



STATE OF NEVADA
Department of Administration
Division of Human Resource Management

CLASS SPECIFICATION

<u>TITLE</u>	<u>GRADE</u>	<u>EEO-4</u>	<u>CODE</u>
METROLOGIST III	36	B	1.405
METROLOGIST II	34	B	1.403
METROLOGIST I	32	B	1.402

SERIES CONCEPT

Under general supervision, a Metrologist performs activities and processes involved in the effective operation of the Nevada Measurement Standards Laboratory; calibrates measures of mass, length and volume against the official State standards; and ensures that the Laboratory remains certified by the National Institute of Standards and Technology (NIST) in order to provide standard calibration services traceable to the U.S. national standards for industry, government agencies, educational institutions, business and research facilities.

Test devices used for weighing and measuring from State, federal and private agencies; receive and prepare devices to be tested; estimate testing or calibration cost for outside agencies; determine equipment, weights or containers to use for testing; calculate specifications and tolerances allowable; determine the suitability of the device; issue certificates to verify accuracy; and determine the inaccuracy of the device and make necessary adjustments or modifications as appropriate.

Advise commercial, industrial, institutional and government users of measurement standards on technical requirements pertaining to measuring systems, standards and test instrumentation; testify in court as an expert witness on calibration procedures and accuracy of standards; evaluate, study and recommend appropriate methods and procedures of measurement in special applications such as moisture content, cryogenic liquid metering, volume of compressed gases, fossil and hydrocarbon fuel heating values and material densities; apprise the NIST of deficiencies in supplied equipment, of added laboratory capabilities, and of emerging new technology needs of State laboratory programs.

Inspect, clean and maintain field equipment; check for leaks, dents and broken glass; inspect valves, fittings, piping, pumps and safety lines; and adjust as needed to facilitate equipment use in a safe and accurate manner.

Prepare reports of metrology findings; attach work sheets and calculations to copies of certificates; maintain records and files; forward original certificates to Weights and Measures office; and complete periodic activity reports to document findings and record accuracy of devices tested.

Train Weights and Measures Inspectors in the use of equipment; schedule training sessions; explain procedures; demonstrate use and operation of devices; provide instructions on maintenance and repair; and alert to common problems to provide for consistent operation and maintenance of weights and measures equipment.

Participate in national laboratory auditing programs, proficiency testing, regional measurement assurance programs and surveys; attend seminars and review scientific publications as required to keep current on new developments and techniques; maintain positive contact with industry representatives, service agencies, private corporations, inspectors and State agencies to identify needs.

Perform related duties as assigned.

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CLASS CONCEPTS

Metrologist III: Under limited supervision, the incumbent manages the Nevada Measurement Standards Laboratory, in addition to performing the full range of duties outlined in the series concept. The incumbent oversees, develops and maintains metrology laboratory compliance to NIST standards; develops and implements program policies and procedures; schedules and oversees the testing of standards; maintains the security and verification of standards to provide a comparison for testing, weighing and measuring devices on a Statewide basis; and supervises lower level Metrologist positions, and other personnel as assigned, to include performance evaluations, work performance standards, work assignment and review, hiring, training and discipline. This is the supervisory level in the series.

Metrologist II: Under general supervision, incumbents perform the full range of duties outlined in the series concept and may act as a lead-worker and provide field training to newly-hired personnel. This is the journey level in the series.

Metrologist I: Under close supervision, incumbents receive training in performing all or part of the duties outlined in the series concept. This is the trainee level in the series. Progression to the journey level may occur upon meeting minimum qualifications, satisfactory performance and with the approval of the appointing authority.

MINIMUM QUALIFICATIONS

SPECIAL REQUIREMENTS:

- * At the Metrologist I level, as part of the interview process, applicants must take and pass the proficiency examination given by the National Institute of Standards and Technology as a condition of employment.
- * At every level in the series, applicants must have at least 6 credits in science, mathematics, statistics, physics or engineering from an accredited post-secondary institution at the time of application. A copy of the transcripts must be attached to the application to be considered.

INFORMATIONAL NOTES:

- * Incumbents at the Metrologist II and Metrologist III levels must possess and maintain approved signatory status from the National Institute of Standards and Technology (NIST) at the time of appointment and as a condition for continuing employment.
- * Incumbents at the Metrologist I level must obtain approved signatory status from the National Institute of Standards and Technology (NIST) within one year of appointment or as certification courses become available.

METROLOGIST III

EDUCATION AND EXPERIENCE: Bachelor’s degree from an accredited college or university in science, mathematics, statistics, physics or engineering and one year of professional work experience in the operation, inspection, maintenance or installation of weighing and measuring instruments; **OR** graduation from high school or equivalent and three years of professional work experience in the operation, inspection, maintenance or installation of weighing and measuring instruments; **OR** one year as a Metrologist II in Nevada State service; **OR** an equivalent combination of education and experience as described above. *(See Special Requirements and Informational Notes)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):
Detailed knowledge of: NIST certification standards and procedures; metrology laboratory operations; safety precautions in the handling and testing of applicable weights (up to 1000 pounds) and volume containers (up

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MINIMUM QUALIFICATIONS (cont'd)

METROLOGIST III (cont'd)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application): (cont'd)
to 1000 gallons). **Working knowledge of:** Nevada Revised Statutes pertaining to weights and measures; departmental regulations, policies, procedures and standards related to weights, measures, and adopted and recommended handbooks. **General knowledge of:** requirements for the competence of testing and calibration laboratories (ISO 17025); development and implementation of a Measurement Assurance Program; supervisory principles and practices; policy and procedure development; State administrative regulations and procedures. **Ability to:** schedule, track, assign and review work within the laboratory to meet all State and customer needs; coordinate and train subordinate personnel; *and all knowledge, skills and abilities required at the lower levels.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
Working knowledge of: State personnel, purchasing and other State administrative regulations and procedures. **Ability to:** develop simultaneous equations for surveillance test procedures designed to monitor the values for mass standards between calibrations; train, supervise and evaluate the performance of assigned staff; coordinate communications with industry representatives, service agencies, private corporations, inspectors and State agencies to identify needs.

METROLOGIST II

EDUCATION AND EXPERIENCE: Associate's degree from an accredited college or university in science, mathematics, statistics, physics or engineering and one year of professional work experience in the operation, inspection, maintenance or installation of weighing and measuring instruments; **OR** graduation from high school or equivalent and two years of professional experience in the operation, inspection, maintenance or installation of weighing and measuring instruments; **OR** one year as a Metrologist I in Nevada State service; **OR** two years as a Weights and Measures Inspector II in Nevada State service; **OR** an equivalent combination of education and experience as described above. *(See Special Requirements and Informational Notes)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):
Working knowledge of: physical science for determining densities and evaluating compounds used in weights; statistics and statistical computations; NIST certification standards and procedures; metric, troy, inch-pound, and apothecary systems of measurement; commercial weighing and measuring devices; metrology laboratory operations; calibration and verification procedures for physical standards; environmental factors that adversely affect laboratory calibration work, and how to mitigate or avoid them. **Ability to:** apply principles of mathematics, physics and engineering mechanics to solve measurement or standards related problems in scientific, commercial or industrial environments where quantities are weighed or measured; evaluate laboratory results, sampling plans and statistical quality and quantity control data and determine the nature and type of corrective action(s) required; properly handle and use glass and metal reference standards for calibration of volume measurements; maintain accurate records and control charts; calculate buoyancy corrections for differing densities; read and use scientific publications and technical reports in the field of metrology; perform gravimetric calibrations; calibrate metal tapes. **Skill in:** properly handling and using glass and metal reference standards for calibration of volume measurements; *and all knowledge, skills and abilities required at the lower level.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
(These are identical to the Entry Level Knowledge, Skills and Abilities required for Metrologist III.)

METROLOGIST I

EDUCATION AND EXPERIENCE: Graduation from high school or equivalent education and one year of work experience in the operation, inspection, maintenance or installation of weighing and measuring

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MINIMUM QUALIFICATIONS (cont'd)

METROLOGIST I (cont'd)

EDUCATION AND EXPERIENCE: (cont'd)

instruments; **OR** one year as a Weights and Measures Inspector I in Nevada State service; **OR** an equivalent combination of education and experience as described above. *(See Special Requirements and Informational Notes)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

General knowledge of: physical science, math and electronics applied to weights and measures; basic safety procedures used when working with hazardous chemicals, flammable liquids and handling mass weights; problem solving techniques; basic mathematics; and organizational principles. **Ability to:** read and understand technical information; communicate effectively both verbally and in writing; prepare narrative and statistical reports; analyze problems and develop logical solutions; establish and maintain positive and cooperative working relationships with others; work independently and as part of a team; interact effectively with clients and/or staff from a variety of backgrounds; and operate a computer and related software.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):

(These are identical to the Entry Level Knowledge, Skills and Abilities required for Metrologist II.)

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards for positions assigned to this class.

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ESTABLISHED	7/2/15UC	7/1/71	7/2/15UC
REVISED:		3/1/72	
REVISED:		7/2/75R	
		5/28/76PAC	
REVISED:		7/1/87-12P	
		10/17/86PC	
REVISED:		7/1/97P	
		6/4/96PC	
REVISED:		9/14/12RNC	
		9/14/12PC	
REVISED:		7/2/15UC	
REVISED:	7/2/18UC	7/2/18UC	7/2/18UC