Mathematics-Teaching
Program Assessment Fall 2013

For Fall 2013, two learning outcomes were assessed in the course M428: Modeling for Teachers. As stated in the assessment plan, for those students completing the Mathematics Major – Teaching option, the following outcomes are assessed:

5. [CCSS Statistics and Probability]
    Model, analyze, and interpret situations using data analysis, statistics, and probability.

6. [CCSS Modeling]
    Develop, apply and validate mathematical models using current and emerging technologies.

These outcomes were assessed using the signature assignment for M 428, an independent modeling project. The rubric from the assessment plan was used:

	Unacceptable 1	Acceptable 2	Proficient 3
Student's signature assignment for the learning objective being assessed:	Displays limited range of appropriate reasoning, problem solving, or modeling strategies in the mathematical content focus that would enable success in the teaching profession.	Displays an adequate range of appropriate reasoning, problem solving, or modeling strategies in the mathematical content focus that would enable success in the teaching profession.	Displays a substantial range of appropriate reasoning, problem solving, or modeling strategies in the mathematical content focus that would enable success in the teaching profession.

Description of Signature Assignment
The project asked students to find a data set for which an empirical model could answer a question of interest. They were to choose, present, and evaluate a model, using appropriate technology. They were to demonstrate ability for success in the teaching profession by describing how the modeling process undertaken is appropriate for grades 6-12.

Assessment Results
All 15 students in the course were assessed. 100% of the students in the course demonstrated at least an acceptable level in these learning outcomes. 60% demonstrated a proficient level for the outcomes.

	Unacceptable	Acceptable	Proficient
Number (percentage) of students achieving this level.	0	6 (40%)	9 (60%)

Formative Assessment
Students' performance overall was strongest in creating, using, and interpreting models. Four students were acceptable but not proficient in connecting their model to grades 6-12 teaching; five students

were acceptable but not proficient at explaining why the modeling techniques they used were appropriate. Instruction in the future can provide more opportunities for making these connections and explaining modeling choices.

Conclusion

The Mathematics-Teaching major at Montana State has successfully met the criteria set forth in the program assessment plan.