



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>
MICROBIOLOGIST V	38	A	10.710
MICROBIOLOGIST IV	36	B	10.711
MICROBIOLOGIST III	34	B	10.715
MICROBIOLOGIST II	32	B	10.717
MICROBIOLOGIST I	30	B	10.721

SERIES CONCEPT

Microbiologists perform a variety of microbiological, serological, parasitological, immunological, molecular and clinical laboratory tests and procedures to detect, isolate and identify microorganisms in milk, blood, urine, feces, tissue and other samples; analyze, record and report test results in assigned program areas such as disease control and clinical and environmental testing.

Process samples according to established laboratory procedures; label and record identification data; select and implement the appropriate testing methods and techniques based on current and accepted scientific knowledge; prepare positive and negative controls as appropriate; follow and observe universal precautions, established health and safety policies and procedures, chemical hygiene and quality control measures.

Prepare samples for testing and analysis; mix solutions, prepare and culture media; incubate specimens to enhance growth of microorganisms; section and stain tissue for microscopic examination; inspect cultures and record observations of growth, color, morphology, colony morphology and other significant changes essential to identification.

Participate in obtaining specimens for analysis by drawing blood, obtaining and transferring clinical and environmental samples, and conducting other tests using aseptic techniques and established protocols.

Operate, calibrate and adjust a wide variety of standard, specialized and/or sophisticated laboratory equipment including, but not limited to, floor and benchtop centrifuges; biological incubators and incinerators; light, fluorescent and dissecting microscopes; autoclaves; vacuum pumps; analytical balances; humidifiers; pH meters; manual and automatic pipettes; spectrophotometers; surgical instruments; saws; Bunsen burner; scales; graduated cylinders; high performance liquid chromatography; real time polymerase chain reaction and other molecular detection equipment; automated liquid handling systems; laboratory robots; syringes; hematology and electrolyte analyzers and others.

Identify microorganisms to the genus and species level; research current scientific literature and consult diagnostic sources; report findings to appropriate individuals and authorities as required by law and agency policy; conduct antimicrobial susceptibility testing where indicated and interpret test results to facilitate proper treatment of infected animals.

Work cooperatively with human and animal health providers, health officials, practicing and regulatory veterinarians and others regarding the identification of pathogenic microorganisms; communicate with patients, animal owners and others to provide and obtain information concerning symptoms, epidemiological links, test results and diagnosis; maintain confidentiality of information as appropriate.

Prepare and maintain required documentation of test results; record and analyze data using computer hardware and software, which may include the Laboratory Information Management System (LIMS); ensure all data is maintained, stored, disseminated and/or electronically transmitted in compliance with all State and/or federal rules and regulations.

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SERIES CONCEPT (cont'd)

Monitor and maintain adequate supplies and equipment; maintain equipment under appropriate preventive maintenance and calibration schedules, request materials according to established procedures; provide training, document proficiency and provide work direction to lower level laboratory personnel as assigned.

Maintain current knowledge of advances in laboratory technology, disease control and diagnosis, scientific research and federal and State regulations; attend seminars, lectures, meetings and professional conferences; complete and maintain records of continuing education and proficiency as required.

Perform related duties as assigned.

CLASS CONCEPTS

Microbiologist V: Under administrative direction, Microbiologist V's plan, organize, coordinate and oversee the overall operation of a laboratory(ies) in which microbiological, molecular, serological, parasitological, immunological and clinical laboratory tests and procedures are conducted in order to detect, isolate and identify microorganisms in milk, blood, urine, feces, tissue and other samples in accordance with State and federal regulations and standards.

Train, supervise and evaluate the performance of professional microbiologists, laboratory technicians and assistants; develop work performance standards; schedule and assign work and determine priorities; provide technical expertise as requested by subordinate staff.

Establish and revise laboratory policies and procedures; develop, implement and maintain an appropriate quality control and quality assurance system consistent with auditing requirements for laboratories (ISO17025); ensure compliance with current safety requirements; coordinate laboratory activities with other State and federal agencies and entities; may participate in appropriate proficiency testing as required.

Participate in long-range planning and budgeting processes; project personnel and equipment needs; develop and monitor the laboratory budget; order equipment, supplies and materials; maintain current knowledge of technological advancements in microbiological analysis, computer applications and specialized instrumentation.

Microbiologist IV: Under general direction, positions allocated to this class either:

- (1) Report to a supervisor who is not a microbiologist or a veterinarian and work independently in providing microbiological analysis of various materials in support of agency programs and activities; oversee and coordinate the assigned laboratory including analytical equipment and instrumentation; order supplies and equipment; and implement a quality control and quality assurance system; or
- (2) Report to a Microbiologist V, veterinarian or related scientist and in addition, supervise lower level professional microbiologists including responsibility for training; evaluating performance; assigning and reviewing work; and counseling and discipline. Incumbents at this level may also be assigned to participate in budget preparation and monitoring, requesting equipment and supplies, and recommending the purchase of new equipment and instrumentation, but the supervisor has the final decision-making authority.

Microbiologist III: Under general supervision, incumbents perform a broad range of duties outlined in the series concept. This is the journey level for the series.

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CLASS CONCEPTS (cont'd)

Microbiologist II: Under close supervision, incumbents continue to receive training and gain experience in performing duties outlined in the series concept. This is the advanced trainee level for the series. Progression to the journey level may occur upon meeting minimum qualifications, satisfactory performance and with the approval of the appointing authority.

Microbiologist 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 for the series. Progression to the advanced trainee level may occur upon meeting minimum qualifications, satisfactory performance and with the approval of the appointing authority.

MINIMUM QUALIFICATIONS

INFORMATIONAL NOTES:

- * Positions at the Microbiologist V level may be required to possess and maintain either a State of Nevada Certificate as a General Supervisor of a Licensed Laboratory or be American Society for Clinical Pathology (ASCP) licensed as a General Supervisor at the time of employment and as a condition of continuing employment. This requirement will be identified at the time of recruitment.
- * Positions at any level may be required to possess and maintain either a State of Nevada Certificate as a Clinical Laboratory Technologist or ASCP licensure as a Clinical Laboratory Scientist, Medical Technologist or Medical Laboratory Scientist at the time of employment and as a condition of continuing employment. This requirement will be identified at the time of recruitment.
- * Some positions may require specialized and/or agency specific experience which will be identified at the time of recruitment.

SPECIAL REQUIREMENT:

- * Pursuant to NRS 284.4066, some positions in this series have been identified as affecting public safety. Persons offered employment in these positions, must submit to pre-employment screening for controlled substances.

MICROBIOLOGIST V

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university in microbiology, biochemistry, medical technology or closely related field and five years of progressively responsible professional experience as a microbiologist or medical technologist in a laboratory setting conducting various tests on clinical specimens, milk, water, or food products and/or performing clinical, bacteriological, mycobacteriological, mycological, parasitological, molecular, or serological analysis; **OR** one year as a Microbiologist IV in Nevada State service; **OR** an equivalent combination of education and experience above the bachelor's degree level. (See *Special Requirement and Informational Notes.*)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):
Detailed knowledge of: operation and maintenance of specialized and complex laboratory equipment used for clinical and environmental analyses. **Working knowledge of:** supervisory techniques and practices; as applicable, the U.S. Department of Agriculture, the National Animal Health Laboratory Network, the American Association of Veterinary Laboratory Diagnosticians, Environmental Protection Agency, Food and Drug Administration, Health Care Facilities Administrators (HCFA), Clinical Laboratory Improvement Amendments (CLIA) and State statutes pertinent to laboratory testing, safety and security. **Ability to:** plan, organize and oversee laboratory operations; prepare and monitor budgets; oversee the work of professional,

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MINIMUM QUALIFICATIONS (cont'd)

MICROBIOLOGIST V (cont'd)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES: (cont'd)

technical and support personnel; initiate and develop testing policies and procedures; operate specialized and complex equipment; organize work flow and determine priorities; ensure proper training and professional development of assigned staff; maintain statistical data and records; *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: alternate methodologies in testing; providers of equipment and supplies, and repair agencies; U.S. Postal Regulations and International Air Transportation Association Regulations regarding the shipment of pathogenic organisms. **General knowledge of:** State purchasing policies and procedures.

MICROBIOLOGIST IV

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university in microbiology, biochemistry, medical technology or closely related field and four years of professional experience as a microbiologist or medical technologist in a laboratory setting conducting various tests on clinical specimens, milk, water, or food products and/or performing clinical, bacteriological, mycobacteriological, mycological, parasitological, molecular, or serological analysis; **OR** two years as a Microbiologist III in Nevada State service; **OR** an equivalent combination of education and experience above the bachelor's degree level. (*See Special Requirement and Informational Notes.*)

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

Detailed knowledge of: reference materials used to research information related to identification of organisms, interpretation of test results, antibiotic sensitivity, and quality assurance/quality control; safety precautions required with biological and etiological samples, chemicals and potentially hazardous materials; State and federal health and safety regulations applicable to a microbiology laboratory environment; specialized computer equipment and applications specific to the assigned programs and laboratory. **Working knowledge of:** applicable policies and procedures related to laboratory testing. **Ability to:** ensure compliance with established protocols and maintain required proficiency standards; coordinate laboratory activities with other agencies; *and all knowledge, skills and abilities required at the lower levels.*

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

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

MICROBIOLOGIST III

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university in microbiology, biochemistry, medical technology or closely related field and two years of professional experience as a microbiologist or medical technologist in a laboratory setting conducting various tests on clinical specimens, milk, water, or food products and/or performing clinical, bacteriological, mycobacteriological, mycological, parasitological, molecular, and serological analysis; **OR** one year as a Microbiologist II in Nevada State service; **OR** an equivalent combination of education and experience above the bachelor's degree level. (*See Special Requirement and Informational Notes.*)

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

Working knowledge of: laboratory equipment including maintenance and proper use; State and federal health and safety regulations applicable to a laboratory environment; reference materials used to research information related to identification of antibiotic sensitivity, and quality assurance/quality control; specialized computer equipment and applications. **Ability to:** compare, contrast, analyze, and interpret test results or

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MINIMUM QUALIFICATIONS (cont'd)

MICROBIOLOGIST III (cont'd)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application): (cont'd)
 statistical data, and formulate conclusions; perform specialized test procedures and adapt to new testing formats; independently conduct microbiological tests and procedures; implement quality assurance procedures and requirements; *and all knowledge, skills and abilities required at the lower levels.*

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

MICROBIOLOGIST II

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university in microbiology, biochemistry, medical technology or closely related field and one year of professional experience in a laboratory setting; **OR** one year as a Microbiologist I in Nevada State service; **OR** an equivalent combination of education and experience above the bachelor's degree level. *(See Special Requirement and Informational Notes.)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
General knowledge of: theories and principles of microbiology, molecular methods, and immunology; aseptic techniques; safety precautions required with biological and etiological samples, chemicals and potentially hazardous materials; health and safety regulations applicable to a laboratory environment; computer equipment and applications used in a microbiology laboratory. **Skill in:** staining and making slides. **Ability to:** perform a variety of laboratory procedures according to procedure manuals; interpret and explain test results and laboratory procedures; read, record, analyze and interpret test results or statistical data, and formulate conclusions; follow standard laboratory testing methodology to ensure accuracy of results; distinguish colors, turbidity, shapes, and sizes in order to interpret test results and findings; *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 for Microbiologist III.)

MICROBIOLOGIST I

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university in microbiology, biochemistry, medical technology or closely related field; **OR** an equivalent combination of education and experience above the bachelor's degree level. *(See Special Requirement and Informational Notes.)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):
General knowledge of: theories and principles of microbiology, molecular methods, and immunology; aseptic techniques; safety precautions required with biological and etiological samples, chemicals and potentially hazardous materials. **Ability to:** operate standard laboratory equipment; distinguish colors, turbidity, shapes, and sizes in order to follow specified laboratory procedures; communicate effectively both orally and in writing.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
(These are identical to the Entry Level Knowledge, Skills and Abilities for Microbiologist 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:	8/1/73	8/1/73	8/1/73	8/1/73	8/1/73
REVISED:			10/25/74		
REVISED:		8/21/78			
REVISED:	6/11/82-3				
REVISED:		7/18/86-3	7/18/86-3	7/18/86-3	7/18/86-3
REVISED:	7/1/87-12P	7/1/87-12P	7/1/87-12P	7/1/87-12P	7/1/87-12P
	7/18/86PC	7/18/86PC	7/18/86PC	7/18/86PC	7/18/86PC
REVISED:	7/1/99P	7/1/99P	7/1/99P	7/1/99P	7/1/99P
	12/17/98PC	12/17/98PC	12/17/98PC	12/17/98PC	12/17/98PC
REVISED:	4/11/14PC	4/11/14PC	4/11/14PC	4/11/14PC	4/11/14PC
REVISED:	9/25/15PC	9/25/15PC	9/25/15PC	9/25/15PC	9/25/15PC