

**GENERAL DESCRIPTION OF CLASS**

The MICROBIOLOGIST 2 provides accurate and timely detection and identification of microbial populations, microbial contaminants, microbial infections, or genetic abnormalities through the microscopic examination and the analysis of environmental, agricultural, and biological samples. Employees in this class perform a variety of standard and technically complex tests and procedures whose results generally require interpretation and correlation with other tests before being reported.

**DISTINGUISHING FEATURES**

This is the second level of a three-level series. It is distinguished from the lower level by having responsibility for performing technically complex tests and procedures whose results generally require interpretation and correlation with other tests. At this level, employees are expected to routinely exercise independent scientific judgment in the interpretation of data and make recommendations on the application of findings. It is distinguished from the higher level because of less emphasis as an analytical specialist who designs, develops, and implements state-of-the-art methods and procedures.

**DUTIES AND RESPONSIBILITIES**

Employees in this class may specialize in one or several of the fields of microbiology such as food microbiology, medical microbiology, virology, serology, mycology, immunology, or parasitology; however, the employee may be called upon to assist in any of these areas as the need arises.

Allocation of positions to this class will depend on the total work performed which may include one or a combination of the duties or tasks listed below.

- 1. Benchwork.** Typical tasks: logs in sample or specimen noting date, time, and tests to be performed; determines adequacy of sample for necessary tests; prepares necessary equipment and organizes supplies, media, and reagents; prepares sample or specimen for testing by diluting, filtrating, staining, or centrifuging; performs various tests in field of virology, serology, mycology, bacteriology, immunology, and parasitology such as: aerobic plate count, coliform, food borne pathogens, antibiotic residue, enzyme immunoassay, antibiotic susceptibility, fluorescent antibody assay, radioimmune assays, bacterial inhibition assay, added water, and water activity; runs quality control samples with known values to determine if procedure and results are within acceptable limits; calculates numerical results based on quantitative growth patterns; correlates results with other tests, if appropriate.
- 2. Reports.** Typical tasks: enters results of test in log book or computer; completes test result form to be sent to the person or agency who submitted the specimen or sample and contacts them immediately by phone in cases of significant positive test results; interprets results for submitter; requests additional specimens/samples, if necessary; suggests drugs for treatment, if appropriate; completes daily and monthly reports including number and types of tests performed and number of positive findings; maintains accurate and up-to-date records detailing quality control procedures; prepares specimen and accompanying reports to be forwarded to other agencies in cases where exchange of information is warranted.

**3. Advancement of Knowledge.** Typical tasks: keeps current in field by reading literature and attending symposia and workshops; recommends improvements in methodology and incorporation of new procedures; assists in implementing pilot programs to test recommended improvements and procedures; participates in procedure manual preparation by suggesting revisions deemed appropriate; maintains expertise in all areas of laboratory by rotating duties with microbiologists in other sections.

**4. Miscellaneous.** Typical tasks: trains new employees and student interns; assigns and directs the work of support staff such as laboratory technicians; calibrates, troubleshoots, and performs minor maintenance to laboratory equipment; takes inventory and requisitions supplies with supervisor's approval; testifies on methodology and results of tests when those results are evidence in cases of litigation.

## **RELATIONSHIPS WITH OTHERS**

Employees in this class have daily in-person or telephone contact with agency staff to exchange information or discuss test results. Employees in this class also have regular telephone contact with county health departments, physicians, industrial and business representatives, and other agencies to notify them of test results or to discuss issues pertaining to a sample or specimen.

## **SUPERVISION RECEIVED**

Employees in this class work under general supervision of a laboratory supervisor or other administrative superior. Test data and interpretation are reviewed routinely for accuracy and precision. Reports are reviewed upon completion for completeness and accuracy (may be used in cases of litigation). Records are reviewed routinely for quality control. Guidelines used in performance of duties include standardized testing procedures, accepted aseptic and sterilization procedures, established laboratory procedures, and applicable State and Federal regulations.

## KNOWLEDGE, SKILLS, AND ABILITIES (KSA)

General knowledge of inorganic and organic chemistry, biochemistry, and mathematics.

General knowledge of laboratory and microbiological principles, terminology, materials, equipment, procedures, and techniques.

General knowledge of appropriate fields of microbiology such as bacteriology, virology, serology, mycology, immunology, and parasitology.

General knowledge of standard laboratory testing procedures.

General knowledge of the operation and maintenance of various standard laboratory instruments and equipment.

General knowledge of the techniques required for general laboratory safety and the proper handling of hazardous materials.

General knowledge of computer applications in microbiology.

Skill in preparing laboratory specimens/samples, solutions, and stains for testing.

Skill in the care and handling of laboratory specimens, materials, and/or samples.

Skill in operating standard laboratory equipment and instruments.

Skill in preparing written reports which contain analysis of laboratory test results and statistical findings.

Skill in applying written laboratory methods and procedures.

Skill in calibrating and maintaining standard laboratory equipment.

Skill in interpreting test results and diagnosing test problems.

Skill in communicating technical information orally and in writing.

Ability to determine appropriate sample test, test equipment, or instruments to be used.

Ability to learn new complex laboratory procedures.

Ability to perform highly repetitive tasks while maintaining accuracy and speed.

Ability to provide direction and leadership to students and other employees.

Ability to organize and prioritize own work and work of others.

Ability to work with potentially hazardous chemicals and microorganisms.

Some positions in this class may require the following:

General knowledge of a specialized area such as food processing, ecology, or medical microbiology.

**NOTE:** The KNOWLEDGE and SKILLS are required for initial consideration. ABILITIES may be required for initial consideration, at any time during the selection process, or during a trial service period as a final stage of the selection process. Some duties performed by positions in this class may require different KSA's. No attempt is made to describe every KSA required for **all** positions in this class. Additional KSA requirements will be explained on the recruiting announcement.

Adopted 1/90

Revised

Examples of work are typical of duties assigned to this class. No attempt is made to describe every duty performed by all positions in this class.