

# Course Assessment– Part B: Your Results & Analysis

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Your Email \*

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## Part B: Your Results

### Directions

1. Report the outcome achievement data gathered via the assignments, tests, etc. you identified for each outcome (question 3) of your Part A. \*

For Outcome #1, my first assessment method was “1) ...watching videos on the topics of ‘the role of microbes in the human body– both good and bad’, ‘how building design affects microbial communities’, ‘problems with antibiotic resistant bacteria’, and ‘STDs’ and having interactive online discussion forums with both targeted and open-ended questions related to these topics.” Students did have engaging online discourse with original posts and responses related to these videos. The average score on these posts was a 93%. My second assessment method for Outcome#1 was “2) completing case-study type homework assignments that apply the basic principles of microbiology to human health including a case study on ‘antimicrobial resistance and susceptibility’, the ‘bacterial theory of ulcers’, ‘asthma and bacterial pneumonia’, and ‘the resurgence of pertussis’.”. Students received an average score of 79% across these assignments. My third assessment method for Outcome #1 was “reading from online sources on the topics of antibiotic resistance, antimicrobial control, disease and specific pathogens; and then taking online quizzes related to these reading topics.” The average student score across these quizzes was 93% My fourth assessment method for Outcome #1 was “emphasizing aseptic techniques in the laboratory including hand washing, careful manipulation of microbial media with correct technique and disposal, and proper clean-up.” I do not have a specific quantitative method for assessing this, however I observed students going above and beyond expectations in following these aseptic techniques in the laboratory. We frequently discussed topics and methods surrounding aseptic technique.

For Outcome #2, my first assessment method was “watching videos on the topics of ‘Viruses–Malaria and Zika’, ‘Tracking Ancient Diseases Using Plaque’, and ‘Cholera’ and having interactive online discussion forums with both targeted and open-ended questions related to these topics”. Students had engaging online discussions surrounding these videos. Overall, students received an average score of 90% on these discussion forums. My second assessment method for Outcome #2 was “a case-study style homework assignment on ‘African Illness: a Case of Parasites?’”. Students received an average of 77% on this assignment.

For Outcome #3, my assessment method was “a variety of labs including labs on colonial and cellular morphology, gram-testing, microbial metabolism, and the study of microbial fungi and bacteriophages. Student assessment is performed through weekly lab write-ups as well as weekly lab quizzes.” Overall, students received an average score of 97% for lab participation and write-ups, and an average score of 88% for lab quizzes.

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### Outcome #1

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Relate an understanding of the basic principles of microbiology to personal health and use this understanding to make informed personal and professional decisions.

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% of students who successfully achieved the outcome (C or above) \*

89

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### Outcome #2 \*

Use an understanding of the impact of microbes on human cultures around the world both historically and in the present day to evaluate current health issues.

% of students who successfully achieved the outcome (C or above) \* 78

Outcome #3 *	Use scientific methods to qualitatively and quantitatively describe microbial characteristics and processes and understand their relationship to the identification of microbial species.
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% of students who successfully achieved the outcome (C or above) \* 100

## ANALYSIS

### 3. What contributed to student success and/or lack of success? \*

A few of the graded items in the course were based more on participation and completion, and I believe this helped with student success because students were able to discuss, debate, and explore different ideas without worrying about being 'wrong', such as with the online discussion forums. I would definitely include similar open-ended video discussion forums in this course (if taught online) again.

I do not believe the on-line reading sources– especially Boundless– contributed to success. With online reading sources, students are disrupted occasionally by ads and page links. They cannot highlight the text, or bring the reading material with them just anywhere. I also do not think the online text was written nearly as well as print microbiology texts I have seen. I believe the choice of main reading sources as open online sources contributed to confusion and less learning, and would suggest using a published, printed text in the future.

4. Helping students to realistically self-assess and reflect on their understanding and progress encourages students to take responsibility for their own learning. Consider comparing your students' perception of their end-of-term understanding/mastery of the three outcomes (found in student evaluations) to your assessment (above) of student achievement of the three outcomes. *	It is difficult for me to draw many conclusions from this assessment, because only 3 students (out of 18) chose to complete it. Of the 3 students that completed the assessment, they generally reported improvement up 'one level' from their understanding of the objectives previously to taking the course. For example, if they said their understanding was "good" before the course they said it was "very good" after, or if it was "fair" before the course that it was "good" after. This was true for all objectives.
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5. Did student achievement of outcomes meet your expectations for successfully teaching to each outcome (question 4 from Part A) *	Based on the assessments I put in place, student achievement of outcomes did meet my expectations.
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### 6. Based on your analysis in the questions above, what course adjustments are warranted (curricular, pedagogical, student instruction, etc.)? \*

I would definitely suggest using a published, printed text as opposed to an open online source.

In the future, I would also reduce the number of assignments if taught as an online course. I utilized case-study homeworks, hoping that these would be engaging and interesting to students, but I think that I used too many and they became frustrating to the students. I would probably still use a couple of case-studies in an on-line course, but not as many, and would provide introductory lecture videos to go along with them.

If taught as online again, I would also want to provide short, online video-taped lectures or interactive powerpoint modules to go along with the reading material, as opposed to PDF review sheets I created.

I also felt inhibited by the lab budget; supplies needed to properly teach some of the microbiology techniques in the lab are out of the budget.

7. What resources would be required to implement your recommended course adjustments (materials, training, equipment, etc.)? What Budget implications result? *	Some paid time for faculty to create online lecture videos for courses could definitely be useful. Paid training time and software for Prezi (or a similar program) could also be useful for faculty. This course might also need an increase in the lab fee, in order for instructors to be able to choose from different experiments in the lab manual.
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8. Were your assessment methods accurate indicators of student learning? Why or why not? Any additional comments? \*

I do think my assessment methods were accurate indicator of student learning. Students who performed well on these assessment methods also performed well on exams. In the future, I would provide an incentive for students to complete the course survey because very little data were available.

(OPTIONAL) Reflect on any adjustments you made from the last assessment of this course and their effectiveness in student achievement of outcomes?

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