

Precision Machinist

Job Code 50017593

General Description

Responsible for providing highly skilled fabrication, assembly and repair of precise and complex instruments, machines, equipment, parts, and scientific instruments.

Examples of Duties

Calculate dimensions and tolerances.

Machine parts to specifications using machine tools such as lathes, milling machines, shapers, and grinders.

Measure, examine, and test completed units in order to detect defects and insure conformance to specifications, using precision instruments such as micrometers, calipers and gauges, and scales.

Order and maintain inventory of general and specialized tooling.

Study sample parts, blueprints, drawings, and engineering information in order to determine methods and sequences of operations needed to fabricate products, and determine product dimensions and tolerances.

Maintain industrial machines.

Install repaired parts in equipment, or install new equipment.

Clean and lubricate machines, tools, and equipment in order to remove grease, rust, stains, and foreign materials.

Set controls to regulate machining, or enter commands to retrieve, input, or edit computerized machine control media.

Dismantle machines or equipment, using hand tools and power tools, in order to examine parts for defects and replace defective parts where needed.

Establish work procedures for fabricating new structural products, using a variety of machine tools.

Fit and assemble parts to make or repair machine tools.

Evaluate experimental procedures, and recommend changes or modifications for improved efficiency and adaptability to setup and production.

Design fixtures, tooling, and experimental parts to meet special engineering needs.

Prepare working sketches and/or drawings for the illustration of product appearance.

Set up and operate metalworking, brazing, heat-treating, welding, and cutting equipment.

Test experimental models under simulated operating conditions for such purposes as development, standardization, and feasibility of design.

Plan complicated fabrication processes, draw and implement engineering designs.

Use CAD/CAM software in the design process.

Perform other duties as required.

Knowledge, Skills, and Abilities

Knowledge of: general university policies and procedures, shop safety, basic employee management, oral and written communications, mathematics, engineering design practices, CAD, CAM, shop materials, facilities security, basic electricity, basic mechanics, hydraulics and pneumatics, material properties, layout, and machining procedures, machining parameters for billet stock, weldments, fabricated assemblies and castings.

Skill in: using machine tools and specialized and general tooling, using precision measuring equipment, understanding technical literature, using computers and related software, managing employees, designing and producing machined parts, general repair, creating engineering drawings, written and oral communication.

Ability to: read and interpret complex drawings, charts, and designs; work from ideas and draw sketches and designs; make varied mathematical computations involved in designing and constructing parts of various nature, use apparatus and equipment; design, troubleshoot and maintain complex equipment; operate standard tools and equipment; establish and maintain good working relationships with students, faculty, and staff, identify problems, determine possible solutions, and actively work to resolve the issues, use wide array of machine tools, sheet metal tools and precision manufacturing equipment.

Education and Experience

To qualify for this classification, an individual must possess any combination of experience and education that would likely produce the required knowledge, skills, and abilities.

Other Requirements