

IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES ▼
HUMAN RESOURCES ENTERPRISE

METROLOGIST

DEFINITION

Operates and maintains the State Metrology Laboratory in cooperation and accordance with the National Bureau of Standards; performs related work as required.

The Work Examples and Competencies listed are for illustrative purposes only and not intended to be the primary basis for position classification decisions.

WORK EXAMPLES

Analyzes data from calibrations to determine and utilize uncertainties in performing future calibrations of like weights or measures.

Determines, on a daily basis, the correct functioning of the metrology devices used in the calibrations of standards.

Instructs technical personnel in the proper use of standards of mass, volume and length, and other measurement instruments.

Calibrates by direct comparison with state standards, all standards of mass (weight), volume, and length used by business and industry, research and educational institutions, and government in the State of Iowa; issues certificates of calibration on approved standards.

Calibrates tank trucks used by business and industry in the State using known amounts of water and markers.

Maintains records and writes monthly reports regarding work conducted in the State Metrology Laboratory.

Works with Supervisor of Standards to develop new methods and techniques for calibrating standards.

Obtains annual laboratory certification from the National Bureau of Standards by correctly solving mathematical problems, utilizing directives and formulas specified by the Bureau.

COMPETENCIES REQUIRED

Knowledge of the principles of metrology.

Knowledge of motor fuels quality and weights and measures inspection and techniques.

Knowledge of state laws pertaining to motor fuels, quality, weights, and measures.

Knowledge of the principles of dielectric and near infrared grain moisture measuring techniques and devices.

Knowledge of the various types of weighing and measures in devices and systems in commercial use.

Knowledge of legal evidence and enforcement procedures relative to the work.

Knowledge of applied physics, chemistry, mathematics and computer programs/systems.

Ability to plan for and carry out a statewide motor fuels quality, weights, and measures inspection and enforcement programs.

Ability to pass metrologist certification tests and/or other courses and modules conducted by the State, the National Institute of Standards and Technology or other approved training sources.

Ability to determine irregularities in the operation of weighing and measuring devices and systems.

Ability to make determinations on complex enforcement actions. These determinations include, but are not limited to, removing standards and/or devices from service permanently or temporarily based on the results of tests and calibrations.

Ability to maintain the State Metrology Laboratory so that the facility is free from dust, dirt, and other interfering factors in order to ensure that the measuring equipment functions with the greatest known precision and to meet standards mandated by the National Bureau of Standards.

Ability to perform mathematical calculations manually or with the aid of a programmable calculator.

Ability to maintain routine records and reports regarding activities of the Metrology Laboratory.

Ability to statistically analyze, record, and compare data to determine uncertainties in the calibration of devices. This includes, but is not limited to, determining how changes in temperature, barometric, and humidity changes affect uncertainties.

Ability to statistically analyze uncertainties in the calibration procedures as well as in the balances used for such purposes.

Ability to present data to NIST in formats acceptable to the Office of Weights and Measures in such a manner as to allow comparisons with other metrology laboratories with like equipment and to determine uncertainties between unlike equipment.

Displays high standards of ethical conduct. Exhibits honesty and integrity. Refrains from theft-related, dishonest and unethical behavior.

Works and communicates with internal and external clients and customers to meet their needs in a polite, courteous, and cooperative manner. Committed to quality service.

Displays a high level of initiative, effort and commitment towards completing assignments efficiently. Works with minimal supervision. Demonstrates responsible behavior and attention to detail.

Responds appropriately to supervision. Makes an effort to follow policy and cooperate with supervisors.

Aligns behavior with the needs, priorities and goals of the organization.

Encourages and facilitates cooperation, pride, trust and group identity. Fosters commitment and team spirit.

Expresses information to individuals or groups effectively, taking into account the audience and nature of the information. Listens to others and responds appropriately.

EDUCATION, EXPERIENCE, AND SPECIAL REQUIREMENTS

Graduation from an accredited college or university with major course work in Metrology plus two years of experience performing technical weights and measures, and/or calibrations;

OR

two years of post high school education and completion of basic metrology classes as conducted by the National Institute of Standards and Technology plus four years of experience performing technical weights and measures inspection and/or calibration.

Effective Date: 09/03 CH