**Student Outcome Observation Report for Term 24-2**

**items 1-4 can be completed prior to the assessment event**

1. **Outcome Details.**
   * 1. Outcome: Student Outcome 1 – Develop and conduct experiments or test hypotheses, analyze and interpret data, and use scientific judgment to draw conclusions.
     2. Performance Indicators:
        + Recall the basic statistical concepts of data analysis, data collection, modeling, and inference.
2. **Observation Details.** 
   * 1. Course Directors’ name: COL Nick Clark
     2. Number of Applied Statistics and Data Science majors assessed, by graduating class:

Class of 2024: 10

Class of 2025: 3

* + 1. Course: MA478 – Generalized Linear Models
    2. Name of observed event(s)*:* Final Project
    3. Was this an individual or team event? Individual
    4. Description of observed event.

The final project is a written report analyzing burglary data in Chicago. The general question the students must address is, what are the factors that contribute to burglaries in the city.

* + 1. Data evaluated and how it was gathered:

Students submitted a report that was to be no longer than 15 pages. The report was evaluated by the instructor. Each report was evaluated on its abstract, introduction, literature review, methodology, results, and discussion/conclusions. Basic statistical concepts of data analysis, modeling and inference were considered in the `methodology` section which was scored out of 55 points.

1. **Rubric.**

Students were scored on their ability to use an appropriate statistical model for the vague situation they were given. They were also scored on their ability to properly write out a statistical model and use data exploration to justify the construct of their model.

**All scores were converted to a percentage for evaluations below**.

* 1. Green: Met standard – Score on methodology section > 85% (47/55)
  2. Amber: Met standard with concerns – Score on methodology section between 65% and 85% (36/55 – 46/55)
  3. Red: Failed to meet standard – Score on methodology section < 65%. (< 35/55)

1. **Pre-observation identification of the overall Acceptable standard.** At least 80% must meet the standard (score of 1 or 2).

**must be completed after gathering the assessment data**

1. **Course Directors’ Assessment.** 
   * 1. Overall assessment. Based on the overall ***Acceptable*** standard specified in item 4 above, the overall performance of ASDS majors on this observed event was: *(Circle one:)*

* *Green: Acceptable performance*
* *Amber: Acceptable performance, but weak performance or weak evaluation event/conditions for the SO*
* *Red: Unacceptable performance, note when Unacceptable performance, but weak evaluation event/conditions for the SO Unacceptable performance*
  + 1. Justification for overall assessment.

Score Total %

1 13 100.0%

2 7 0%

3 0 0

* + 1. If the overall assessment is Unacceptable or weak, give your best educated guess as to why this performance occurred.

NA

* + 1. If the overall assessment is Exceptional or otherwise strong, give your best educated guess as to what we are (or the Academy is) doing to develop the knowledge, skills, and/or behaviors demonstrated by the students.

We focused heavily this semester on proper notation and using exploratory data analysis to properly select a statistical model. We also provided feedback to each student prior to their final project so typically they had already corrected any errors in this section prior to writing the report.

* + 1. Notable observations. Include any other strengths, weaknesses, or trends discovered when observing student work.

N/A

* + 1. Recommendations for improvement.

This year we focused on the data analysis and modeling component of the PI. In future years we should find another instrument to look at the students abilities to collect data. I am convinced that their modeling and inferential abilities are well honed at this point in time, but I’m not sure that we have done enough analysis of their abilities to collect data. This could be done in MA376 and then focus on modeling/inference in MA478.

* + 1. Data summary and archive. Attach a summary of individual performance and if feasible archive with the OMT the actual data. Explicitly state here the location of the archived data.

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| --- | --- |
| Asuncion | 53 |
| Blackmon | 50 |
| Chrisman | 53 |
| Hild | 53 |
| Hyatt | 55 |
| Kim | 50 |
| Klein | 50 |
| Palchak | 53 |
| Parcell | 48 |
| Rohan | 53 |
| Villanti | 53 |
| Watson | 50 |
| Wong | 55 |

Archived data are stored in the archived AY 25-1 MA478 course folder on the D/Math SharePoint under Graded Events -> Report Feedback