Math Department Program Level Outcomes Assessment (2017-2018)

## Outcome to Be Assessed

Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world.

## Criterion for Acceptable Attainment of the Outcome

At least 70% of students will be able to model and analyze phenomena in the real world at an acceptance level of at least 70%.

## Assessment Method

The assessment consisted of solving a problem that described a `real world’ situation. MATH& 107 students were asked to analyze a situation involving a five-year car loan with a given APR. MATH& 141 and MATH& 147 students were asked to analyze a situation involving an investment with compound interest. MATH& 146 students were asked to construct and interpret a least-squares regression equation relating length and weight of bears. These questions were inserted into the final exams for these courses. The student responses were then scored according to a rubric.

### Results

**The criterion for success (at least 70% of students will score at least 5 out of 7 on the assessment) was met**. Overall, 78.1% of the students were able to model and analyze real world phenomena at an acceptable level. Note, however, that in MATH& 107, we fell short of our goal.

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| --- | --- | --- | --- | --- |
| **Course** | **Sample Size** | **Number Not Passing** | **Number Passing** | **Pass Rate** |
| **MATH& 107** | 31 | 12 | 19 | 61.3% |
| **MATH& 141** | 31 | 6 | 25 | 80.6% |
| **MATH& 146** | 71 | 13 | 58 | 81.7% |
| **MATH& 147** | 22 | 3 | 19 | 86.4% |
| **All Courses** | **155** | **34** | **121** | **78.1%** |

**Analysis Table**

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| --- | --- | --- | --- | --- | --- |
| **Level** | **Score** | **Percent** | **Frequency** | **Cumulative** | |
| Proficient | 7 | 37.4% | 58 | 78.1% | 100.0% |
| 6-6.5 | 26.5% | 41 |  |
| Acceptable | 5-5.5 | 14.2% | 22 |  |
| Unacceptable | 4-4.5 | 6.5% | 10 | 21.9% |  |
| 3-3.5 | 5.8% | 9 |  |
| 2-2.5 | 3.9% | 6 |  |
| 1-1.5 | 1.9% | 3 |  |
| 0-0.5 | 3.9% | 6 |  |
|  | | | 155 |  | |