

Bergen Community College
Assessment Report for 2008-2010

Department/Program: Biology

Department Leader: Prof. Robert Highley

Liaison: Prof. Joshua Guttman

Assessment Project Coordinator (if not the Department Leader): Prof. Marty Lowe

Date Submitted: 4/1/09

Program(s), if applicable (AAS, Interdepartmental, etc.):

AS.NS.BIO

Mission/Goal statement of the department or program:

To acquire an understanding of the general principles of microbiology and the role of microbes in our universe and to become proficient in the techniques for observing, cultivating, enumerating, isolating, and identifying these organisms.

SEMESTER 1: Create the Assessment Plan

Goal or learning objective being assessed:

Students will learn the major principles of microbiology and the relationship of microbes to other living organisms. Assessment will be based upon performance on exam questions. Assessment can also be based on case studies, research papers and projects.

Relevant Core Competencies: (check as many as apply)

- | | | |
|---|--|---|
| <input type="checkbox"/> Communication | <input type="checkbox"/> Quantitative Reasoning | <input type="checkbox"/> Critical Thinking |
| <input type="checkbox"/> Civic Responsibility | <input type="checkbox"/> Technological and Information Fluency | <input type="checkbox"/> Personal Skills |
| <input type="checkbox"/> Interpersonal Skills | <input type="checkbox"/> Creativity and Aesthetic Appreciation | <input checked="" type="checkbox"/> Applied Knowledge |

Means of Assessment:

Test questions from Microbiology and Anatomy and Physiology faculty as well as a case study on the topic of immunology will be given to students in all sections of microbiology. The Professors can use the questions as a part of their grade or the test questions and case study can simply be sent to the committee for assessment.

SEMESTER 2: Develop an Assessment Strategy

Criterion for success:

The expected overall average for this quiz should be 80%.

Dean's Comments:

VP's Comments:

SEMESTER 3: Implement Assessment Plan & Strategy

Summary and analysis of data collected:

Twenty questions were given to students in selected sections. The students answered the questions and all were given to Marty Lowe. The questions were graded and the averages were compiled. The full time faculty and one adjunct gave the assessment questions for a total of 7 sections assessed. The averages were 81.25, 82, 90, 84, 80.1, 81 and 77. The average for all 7 sections was 82.05.

(The Summary should appear here. Use attachments only to provide information to support the summary.)

SEMESTER 4: Reporting and Revising

Use of results:

The results will be discussed during the next Biology faculty meeting. It might be suggested that we work more closely with the Anatomy and Physiology faculty to be sure that we are all stressing the importance of the immune system.

FOLLOW UP:

Professor Mary Flannery, Dr. Barbara Davis and Dr. Jeanie Payne have developed a research project consisting of an interdisciplinary program between Anatomy & Physiology and Microbiology. Using case studies, the goal was to engage students in topics that overlap both disciplines.

With the help of Dr. Davis' colleague, Dr. Yvonne Lue, a clinical microbiologist from Accurate Diagnostic Labs in South Plainfield NJ, the members of the Biology faculty introduced their students to Clinical Case Studies as a method to further their knowledge of disease processes and the reaction of the Human Body to disease. Professor Flannery lectured on the anatomy and physiology of the organ system in question since some microbiology students may not have had Anatomy & Physiology while Dr. Davis lectured on the microbiological implications for the case study so that A&P students would not be at a loss. Dr. Payne coordinated the information and lectures with the different sets of classes and students.

Using Webinar technique the students heard Dr. Lue discuss the clinical implications of the disease topic and then were able to ask Dr. Lue questions about the case study.

The success of this interdisciplinary approach was the acceptance of the write up as a poster for the 2011 American Society of Microbiology (ASM) General Meeting. A paper on the this topic will be published in the Journal of Microbiology and Biology Education in June 2012.

During the fall of 2011 Dr. Davis, Dr. Payne and Prof. Flannery took it a step further. They invited Professor Marty Lowe to join the group and picked a current emerging disease, Escherichia coli O104:H4 as the topic. Dr. Davis and Professor Lowe lectured on the microbial physiology of E. coli, E. coli O157:H7 and the emerging E. coli O104:H4. Professor Flannery lectured on the Anatomy and Physiology of the GI tract and the effect of bacterial toxins on the cardiovascular and urinary system. Dr. Payne coordinated the group effort with Professor Tammy Atchison of Pitt Community College and Dr. Yvonne Lue, who explained different clinical tests that microbiologists use to determine the cause of a disease. Professor Lowe was responsible for capturing the lectures both at the college and remotely using the Echo Capture equipment and loading it up into the WebCT learning platform for all students to review after the lectures had been given.

Dr. Davis contacted Dr. Christina Frank from the Robert Koch Institute in Germany, the lead author of the paper characterizing the outbreak of E.coli O104:H4 in Germany during the spring/summer of 2011 to be our guest via Skype. The students were able to speak with and ask Dr. Frank questions about the outbreak and her detective work during the spring and summer of 2011. Echo capture was used again so that all students would be able to follow along with the question and answer even if they had another class to attend.

This information has also been submitted to the ASM for a poster presentation at the general meeting in June 2012.

Dean's Comments:

VP's Comments: