College	Science
Department	**Statistics and Biostatistics**
Program	**MS Biostatistics**
Reporting for Academic Year	2021-2022
Last 5-Year Review	2018-2019
Next 5-Year Review	2023-2024
Department Chair	Ayona Chatterjee
Author of Review	Lee Adams
Date Submitted	01 October 2022

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 : 2021-2022	
Which PLO(s) to assess	PLO 4
Is it aligned to an ILO?	Yes
If yes, list ILO.	Communication

B. Summary of Assessment Process

. **Instrument(s):**
We use specific assignments in the STAT 632 course, Linear and Logistic Regression to assess the Program Learning outcome.

Sampling Procedure: We sample by gathering data from all students who are enrolled in STAT 632.

Sample Characteristics: Since STAT 632 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 STAT 632 – Linear and Logistic Regression and all students in the class are assessed for the Communication PLO.

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 2021-2022. Since all MS students both Statistics and Biostatistics complete the project, data for all students are presented below.

Score (max 100)	PLO 4
90 - 100	45 (85%)
80-89	7 (13%)
70-79	0
60-69	0
Less than 60	1 (2%)
Total	53

Recommendations for Program Improvement:
Since semester conversion, much of the course content and course sequences have been altered. This has resulted in an increase of student advising.

Next Step(s) for Closing the Loop:
We will continue to monitor the evaluation of our PLO's to determine if additional advising or curricular 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 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*	BSTA 663 - Clinical Trials in the Pharmaceutical and Biomedical Industries
5.	*SLO from course*	Derive basic theory and communicate to others results involving biostatistical data analysis;
6.	*Assessment activity*	Short projects including a written report
7.	*Assessment Instrument*	Rubric developed by the instructor
8.	*How data will be reported*	Quantitatively, proportions of students in each category from 1-5 (5 mastered)
9.	*Responsible person(s)*	BSTA 663 Instructor, Assessment Rep
10.	*Time (which semester(s))*	Spring 2023
11.	*Ways of closing the loop*	Included in end-of year report and internal assessment