Crafton Hills College - Outcomes Assessment Report

Course: MICRO150 -- Introductory Microbiology **Term:** 2009 Spring

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1. Learning Outcomes Statement

1. Students will learn to retrieve, evaluate and use contemporary microbiologic information.
2. Students will learn to collect information, create a flow chart and to successfully navigate through that flow chart.

2. Means of Assessment (Measurement Method)

RESEARCH PAPER:

(SE) Term paper meets all assigned requirements (e.g. 8 Pages min, typed, double-spaced, appropriate 12-pt. font)

Rubric: MicroBiology Achievement

(SE) Term paper references appropriate sources, such as scientific journals no more than 2 years old.

Rubric: MicroBiology Achievement

(SE) The paper presents an accurate, comprehensive, and critical treatment of the selected topic. The student demonstrates an understanding of the major issues, and conclusions presented are appropriate and relevent to contemporary microbiology.

Rubric: MicroBiology Achievement

MICROBIOLOGY FLOW CHART:

(SE) Students will collect information and create a flow chart.

Rubric: MicroBiology Achievement

(SE) Students will successfully navigate through the flow chart.

Rubric: MicroBiology Achievement

3. Criteria for Success (Benchmark)

Rubric: MicroBiology Achievement

Description: Rubric for Microbiology.

Owner: Course Level - Microbiology-REORG 711

Rubric Levels

0. No demonstrated achievement
1. Minimal evidence of achievement - below expectations
2. Adequate evidence of achievement - met stated outcome or expectations
3. Significant evidence of achievement - surpassed stated outcome, mastery or near mastery of learning expectations.

4. Summary of Evidence

MICRO150 Medical Microbiology Spring 2010 Sec 01 (Actuals) — Show Percentages | Display as PDF	Assessment Results By Level					
Assessment: Micro 150 Paper	**NS**	**0**	**1**	**2**	**3**	**Total**
Degree Program: Biology - Assessed Effort 6. Students will learn to retrieve, evaluate and use contemporary microbiologic information.						
Term paper meets all assigned requirements (e.g. 8 Pages min, typed, double-spaced, appropriate 12-pt. font) Rubric	4	2	0	5	14	**21**
Term paper references appropriate sources, such as scientific journals no more than 2 years old. Rubric	4	2	1	2	16	**21**
The paper presents an accurate, comprehensive, and critical treatment of the selected topic. The student demonstrates an understanding of the major issues, and conclusions presented are appropriate and relevent to contemporary microbiology. Rubric	5	2	0	2	16	**20**
Assessment: Microbiology Flow Chart	**NS**	**0**	**1**	**2**	**3**	**Total**
Degree Program: Biology - Assessed Effort 8. Students will learn to collect information, create a flow chart and to successfully navigate through that flow chart.						
Students will collect information and create a flow chart. Rubric	6	1	2	1	15	**19**
Students will successfully navigate through the flow chart. Rubric	6	2	0	3	14	**19**

1. Briefly summarize the Student Learning Outcome assessed, and the method used to assess it.

Information for two SLOs was collected and analyzed for Microbiology 150 during the Spring 2009 semester. those SLOs include: Collection of information and creation of a flow chart to determine the identity of an unknown bacterium for the project entitlted "Second Unknown." Successful navigation through the flowchart to correctly identify the unknown bacterium.

2. Describe the kind of evidence that you collected to evaluate student learning as stated by the outcome. Is the data adequate for making observations and/or conclusions? Data collected included:

The flowchart itself and supporting documentation (a grid chart of information collected from Bergey's Manual of Determinative Bacteriology) and for the second SLO (successfully navigating through the flowchart) the final project report.

3. Has all evidence been collected and documented? Are there any data missing or incomplete?Yes, all of the evidence has been collected

4. Looking at the results, how many students met or exceeded the stated outcome? What observations or explanations can you attribute this result to?

86.5% of the Microbiology 150 students who participated in the project met or exceeded the expectations for collecting information and creating a flowchart.

83.5% of the students participating in the project met or exceeded expectations for the second SLO which is to successfully navigate through the flowchart and correctly determine the identity of the unknown bacterium.

I attribute this high level of success for both SLOs to several factors. This project is the cullimination of an entire semester of preparation including:

A "mini" unknown project referred to as the 1st Unknown

Extensive time spent in both lab and lecture discussing and practicing how to collect data and logically and critically solve problems

Dedicated class sessions showing students how to (specifically) collect data from Bergey's manual and how to intrepret that data. Homework assignment in which the students collect data and write a "mini" flowchart

5. How many students performed below the stated outcome, based on the evidence present? What observations or explanations can you attribute this result to?

13.5% of the students who participated in the second known did not meet the expectations for collecting data and creating a workable flowchart. 16.1% did not meet the expectation for successful navigation through the flowchart to determine the identity of the unknown bacterium.

5. Use of Results (Implications for Program Improvement & Planning)

8. Based on your findings, what worked well in your course or program?

The vast majoriuty of Microbiology 150 students met or exceeded expectations for both of the SLOs that were evaluated so apparently the time spent in preparation and the "practice" exercises are effective in preparing them to succeed in this project.

9. What changes do you believe are necessary to improve student learning? Specifically, what changes do you suggest in the following:

a. Instructional approach

b. Course content, texts and other learning resources (including equipment, technology)

c. Structure of the course or program? Curricular as well as co-curricular elements?

The current approach is effective in preparing the students to formulate a logical means to determine the identity of the unknown bacterium. The final step in the preparation process is a homework assignment in which the students write a "mini" flow chart to access whether or not they understand the process. This allows the instructor to identify students who do not grasp the concept and offer them additional instruction so that they may succeed in the larger project.

10. What kinds of learning evidence would help you make better, more precise observations? What would you change or modify in your assessment approach?

I am satisfied that the current assessment of this SLO.

a. Learning Outcomes (modify existing ones, add new ones)

b. Assessment approach

c. Rubrics

These two SLO do not require modification of the assessment approach or rubrics at this time.