All Fields

AS Bioman Prod PLO Aggregates F21

Main

Program Aggregate of PLOs

Assessment Information
Assessment Report Title AS Bioman Prod PLO Aggregates F21
Originator Blackie, Leslie
Semester Assessed Fall 2021
Select Program Biomanufacturing Production (Active)

Contributor

Bruce, Doug

Program Assessments

Section Aggregrate Included in this Assessment

AS Bioman Prod PLO 3 Rel Everyday SU 21
AS Bioman Prod PLO 1 Equipment SU 21

Participation

Participation Aggregate (Read only)
How many sections were offered: 0
How many sections participated in the assessment: 0

Summarize faculty participation in collecting data and discussing results. If more meaningful participation is necessary, discuss how you will increase this for next time.

- Students will be able to demonstrate proper gowning, use of equipment and follow procedures important in the clean room in twice weekly labs. Assessment will be analysis of skill demonstration.
- Pipetting accuracy is essential for proper PCR technique. Students are asessed on their pipetting accuracy using a gravimetric method.
- Analysis of skill demonstrations. Bacteria, yeast and insect cells are cultured at different times throughout the semester, and analyses done in several experiments on the sterility of the cultures as well as the health of the cells.
- Analysis of GMP/GLP case study writing assignment.
- Students are observed while performing/demonstrating a skill with equipment in lab.
- One faculty member taught 4 sections (MW afternoon/evening) and TTH (morning/afternoon) sections. As microbiology program expands additional sections will be taught by other professors and the SLO assessment coordinated
- one section a year is taught
- One section of the course taught each year.
- We assessed only 2 sections (out of the 3 sections that were offered). Going forward the 3rd section conducted by a different instructor data would be collected and incorporated.

Summarize faculty participation in collecting data and discussing results. If more meaningful participation is necessary, discuss how you will increase this for next time.

All members of the Biomanufacturing Faculty participated in collecting SLO data in the sections of the classes they taught. All of the Biomanufacturing classes are assessed and those assessments contribute to the Program Level Outcomes for the Associates of Science in Biomanufacturing Production . Faculty teaching different sections of the same class discuss their SLOs. Faculty teaching different classes that contribute to a given PLO also have discussions on whether students are meeting criteria and in what ways better support can be developed to assist students in meeting their educational objectives.

Assessment Methods / Tools

Please note this area is read only.

Assessment Results

- AS Bioman Prod PLO 3 Rel Everyday SU 21
    - Students met criteria to connect scientific concepts in several classes to their relevance in everyday life. Assessment results indicate that students need more support in the details of appropriate citations in their writing, and support in learning how to navigate online discussions and group work to support other students in the group as well as just completing the individual assignments.

- AS Bioman Prod PLO 1 Equipment SU 21
    - Comparing results from previous semester, performance on these SLO's was comparable. In one case (Bio 79), the assessment itself was changed due to challenges presented by our outdated facilities, leading to the assessment taking extremely long. The new assessment showed comparable performance to the old assessment method and did not take up too much class time. Although students overall did well on this skill demonstration in Biol 75, the most common error was having some of the dye leak out of the agarose gel well. To avoid this, students must be very careful to not insert the tip too deep and press the plunger on the pipet too quickly. Also, they need to avoid creating a bubble at the end when they are getting the last bit of dye out. Practice and repetition are the best way to help students learn this hands-on skill.

Additional Comments

PLO 1 assesses laboratory equipment use, PLO 2 communication and PLO 3 Science concepts as they relate to every day situations. Overall students met the criteria for all of the SLOs and the PLOs. The individual classes all contribute to the overall goals and training of the Biomanufacturing program. The assessment results are found in both eth PLO 1 and PLO 3 for the AS in Biomanufacturing (Active) and PLO 2 in Biomanufacturing (historical) in meta.

Reflection

Review previous action plan below, along with previous and current assessment results.

AS Bioman Prod PLO 3 Rel Everyday SU 21

The action plans of introducing support use of technology with google docs and forms of communication through the learning management system of Canvas will be implemented as faculty continue to revise and

improve their courses. The emphasis on the details of the culture of writing (appropriate citations) and ownership of the importance of everyone's presence in group work (either online discussions or in person) will continue to be emphasized. Students may need support in access to the technology through acquiring Chromebooks/laptops or access to computer labs, but these loaner/support programs should be college based and not dependent on the departmental budget. In addition, continued coordination of instruction and discussion with the faculty of all the courses contributing to the SLOs that map to the specific PLO of scientific relevance to everyday life may result in additional assignments to improve the student educational experience.

AS Bioman Prod PLO 1 Equipment SU 21

This fall 2021 the same exam demonstration question will be used. Then there will be comparison data with the 2019 data. I will meet with the lab instructor to discuss outcomes and what the next steps will be as we address the issues of skills not learned during the pandemic. I believe this PLO should be assessed at the end of the next assessment cycle. In my case, that would be Fall 2024.
Discuss the efficacy of planned actions from past assessments of the same SLO. Did your previous action plan result in better student learning? What worked, what didn't work, etc.? If you have never assessed this SLO before, please put N/A.

- AS Bioman Prod PLO 3 Rel Everyday SU 21
    - The importance of emphasizing the relevance of the concepts of science to the everyday lives of the students is reflected in the success of this outcome as students meet the criteria in multiple classes on exams and in essays/written reports. Students are more successful when they can relate the concepts they are learning in the classroom to their everyday lives. The ability to explain the scientific concepts and the ability to then make informed decisions about scientific issues is an important aspect of educating a scientifically literate society. Further emphasis that communication skills of explaining scientific concepts (written, navigating group work and verbally explaining results) are also important in the workplace will increase the relevance of this Program Level Outcome to the students.

- AS Bioman Prod PLO 1 Equipment SU 21
    - Challenges presented by remote learning during a pandemic need to be addressed. The assessment needs to be adapted When lab equipment is not available or is available in a take home kit. This fall (2021) I will discuss with the Bio 75 instructor how to provide students more time prior to the exam to practice their pipetting technique.

Additional Comments
Overall students are meeting the criteria for success in the program level outcomes. For PLO # 1 working with laboratory equipment, the many hours spent in the labs conducting hands on experiments in many of the courses for the program result in confidence that students are being trained both in working with equipment and will understand how to approach learning new equipment uses in the workplace. For PLO 2 communication the students were able to understand the importance of appropriate documentation

throughout the biomanufacturing program and connect it to required documentation in the workplace for the communication goals. The importance of emphasizing the relevance of the concepts of science to the everyday lives of the students is reflected in the success of PLO #3 outcome as students meet the criteria in multiple classes on exams and in essays/written reports. Students are more successful when they can relate the concepts they are learning in the classroom to their everyday lives. The ability to explain the scientific concepts and the ability to then make informed decisions about scientific issues is an important aspect of educating a scientifically literate society. Further emphasis that communication skills of explaining scientific concepts (written, navigating group work and verbally explaining results) are also important in the workplace will increase the relevance of this Program Level Outcome to the students. .

Action Plan

Timeline for Implementation Aggregate (Read Only)

BIOL 3 Sec Agg SLO 2 microbeseveryday Su21

- Timeline for Implementation: List the steps you will take to implement the Action Plan listed above with a timeline:

  immediately

BIOL 77 Sec Agg SLO 2GMP Su 21

- Timeline for Implementation: List the steps you will take to implement the Action Plan listed above with a timeline:

  next time course is taught

Biol 74 Sec Agg SLO 1 sci lit Su 21

- Timeline for Implementation: List the steps you will take to implement the Action Plan listed above with a timeline:

  immediately

Biol 003 SLO 2 section aggregate

- Timeline for Implementation: List the steps you will take to implement the Action Plan listed above with a timeline:

  I will try to implement some, like short quizzes after lecture this semester (FALL 2021) but a more detailed plan with videos etc would most likely be implemented in Spring 2022.

BIOL 72B Sec Agg SLO 2 F17

- Timeline for Implementation: List the steps you will take to implement the Action Plan listed above with a timeline:

  Fall 2021 and Fall 2022 I will implement the steps above into course curriculum and keep assessing using the same metrics.

BIOL 72C Sec Agg SLO 1 F16

- Timeline for Implementation: List the steps you will take to implement the Action Plan listed above with a timeline:

  Each fall semester I will start the semester by introducing the micropipetting accuracy challenge. The next three fall semesters (2021, 2022, and 2023) will provide time to make minor adjustments before the next assessment.

BIOL 79 Sec Agg SLO 1 SP18

- Timeline for Implementation: List the steps you will take to implement the Action Plan listed above with a timeline:

  Spring 2021 and 2022 is when I will make refinements to the assessment.

BIOL 72A Sec Agg SLO 1 F16

- Timeline for Implementation: List the steps you will take to implement the Action Plan listed above with a timeline:

  This fall I will informally assess the case study assignment and look for differences between the regular section and the dual enrollment section. Then, I will make any adjustments needed for the following fall when the SLO is officially assessed again.

BIOL 75 Sec Agg SLO 1 F19

- Timeline for Implementation: List the steps you will take to implement the Action Plan listed above with a timeline:

  This fall 2021 the same exam demonstration question will be used. Then there will be comparison data with the 2019 data. I will meet with the lab instructor to discuss outcomes and what the next steps will be.

Budget Request / Resource Aggregate (Read Only)

BIOL 3 Sec Agg SLO 2 microbeseveryday Su21

- **How do you believe this will impact departmental budget requests and other types of resources?**

  no

BIOL 77 Sec Agg SLO 2GMP Su 21

- **How do you believe this will impact departmental budget requests and other types of resources?**

  no impact

Biol 74 Sec Agg SLO 1 sci lit Su 21

- **How do you believe this will impact departmental budget requests and other types of resources?**

  none

Biol 003 SLO 2 section aggregate

- **How do you believe this will impact departmental budget requests and other types of resources?**

  NA

BIOL 72B Sec Agg SLO 2 F17

- **How do you believe this will impact departmental budget requests and other types of resources?**

  N/A

BIOL 72C Sec Agg SLO 1 F16

- **How do you believe this will impact departmental budget requests and other types of resources?**

  N/A

BIOL 79 Sec Agg SLO 1 SP18

- **How do you believe this will impact departmental budget requests and other types of resources?**

  N/A

BIOL 72A Sec Agg SLO 1 F16

- **How do you believe this will impact departmental budget requests and other types of resources?**

  N/A.

BIOL 75 Sec Agg SLO 1 F19

- **How do you believe this will impact departmental budget requests and other types of resources?**

  No.

Additional Comments (Make any additional comments, focusing on top priorities)
The biomanufacturing program faculty will continue to assess SLOs in the courses and report those assessments that contribute to the PLOs for the program. We have found that using the student learning outcomes from a variety of courses allows us to gain an overview of the effectiveness of the program. Discussions by the faculty of the areas of strengths of the students as well as areas that need more development have led to development of new curriculum (combining smaller classes into one large unit class) to facilitate students' moving through the program and into the workplace , or transferring to a four year college having earned an Associates of Science degree.
Next PLO Assessment 2023 Fall
You should plan to assess program within a 3-year cycle, but you may want to assess more often if you feel it is critical to implement your action plan and assess the same program again.

Attach Files
Attached File
Codes/Dates
Originator Blackie, Leslie
Approval Date