

Course Outcomes Guide (COG)

Course Title: BIO205/Microbiology

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Expected Learning Outcomes

1. Recognize and explain the significant role that microbes play in the world around us
2. Appreciate the similarities and differences of microbes as compared to higher forms of life.
3. Identify microbes and explain methods of growth and cultivation as well as structural and biochemical differences.
4. Demonstrate an understanding of microbial structure, function, metabolism, growth, genetics, and control, including antibiotic usage.
5. Demonstrate the basic principles of immunology relating to host resistance, antigen-antibody reactions, vaccination, organism virulence, and their ability to cause disease.
6. Demonstrate an understanding of the principles involved in epidemiology, infectious disease, and a basic appreciation for how microbes cause disease, which diseases they cause, and characteristics that determine the course of infection. Diseases and their etiologic agent will be noted and discussed by the student.
7. Evaluate the physical and chemical methods of microbial control.
8. Recognize microbial diseases and their control.
9. Be able to explain various methods for controlling microbial growth both in the environment and in the human body through the use of antibiotics, phage therapy, and other alternative methods.

Assessment

The assessment is a cumulative final exam given to all sections of BIO205. Currently this assessment is being evaluated and will be modified to better reflect and gauge student learning outcomes.

Validation

The exam will be validated by comparing assessment grades between instructors. The exam currently utilized for assessment is undergoing review to determine the best methodology, validation methods, and material for inclusion for future student learning outcomes assessment.

Results

	Spring 2015					
# Active students	49					
% Withdrawal	4.5%					
% walk-away F's	2.3%					
% Success (A,B,C)	93.2%					
Mean Gen Ed Score, N=	73.5%, N=49					
Common comprehensive	61.3%, N=48					

final exam score, N=						
Mean course grade in %	80.1%					
Item analysis Weakest Content Areas	Growth/metabolism, etiology/epidemiology, immunology					

Primary areas of weakness based upon the common assessment, are growth requirements/metabolism of microorganisms, etiology/epidemiology, and basic immunology.

Follow-up

Currently, up to two lectures are given for growth requirements and metabolic processes of microorganisms, two lectures for epidemiology, and one and a half lectures on basic immunology. In order to strengthen student's comprehension in these areas, more time both in and out of class will be used to reinforce these concepts. In addition, worksheets will be made available and students will be quizzed on the material.

Budget Justification

None.