

Q-core Assessment Report

Course: **STAT 217: Intermediate Statistics**

Semester: Spring 2019

Instructor(s) and/or supervisor: Instructors: Priscilla Omari-Baah, Matthew Pettigrew, Elizabeth Mery, Elijah Meyer, and Greta Linse. Course Supervisor: Mark Greenwood

Assessment done by (2 faculty members): Mark Greenwood and Greta Linse

Number of students in course: 185

Number of students assessed (at least 6): All projects from one sections were assessed and so the five projects assessed covered all 18 students that completed the course in this section. Results as summarized based on the number of students meeting expectations.

Description of assignment, problems, and/or questions used for assessment:

A project where the students were tasked to fit multiple models and check the model assumptions and compare the different models. This was the third project of this format in the class and occurred near the end of the semester and they were required to work in groups to complete the assignment. The students ran the statistical software R to get their results and then wrote a report containing their results. They used a real data set on weights of bears to consider building a model to predict bear weight (which is hard to measure) from a suite of other variables that are easier to measure.

Learning Outcome 1: *Interpret and draw inferences from mathematical or statistical models represented as formulas, graphs, or tables.*

- Total number of assignments assessed: 18
- Number of assignments demonstrating the learning outcome at an acceptable level, as defined in the *Q-core Rationale and Assessment Plan* : 16
- Proportion of assignments rated as “acceptable”: 89%
- Is this over the specified threshold of 2/3? Yes
- Comments and ideas for better aligning the course or the assignments with the Q-core rationale:
Most students were able to correctly interpret the graphs that they made in the project.
- Comments and ideas for improving the process of assessment:

In future assessment with large(r) multi-section courses, it is recommended that “signature” questions on an exam be devised that directly relate to the learning outcomes despite the increase in work required to digitize and store exam responses. Using projects involves quite a bit of inherent variability in the ways students may or may not be meeting the outcomes and may require more time to complete the assessment.

Learning Outcome 2: *Represent mathematical or statistical information numerically and visually.*

- Total number of assignments assessed: 18
- Number of assignments demonstrating the learning outcome at an acceptable level, as defined in the Q-core Rationale and Assessment Plan : 18
- Proportion of assignments rated as “acceptable”: 100%
- Is this over the specified threshold of 2/3? Yes
- Comments and ideas for better aligning the course or the assignments with the Q-core rationale:

The students were very capable at getting the required results from the statistical software and including them appropriately in the report.

- Comments and ideas for improving the process of assessment:

None

Learning Outcome 3: *Employ quantitative methods such as arithmetic, algebra, geometry, or statistical inference to solve problems.*

- Total number of assignments assessed: 18
- Number of assignments demonstrating the learning outcome at an acceptable level, as defined in the Q-core Rationale and Assessment Plan : 12
- Proportion of assignments rated as “acceptable”: 67%
- Is this over the specified threshold of 2/3? This is at the 2/3 threshold.
- Comments and ideas for better aligning the course or the assignments with the Q-core rationale:

Students struggled to correctly interpret some concepts, especially the model estimates vs hypothesis tests. Additional focus on the interpretation of models instead of just the hypothesis tests will be considered for future semesters. It is unclear if the project prompt led to some confusion of the task at hand and confusion of methods employed but the project descriptions

will be carefully considered to try to make this more clear and hopefully more consistent across the students.

- Comments and ideas for improving the process of assessment:

None as the project provided a good platform to assess student ability to interpret model estimates and tests. But this is a difficult concept in a complicated model and some struggled to do this successfully.