

MICHIGAN CIVIL SERVICE COMMISSION  
JOB SPECIFICATION  
MICROBIOLOGIST

JOB DESCRIPTION

Employees in this job complete or oversee a variety of professional microbiological tests, analyses and production activities to diagnose human disease, determine food purity, or produce and test biological products.

There are four classifications in this job.

Position Code Title - Microbiologist-E

Microbiologist 9

This is the entry level. As a trainee, the employee carries out a range of professional microbiologist assignments while learning the methods of the work.

Microbiologist 10

This is the intermediate level. The employee performs an expanding range of professional microbiologist assignments in a developing capacity.

Microbiologist P11

This is the experienced level. The employee performs a full range of professional microbiologist assignments in a full-functioning capacity. Considerable independent judgement is used to make decisions in carrying out assignments that have significant impact on services or programs. Guidelines may be available, but require adaptation or interpretation to determine appropriate courses of action.

Position Code Title - Microbiologist-A

Microbiologist 12

This is the advanced level. The employee may function as a lead worker or senior worker. At this level, employees are responsible for overseeing the work assignments of other professionals or have regular assignments which have been recognized by Civil Service as having significantly greater complexity than those assigned at the experienced level.

**NOTE:** Employees generally progress through this series to the experienced level based on satisfactory performance and possession of the required experience.

JOB DUTIES

**NOTE:** The job duties listed are typical examples of the work performed by positions in this job classification. Not all duties assigned to every position are included, nor is it expected that all positions will be assigned every duty.

Takes part in bacteriological, serological, virological, parasitological, and mycological examinations on a variety of samples, specimens, and products.

Participates in microbiological, serological, hematological and virological examinations of specimens from human sources for identifying infections and determining the condition of patients.

Isolates and identifies microorganisms and maintains same in pure culture condition.

Prepares culture media and other reagents.

Participates in the production and testing of such biological products as bacterial or viral vaccines, aerobic and anaerobic toxins, skin test antigens and human blood products.

Performs and analyzes results of serodiagnostic tests for syphilis, fungal infections and other diseases.

Performs microbiological examinations of specimens submitted in conjunction with food poisoning investigations.

Performs microbiological examinations of food products, dairy products, soft drinks, alcoholic beverages, meats, non-alcoholic beverages, animal feeds, antibiotics and plant and animal specimens.

Carries out complement fixation, hemagglutination neutralization and other diagnostic serologic tests.

Tests purchased antigens and antiserum for conformity to standards of usability.

Maintains records and prepares reports and correspondence related to the work.

Performs related work as assigned.

### Additional Job Duties

#### Microbiologist 12 (Lead Worker)

Oversees the work of professional staff by making and reviewing work assignments, establishing priorities, coordinating activities, and resolving related work problems.

#### Microbiologist 12 (Senior Worker)

Performs on a regular basis professional microbiologist assignments that are recognized by Civil Service as more complex than those assigned at the experienced level.

## JOB QUALIFICATIONS

### Knowledge, Skills, and Abilities

**NOTE:** Some knowledge in the area listed is required at the entry level, developing knowledge is required at the intermediate level, considerable knowledge is required at the experienced level, and thorough knowledge is required at the advanced level.

Knowledge of the principles of microbiology, including bacteriology, hematology, mycology, parasitology, serology and virology.

Knowledge of chemistry and biochemistry.

Knowledge of microbiology techniques, terminology, equipment and supplies.

Knowledge of microbiological methods of analyses.

Knowledge of laboratory tests used in microbiology work.

Knowledge of the methods and techniques used in the preparation of biologic products.

Knowledge of laboratory techniques, equipment apparatus and terminology.

Knowledge of diagnostic problems involved in determining the cause and control of disease.

Knowledge of the production, standardization and use of antigens and immune sera.

Knowledge of fundamental antigen and antibody reactions and their principles.

Knowledge of the methods and practices of microbiologic analysis and testing of food and agricultural products.

Knowledge of the sources of technical literature in the field of microbiology.

Knowledge of state and federal laws, regulations, standards and advisory guidelines related to food processing, handling, storage and sale.

Ability to adapt standard laboratory techniques and tests to meet the demands of specific problems.

Ability to assemble and prepare scientific data with clarity and accuracy.

Ability to make complex mathematical computations, use statistical techniques in the treatment of data, and interpret and apply findings.

Ability to maintain records, and prepare reports and correspondence.

Ability to communicate effectively with others.

Ability to maintain favorable public relations.

### Additional Knowledge, Skills, and Abilities

#### Microbiologist 12 (Lead Worker)

Ability to organize and coordinate the work of others.

Ability to set priorities and assign work to other professionals.

### Working Conditions

Some jobs require an employee to work in an office or a laboratory.

Some jobs require an employee to some risk of sustaining illness and injury from the use of chemicals, high-pressure laboratory systems, biological materials, and exposure to disease, radiation, and toxic chemicals.

Some jobs require an employee to work in proximity to caustic chemicals in a darkened and confined area.

Some jobs require an employee to be exposed to disease and illness.

Some jobs require an employee to work in an environment that involves exposure to unpleasant and noxious fumes and odors.

### Physical Requirements

*None*

### Education

Possession of a bachelor's degree in microbiology, medical technology, clinical laboratory sciences, or a related field.

### Experience

#### Microbiologist 9

No specific type or amount is required.

#### Microbiologist 10

One year of professional experience in carrying out microbiology activities to diagnose human disease, determine food purity, or produce and test biological products equivalent to a Microbiologist 9.

### Microbiologist P11

Two years of professional experience in carrying out microbiology activities to diagnose human disease, determine food purity, or produce and test biological products equivalent to a Microbiologist, including one year equivalent to a Microbiologist 10.

### Microbiologist 12

Three years of professional experience in carrying out microbiology activities to diagnose human disease, determine food purity, or produce and test biological products equivalent to a Microbiologist, including one year equivalent to a Microbiologist P11.

### Special Requirements, Licenses, and Certifications

*None*

**NOTE:** Equivalent combinations of education and experience that provide the required knowledge, skills, and abilities will be evaluated on an individual basis.

### JOB CODE, POSITION TITLES AND CODES, AND COMPENSATION INFORMATION

#### Job Code

MICBIOGST

#### Job Code Description

MICROBIOLOGIST

#### Position Title

Microbiologist-E

Microbiologist-A

#### Position Code

MICRGSTE

MICRGSTA

#### Pay Schedule

H21-001

H21-009

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05/11/2012