



New Mexico State Personnel Office

2600 Cerrillos Road
Santa Fe, New Mexico 87505-0127

Classification Description

MICROBIOLOGISTS

Class Title	Class Code	Pay Band	Alt Pay Band*
Microbiologists-B	F1022B	55	
Microbiologists-O	F1022O	60	
Microbiologists-A	F1022A	65	

**In accordance with SPB Rule 1.7.4.10 NMAC, the assignment to alternative pay bands shall be reviewed annually to determine their appropriateness.*

Occupation Description

Investigate the growth, structure, development and other characteristics of microscopic organisms, such as bacteria, algae or fungi. Include medical microbiologists who study the relationship between organisms and disease or the effects of antibiotics on microorganisms.

Nature of Work

Microbiologists investigate the growth and characteristics of microscopic organisms such as bacteria, algae, or fungi. Most microbiologists specialize in environmental, food, agricultural, or industrial microbiology; virology (the study of viruses); immunology (the study of mechanisms that fight infections); or bioinformatics. Many microbiologists use biotechnology to advance knowledge of cell reproduction and human disease.

Distinguishing Characteristics of Levels

Note: Examples of Work are intended to be cumulative for each progressively higher level of work. The omission of specific statements does not preclude management from assigning other duties which are reasonably within the scope of the duties.

Basic

- Employees in this Role assist in the study of the relationship between organisms and disease or the effect of antibiotics on microorganisms; assure that instruments are functioning correctly; conduct experiments using laboratory animals or greenhouse plants; may coordinate activities of a laboratory and work as part of various scientific teams; assist with comprehensive literature reviews; may conduct basic research to advance knowledge of living organisms; and may recommend new plans, policies, and procedures to protect and clean up the environment.

Recommended Education and Experience for Full Performance

Associate's Degree in biological sciences with emphasis on chemistry, mathematics and/or computer science, and four (4) years experience in Biology, microbiology, virology, parasitological and/or molecular biology specialization in a laboratory setting.

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Minimum Qualifications

High school diploma and two (2) years of experience in Biology, microbiology, virology, parasitological and/or molecular biology specialization in a laboratory setting.

Operational

- Employees in this Role may provide consultation to business firms or government; communicate research plans to non-scientists involved in biotechnology and make recommendations on requirements for funds, supplies, plans, policies and procedures; may perform radiological analyses, and work toward development of new drugs and medical treatment, and submit grant proposals to obtain funding for projects; use electron microscopes, computers, or thermal cyclers to investigate the growth and characteristics of microscopic organisms; issue results of examinations; may plan and administer programs for testing food and drugs.

Recommended Education and Experience for Full Performance

Bachelor's Degree in biological sciences with emphasis on chemistry, mathematics and/or computer science, and two (2) years experience in Biology, microbiology, virology, parasitological or molecular biology specialization in a laboratory setting.

Minimum Qualifications

Associate's Degree in biological sciences with emphasis on chemistry, mathematics and/or computer science, and two (2) years experience in Biology, microbiology, virology, parasitological and/or molecular biology specialization in a laboratory setting. Any combination of education from an accredited college or university in a related field and/or direct experience in this occupation totaling four (4) years may substitute for the required education and experience.

Advanced

- Employees in this Role perform comprehensive evaluations and assist in the preparation of research projects.
- Employees perform microscopic, biochemical, metabolic, immunochemical and serologic examinations; conduct difficult qualitative and quantitative analyses of organic and inorganic materials using instrumentation such as spectrofluorometer and atomic absorption apparatus; may plan, direct, and coordinate the activities of a laboratory section; lead lab staff in performing advanced analyses or examinations.

Recommended Education and Experience for Full Performance

Bachelor's Degree in biological sciences with emphasis on chemistry, mathematics and/or computer science, and three (3) years experience in Biology, microbiology, virology, parasitological and/or molecular biology specialization in a laboratory setting.

Minimum Qualifications

Bachelor's Degree in biological sciences with emphasis on chemistry, mathematics and/or computer science, and two (2) years experience in Biology, microbiology, virology, parasitological and/or molecular biology specialization in a laboratory setting. Any combination of education from an accredited college or university in a related field and/or direct experience in this occupation totaling six (6) years may substitute for the required education and experience.

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Knowledge and Skills

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Knowledge

Biology — Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Chemistry — Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Medicine and Dentistry — Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.

Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Skills

Science — Using scientific rules and methods to solve problems.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Speaking — Talking to others to convey information effectively.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Learning Strategies — Selecting and using training/instructional methods and procedures

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appropriate for the situation when learning or teaching new things.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Statutory Requirements: N/A

Conditions of Employment: Working Conditions for individual positions in this classification will vary based on each *agency's utilization, essential functions, and the recruitment needs* at the time a vacancy is posted. All requirements are subject to possible modification to reasonably accommodate individuals with disabilities.

Default FLSA Status: Non-Exempt. FLSA status may be determined to be different at the agency level based on the agency's utilization of the position.

Bargaining Unit: This position may be covered by a collective bargaining agreement and all terms/conditions of that agreement apply and must be adhered to.

Established: 07/07/2001 **Revised:** 9/20/2011

**Adapted from the United States Bureau of Labor Statistics and are intended to illustrate the typical education and experience required for this occupation.*

Classification description subject to change. Please refer to the SPO website www.spo.state.nm.us to ensure this represents the most current copy of the description.