Mathematics | 2015-2016 Assessment Report

Please give a brief overview of the assessment data you collected this year.

The assessment data was collected through MATH 385 Foundations of Geometry for spring 2016.

1. It is a required course for Mathematics majors with a Mathematics emphasis and an elective course for Mathematics minors with a Mathematics emphasis.
2. It includes interdisciplinary contents that explores many topics within mathematics including Calculus, Linear Algebra, Analysis, Number Theory, Topology, and Geometry (Euclidean and Non-Euclidean). Students will apply them to the areas of History (Mathematics), Hyperbolic Space (Physics & Astronomy), transformation (picture distortion), Chaos Theory, Projective geometry (drawings), etc. So, several questions span across of the semester. It is problem-focused and students will write a lot of (mathematical) proofs, making this a best fit for Capstone experiences.
3. There were 12 students (2 juniors and 10 seniors) who started the course for spring 2016 and all 12 students passed the course with grade C (2 student) and above.
4. All 12 students were having Mathematics major with 1 or more other majors (Education, Certificate in Sustainability, Environmental Science, Spanish & Latin American Studies, Bachelor of Science, History, Music, Business Administration, Computer Science).
5. The assessment includes a combination of 6 midterms, 1 midterm, and the final.
6. All the exam problems are free-response, mostly consisting of proofs.
7. The following outcomes were assessed:

LO1. Mathematics majors will be able to understand the important mathematical/statistical concepts, theorems, formulas, computational techniques and axiomatic systems in the required courses.

LO2. Mathematics majors will be able to demonstrate the ability to follow, construct, and write mathematical proofs.

LO4. Mathematics majors will be able to pose mathematical/statistical problems, and select and apply appropriate mathematical/statistical theories, models and tools to solve and/or analyze the problems.

How will you use what you've learned from the data that was collected?

1. The students achieved an average score of 83.9%
2. The data shows that most of the students successfully demonstrated their understanding of most of the important concepts and skills. Their skills at proof writing were sufficient.
3. All LO1, LO2, LO4 were successfully implemented for spring 2016.