College	Science
Department	**Statistics and Biostatistics**
Program	**MS Statistics**
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	15th September 2023

I. SUMMARY OF ASSESSMENT

A. Program Learning Outcomes (PLO)

PROGRAM LEARNING OUTCOMES (PLOs)	
Students graduating with a MS in Statistics will be able to:	
PLO 1	Apply statistical methodologies, including a) descriptive statistics and graphical displays, b) probability models for uncertainty, stochastic processes, and distribution theory, c) hypothesis testing and confidence intervals, d) ANOVA and regression models (including linear, and multiple linear) and analysis of residuals from models and trends at the Master's level.
PLO 2	Derive basic theory underlying these methodologies.
PLO 3	Model practical problems for solutions using these methodologies.
PLO 4	Produce relevant computer output using standard statistical software and interpret the results appropriately.
PLO 5	Communicate statistical concepts and analytical results clearly and appropriately to others; and,
PLO 6	Employ theory, concepts, and terminology at a level that supports lifelong learning of related methodologies.

Program Learning Outcome(S) Assessed

For MS in Statistics

Year : 2022-2023	
1. Which PLO(s) to assess	PLO 5
2. Is it aligned to an ILO?	Yes
3. If yes, list ILO.	Communication
4. Course name and number	STAT 632 – Linear and Logistics Regression
5. SLO from course	Communicate statistical concepts clearly and appropriately to others.
6. Assessment activity	Written project report
7. Assessment Instrument	Departmental Rubric for written communication
8. How data will be reported	Quantitatively, proportions of students in each category from 1-5 (5 mastered)
9. Responsible person(s)	STAT 632 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

B. Summary of Assessment Process

. **Instrument(s):**

It was decided that PLO #5 is better addressed by term projects that involve communication (either a written project or presentation that is worth considerable weight in the grading scheme of the course). STAT 632 "Linear and Logistics Regression" will be used for assessment of PLO #5. STAT 632 is a required course for all the MS students and they usually take it in the spring semester of their first year.

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

Sample Characteristics: All MS Statistics students in their first year.

Data Collection: STAT 632 is given every Spring for which the PLO #5 is identified and assessed by the instructor on record.

Data Analysis: The project in the class for STAT 632 is used to gather data.

Summary of Assessment Results

Main Findings: **Main Findings:**

Scores from the Project Presentation Assignment in STAT 632

Score (max 100)	PLO 1
95 - 100	33 (54%)
90-94	27 (44%)
80-89	0
70-79	0
Less than 70	1 (2%)
Total	61

Recommendations for Program Improvement:

After semester conversion, much of existing course content and course sequences have been altered. This has resulted in a drastic increase of student advising. Students seem to have performed well on the project presentations as can be seen from the data,

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 at this time.

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 6
2. Is it aligned to an ILO?	No
3. If yes, list ILO.	
4. Course name and number	STAT 692 – Comprehensive Exam
5. SLO from course	Employ theory, concepts, and terminology at a level that supports lifelong learning of related methodologies.
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.