



Research Job Function

Scientific Instrument Maker

Grade 54

Summary

Performs highly skilled precision work in design, development, construction, assembly, and testing of a wide variety of scientific instruments and experimental equipment. Assists scientists and engineers with project planning and translates concepts and ideas into formally designed working models. Requires the use of considerable capability, inventiveness, mechanical ingenuity, and creative ability.

Typical Duties

1. Participates in the design of experimental mechanical or electromechanical instruments and equipment.
2. Organizes project procedures and provides cost estimates.
3. Works on complex and diverse assignments, operating metal working machine tools and hand tools to shape, fabricate, and install a wide variety of mechanical assemblies, mechanical instruments, or mechanical assemblies of electrical or electronic instruments.
4. Recommends appropriate engineering materials and on a regular basis skillfully works a wide variety of materials including brass, aluminum, copper, tool steel, stainless steel, graphite, composites, and plastics.
5. Regularly finishes above-mentioned materials to finest tolerance.
6. Fits and installs precision components such as timing devices, springs, balance mechanisms, and gear trains in housing.
7. Works from verbal instructions or self-drawn informal designs.
8. Designs and fabricates glass-metal seals and mechanical-electronic interfaces.
9. Fabricates and tests pressure vessels and vacuum chambers.
10. May informally instruct safe shop practice and practical design to nonshop personnel.
11. Performs related job duties as required.

Typical Requirements

Education: Technical school training beyond high school or equivalent proven experience.

Skills and Experience: Ten or more years of experience as all-around machinist, including previous experience in scientific precision instrument fabrication. Demonstrated design capability, mechanical ingenuity, inventiveness, and problem-solving ability.

Note: This is a model job description reflecting a sample of typical duties. It is intended to suggest a general level of skill and complexity and as such is not a substitute for the local, specific descriptions for individual jobs.

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