Student Learning Outcomes for the Mathematics Program

It is expected that each mathematics graduate will be able to:

1. **Reason** mathematically and statistically.
2. **Solve** complex problems using mathematics and statistics.
3. **Communicate** mathematical and statistical ideas.
4. **Evaluate** mathematical and statistical work.
5. **Demonstrate** mathematical knowledge commensurate with national norms.

The revised program outcomes above were drafted to be more focused than the previous program outcomes. We also wanted the program outcome statements to be more easily assessable as defined in Ed Nuhfer's document on writing assessable outcomes. These revised program outcomes are still drafts in the sense that the Mathematics Faculty has not yet officially approved them by means of a department vote. Additionally, many (most) of the courses in the mathematics program did not have existing course level student learning outcomes codified on curricular forms as the forms for these courses predate the notion of student learning outcomes as it now exists. Consequently it was necessary to draft the course level outcome for most of our courses from scratch. Whereas the department did discuss these course outcomes in two separate department meetings, no vote has yet been held to officially approve them. We view these course level outcomes as fluid, and we expect that we will change these drafts over time as we converge on an assessment process that works well for us.

With respect to mapping the course level outcomes to program level outcomes, the Mathematics Faculty discovered during our conversations that we view nearly all of our courses as supporting all of our program outcomes, and that in particular, this viewpoint is intentional. We see a course level outcome mapped to a program level outcome as providing a partial support for that program level outcome. Other courses provide additional support, and together the courses in the program support the program level outcome in its entirety. We discussed the temporal nature of this support, and in particular we discussed how the structure of this excel file makes it difficult to express this temporal nature. For example, we support the "Solve" program level outcome in all of our courses, but the level at which the outcome is supported during the freshman year in calculus 1 (MATH 109) and the level it is supported during the junior year in numerical analysis (MATH 351) are very different. In particular, the latter depends on experience with the former.