machinery and equipment under direction of engineering staff or physical scientists.

DUTIES

- Devise, fabricate, and assemble new or modified mechanical components using computer technology.
- Analyze dials and meters to determine amperage, voltage, electrical output and input at specific operating temperature to analyze parts performance.
- Analyze test results in relation to design or rated specifications and test objectives, and modify or adjust equipment to meet specifications.
- Evaluate tool drawing designs by measuring drawing dimensions and comparing with original specifications for form and function using engineering skills.
- Discuss changes in design, method of manufacture and assembly, and drafting techniques and procedures with staff and coordinate corrections.
- Operate drill press, grinders, engine lathe, or other machines to modify parts tested or to fabricate experimental parts for testing.
- Review project instructions and blueprints to ascertain test specifications, procedures, and objectives, and test nature of technical problems such as redesign.
- Design and conduct tests of complete units and components under operational conditions to investigate proposals for improving equipment performance.
- Review project instructions and specifications to identify, modify and plan requirements fabrication, assembly and testing.
- Record test procedures and results, numerical and graphical data, and recommendations for changes in product or test methods.

TOOLS and TECHNOLOGY

Tools used in this occupation:

Amplifiers — High-voltage amplifiers, Linear amplifiers, Switched amplifiers

Calipers — Dial calipers, Vernier calipers

Gas welding or brazing or cutting apparatus — Dry rod ovens, Gas welding equipment, Oxyacetylene welding equipment

Power grinders — Cylindrical grinders, Pedestal grinders, Surface grinders

Screwdrivers — Offset screwdrivers, Phillips head screwdrivers, Slotted screwdrivers, Straight screwdrivers

Technology used in this occupation:

Analytical or scientific software — MSC Software Adams, Spectral Dynamics STARAcoustics, The MathWorks MATLAB, Wolfram Research Mathematica

Computer aided design CAD software — Autodesk AutoCAD Mechanical, Bentley MicroStation, IBM CATIA V5, SolidWorks CAD software

Computer aided manufacturing CAM software — CNC Mastercam, Three-dimensional 3D solid modeling software

Development environment software — Microsoft Visual Basic, National Instruments LabVIEW

Industrial control software — Computerized numerical control CNC programming software, Robotic control software, Soft Servo Systems Ladder-Works PLC

KNOWLEDGE

Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

Engineering and Technology — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Physics — Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.

SKILLS

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.

Speaking — Talking to others to convey information effectively.

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

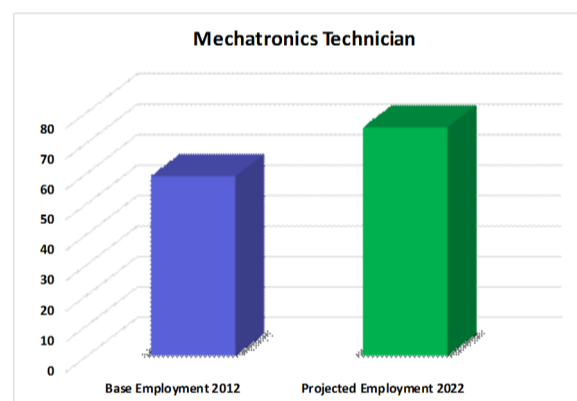
Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

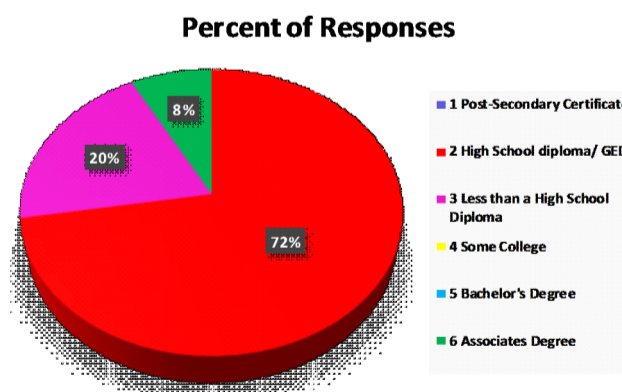
EMPLOYMENT PROJECTION



This information is based on LMI Gateway Data

EDUCATION

The graph below shows the results of a national survey listing the most common required level of education for Mechatronics Technician.



EDUCATION FOR THIS JOB

- 2014 Catalogue of Colorado Advanced Manufacturing Program and Skill Resources
<http://www.coloradomanufacturingcareers.com/>
- Approved Colorado Community College Manufacturing Cluster education programs
<http://www.coloradocommunitycolleges.com/go/programs/skilled-trades-technical-sciences/>
<http://www.coloradocommunitycolleges.com/go/>
- Colorado Four Year Colleges and Universities
<http://higher.ed.colorado.gov/academics/colleges/public4year.asp>
- Locations to Get Manufacturing Certificates
<http://www.coloradomanufacturingcareers.com/>

