

College	Science
Department	Statistics and Biostatistics
Program	MS Biostatistics
Reporting for Academic Year	2022-2023
Last 5-Year Review	2018-2019
Next 5-Year Review	2023-2024
Department Chair	Ayona Chatterjee
Author of Review	
Date Submitted	15 September 2023

I. SUMMARY OF ASSESSMENT

A. Program Learning Outcomes (PLO)

PROGRAM LEARNING OUTCOMES (PLOs)	
Students graduating with a <degree program> will be able to:	
PLO 1	Apply biostatistical methodology to data to (a) produce descriptive statistics, probability models, and visual displays (b) select probability distributions to implement statistical inference (estimation and hypothesis testing), and (c) critique biostatistical models for uncertainty, likelihood, modeling and error analysis at the Master's level.
PLO 2	Evaluate practical problems arising in biostatistics to select and formulate models for solutions using these methodologies.
PLO 3	Select and generate biostatistical software output and evaluate the results appropriately.
PLO 4	Derive basic theory, explain biostatistical concepts, and clearly communicate analytical results to others.

Program Learning Outcome(S) Assessed

For MS in Biostatistics

Year 5: 2022-2023	
1. Which PLO(s) to assess	PLO 1
2. Is it aligned to an ILO?	No
3. If yes, list ILO.	
4. Course name and number	<u>BSTA 663 - Clinical Trials in the Pharmaceutical and Biomedical Industries</u>

5.	<i>SLO from course</i>	Apply biostatistical methods to data, including (a) descriptive statistics, probability and graphical displays, (b) distributions, hypothesis testing and confidence intervals, and (c) uncertainty, likelihood, modeling and error analysis;
6.	<i>Assessment activity</i>	Short projects including a written report
7.	<i>Assessment Instrument</i>	Rubric developed by the instructor
8.	<i>How data will be reported</i>	Quantitatively, proportions of students in each category from 1-5 (5 mastered)
9.	<i>Responsible person(s)</i>	BSTA 663 Instructor, Assessment Rep
10.	<i>Time (which semester(s))</i>	Fall 2022
11.	<i>Ways of closing the loop</i>	Included in end-of year report and internal assessment

B. Summary of Assessment Process

Instrument(s):

We use specific assignments in the BSTA 663 – Clinical Trials in the Pharmaceutical and Biomedical Industries to assess the Program Learning outcome.

Sampling Procedure: We sample by gathering data from all students who are enrolled in BSTA 663.

Sample Characteristics: Since BSTA 663 is a required course for the MS Biostatistics program, all students in their second semester take the course.

Data Collection: We use a project developed in BSTA 663 to assess PLO1.

Data Analysis: We currently utilize scores from the project to assess the PLO and then the number of students who achieved the score. The results are presented in the table below.

Summary of Assessment Results

Main Findings: **Main Findings:**

Frequencies of Rubric Score for Biostatistics MS 2022-2023. We only had 5 students take BSTA 663 and the results are below.

Score (max 100)	PLO 1
90 - 100	0
80-89	5
70-79	0
60-69	1
Less than 60	0
Total	5

Recommendations for Program Improvement:

We are looking to increase enrollment in this program and the department is currently

working on curriculum changes for the MS in Biostatistics.

Next Step(s) for Closing the Loop:

We will continue to monitor the evaluation of our PLO's to determine if additional advising or curriculum changes need to be addressed.

Other Reflections: We have no additional reflections on assessment currently.

C. Assessment Plans for Next Year

Most PLOs are the same and assessment will be for comparable courses.

Year 1: 2023-2024	
1. Which PLO(s) to assess	PLO 2 & 3
2. Is it aligned to an ILO?	Yes
3. If yes, list ILO.	Thinking and Reasoning
4. Course name and number	STAT 692 – Comprehensive Exam
5. SLO from course	Upon successful completion of this course, students in the M.S. Biostatistics program will have mastered the ability to: Apply biostatistical methods to data, including a) descriptive statistics, probability and graphical displays, b) distributions, hypothesis testing and confidence intervals, and c) uncertainty, likelihood, modeling and error analysis. Derive basic theory and communicate to others results involving biostatistical data analysis. Formulate problem solutions, produce appropriate computer code to interpret results.
6. Assessment activity	Written Comprehensive Exam
7. Assessment Instrument	Grades from exam
8. How data will be reported	Quantitative, proportions of students in each category from 1-5 (5 mastered)
9. Responsible person(s)	STAT 692 instructor, Assessment Rep
10. Time (which semester(s))	Fall and Spring
11. Ways of closing the loop	Included in end-of year report and internal assessment of PLOs.