



## Job Description

**JOB TITLE:** Biology Instructor (Specialization: Microbiology)

**LAST REVISED:** SEPTEMBER 1993

### DEFINITION

Under administrative direction of an educational administrator, to develop curriculum for, provide lecture and laboratory instruction for and evaluate performance of students engaged in the study of microbiology and other related courses as directed, to maintain microbial cultures for use in classroom and laboratory experiments and activities, to participate in shared governance and other activities in support of the instructional program, and to do related work as required.

### JOB CHARACTERISTICS

Incumbent may supervise activities of student laboratory assistants and other student and/or temporary help.

### EXAMPLES OF FUNCTIONS AND TASKS

**Curriculum Development ESSENTIAL:** Review and evaluate curriculum to meet student interests and needs within the parameters of Divisional/Departmental budget constraints and availability of equipment and materials; coordinate with adjunct faculty instructors to enhance consistency of lecture/laboratory content; evaluate and/or revise course descriptions to fit curriculum designs; present recommendations for curriculum changes to the Curriculum Committee and/or other appropriate shared governance bodies; make changes to curriculum as necessary and as approved within the shared governance structure. **PERIPHERAL:** Review and evaluate curriculum to meet changes in laws, regulations and standards.

**Lecture/Laboratory ESSENTIAL:** Complete book order forms and provide the District bookstore with master copies of syllabi for printing; **Preparation** coordinate with area bookstores and other suppliers to make necessary supplies available to students at reasonable prices; review study guides and other ancillary materials to determine potential for classroom and/or laboratory and/or field use; select textbooks and/or laboratory manuals determined to be the most useful and appropriate; select laboratory manuals and/or develop syllabi of laboratory exercises; place appropriate reference items on reserve in the library; prepare lesson plans to be used in a lecture and coordinate lectures with laboratory learning assignments; attend conferences to increase knowledge of subject matter and teaching methods and techniques; select locations for suitable microbiological investigation and instruction; coordinate with District Transportation Office and Business Office to arrange transportation and/or other amenities for off-campus field investigations; coordinate with contacts at visitation sites (research laboratories, hospitals, water treatment plants, etc.) to arrange clearances and details of field investigation activities; select and provide students with materials for use in field investigations; maintain living stock cultures of microorganisms used regularly in microbiology laboratory experiments and activities; prepare live cultures for use in specific laboratory protocols; recognize hazards associated with live bacterial and fungal microorganisms and practice aseptic techniques to prevent unnecessary exposure; coordinate with Instructional Assistant(s) to prepare solutions, reagents and media and to assist in maintenance of microbial specimens as needed (other than living-stock cultures, addressed above); prepare lists of laboratory materials needed and supply Instructional Assistant(s) with a materials listing and schedule of laboratory protocols; recognize responsibility to personally prepare reagents and media required on a last-minute basis; assemble laboratory materials, move equipment in and out of laboratories; determine whether laboratory equipment is functioning properly. **PERIPHERAL:** Review and evaluate new textbooks for content, readability, and cost effectiveness; read current literature (normally several sources- books, newspapers, periodicals, and other printed materials) to prepare lectures; review and select and/or prepare computer and audio-visual materials for classroom/laboratory use; prepare typewritten and/or graphic handouts and/or transparencies for classroom/laboratory use; coordinate with Instructional Assistant(s) to train and direct student help to assist in laboratory preparation and clean-up chores; experiment with changes in laboratory protocols and/or equipment which will improve instruction; familiarize self with operation of equipment currently available for use and which is appropriate for the subject area.

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**Lecture/Laboratory Presentation ESSENTIAL:** Introduce and present lecture/laboratory information and concepts in a clear and logical manner; use analogies and/or examples to convey important (microbiological concepts; provide instructional objectives to direct student learning; outline major points of information on board or overhead projector; enhance presentations with visual aids and/or demonstrations and/or examples, as available; demonstrate various scientific processes and proper use of pertinent equipment (for example: stain preparations, identify microorganisms with microscopes and/or other viewing equipment; carry out and explain recombinant DNA techniques, etc.); make modifications/substitutions to allow for completion of laboratory protocols and effective data collection; interpret and explain data collected and/or results of laboratory protocols; distribute handouts to clarify particularly difficult topics; answer student questions clearly and without ridicule, improper criticism or bias; encourage student participation and involvement in classroom discussions, providing equal opportunity for student participation; monitor student activity and take steps to prevent and/or control unacceptable behavior; design and develop new laboratory exercises to demonstrate major microbiological concepts; promote use of the scientific method in all laboratory protocols; help students to set up, operate, and troubleshoot laboratory equipment; practice correct handling of laboratory specimens and solutions to maintain safety and environmental hazard prevention and abatement controls, including "right-to-know" considerations; stay physically present in laboratory, to work with students; advise students of hazards associated with electrical equipment, live cultures, etc. **PERIPHERAL:** Clean up broken glassware in laboratory.

**Student Performance Evaluation ESSENTIAL:** Develop quizzes, tests, laboratory/classroom examinations and homework assignments which are understandable and which fairly evaluate student progress in acquiring knowledge of subject material; monitor student activity during examinations/quizzes and take steps to prevent and/or control unacceptable behavior, e.g., cheating; deal swiftly, rationally, and consistently with persons involved in cheating and/or other unacceptable behavior; read and evaluate student responses on examinations, quizzes and homework, marking and grading accordingly; assign, read and evaluate homework assignments/projects to promote learning; tabulate scores and assign official grades; advise students on academic matters regarding their performance; refer students to appropriate student services (for example, ESL, EOPS, etc.) **PERIPHERAL:** Input student scores into a computer (including word processing software), and make printouts of scoring data available to affected students.

**Shared Governance Activities -ESSENTIAL:** Attend and participate in weekly departmental staff meetings and periodic divisional and campus meetings and activities, including collaborative problem resolution (CPR) activities; respond in writing to requests for information (for example, employment process position questionnaires, unit planning guides, environmental impact reports, etc.); participate in articulation/curriculum development, investigation and costing of departmental equipment needs and selection of textbooks; represent department by serving on campus-wide committees. **PERIPHERAL:** Serve on employee selection committees, as requested; serve as a functional member of one or more committees and/or task forces; attend Board of Trustees and/or College Council Meetings, as necessary, and read shared governance body minutes, Board of Trustees reports, etc., to maintain knowledge of campus activities; read and respond to information polls distributed by the Faculty Senate and other shared governance bodies and those distributed in connection with peer and administrator performance reviews.

**Ancillary Student Services ESSENTIAL:** Hold regular office hours; provide advice to students regarding academic performance; provide students and peers with a positive role model in terms of character and citizenship; participate in graduation and outstanding student award ceremonies. **PERIPHERAL:** Provide students with letters of recommendation, as requested; hold review sessions of classroom/laboratory material, as necessary; advise and encourage students relative to Biology Department curriculum, particularly with regard to the field of microbiology; participate in campus museum program series and/or other activities, and provide student opportunities for participation in extracurricular field trips and/or club activities.

**MINIMUM QUALIFICATIONS****Degree/Experience:**

**ESSENTIAL:** Master's degree in any biological science **OR** Bachelor's degree in any biological science **AND** Master's degree in biochemistry, biophysics, marine science **OR** the equivalent.

**Knowledge of:**

**ESSENTIAL:** Microbiology and related fields, such as morphology, physiology and genetics; laboratory specimen preparation procedures, including staining procedures for preparation of slides for viewing under a microscope and recombinant DNA preparation and preservation techniques; operation of laboratory equipment utilized to record microbiological phenomena; computer operation, particularly word processing applications; scientific methodology; teaching practices, methods, and techniques; laboratory equipment calibration procedures; laboratory hazards and appropriate safety protocols, including "right-to-know" hazard communication requirements and equipment safety standards; aseptic techniques for proper handling of biohazardous organisms.

**Ability to:**

**ESSENTIAL:** Lecture in front of large groups of students; recognize variation in student backgrounds, abilities, and learning styles; be patient with students; maintain integrity, honesty, reliability, and cooperation; explain microbiological concepts and processes in a logical, sequential fashion; operate, troubleshoot, test, and calibrate laboratory equipment; prepare laboratory equipment, materials, and specimens; provide students with a "hands on" learning experience in a laboratory setting; correctly interpret microbiological data and draw accurate conclusions; form and maintain effective working relationships with peers, staff, and students; work independently to solve problems and/or participate in collaborative problem resolution activities. **PERIPHERAL:** Operate a computer (including word processing software).

**Physical Suitability Requirements:**

**ESSENTIAL:** Incumbent must be able to work indoors in work primarily of a sedentary to moderately active nature or outdoors to accomplish field investigations in work primarily of an active nature, and to perform the following, with or without reasonable accommodation: Almost constantly: Utilize vision (near) to read computer screens and printed materials, operate equipment and to observe microbiological phenomena through a microscope and/or other close-range viewing equipment; utilize hearing for ordinary conversation, telephone calls, and to respond to student questions in the classroom, laboratory and field environments. Frequently: Work in areas subject to exposure to pathogenic micro-organisms, chemicals, and flame and heat producing equipment such as Bunsen burners and autoclaves; utilize vision (far) to observe student performance, microbiological phenomena and equipment operation in laboratory and field environments; stand, sit, walk and turn to deliver lectures, other instruction, or instructional materials; reach overhead and low to operate equipment and prepare laboratory materials; utilize manual and finger dexterity to operate computers and other equipment and to prepare laboratory materials (including complex specimens); work in areas subject to exposure to risk of cuts and sticks from glassware and other sharps and risk of contact with bloodborne and/or other pathogens. Occasionally: Lift, push, pull, stoop, squat, bend and carry to move and operate equipment and prepare laboratory materials; wear protective equipment to protect face, eyes, arms, hands and fingers; work in areas subject to dust, mists, fumes, chemicals, caustics, and allergenic plants/materials.

**Faculty salary schedule, subject to placement at date of hire.**

**FLSA exempt.**

**SCFA bargaining unit member status.**

**Classification I, Bloodborne Pathogens Exposure Control Program.**