Student Learning Outcomes/Objectives, with Any Associations and Related Measures, Targets, Findings, and Action Plans

**SLO 1: Fundamental concepts**
Students will acquire fundamental concepts in areas of calculus, linear algebra, abstract algebra, and additional topics.

**Related Measures**

M 1: Major field test in mathematics

Source of Evidence: Standardized test of subject matter knowledge

Target:
Our goal is that the average of all of our student percentiles scores against the national average is 50%. That is, our goal is that our mathematics undergraduate program is as good as the average US mathematics undergraduate program.

M 2: Exit survey
Students will complete written exit surveys in the Undergraduate Mathematics Capstone Course Math 3900. Describing their overall satisfaction with the program and their career and personal goal.

Source of Evidence: Exit interviews with grads/program completers

Target:
70% of the students will grade their education as B or above on an A,B,C,D, F scale of whether or not it was fulfilling, complete, and supportive of their personal career goals in Mathematics. Surveys will be discussed and shared amongst the entire faculty

**SLO 2: Construct and effectively present information and concepts**
Students will be able to construct and effectively present information and concepts visually and verbally through oral presentations.

**Related Measures**

M 3: Oral PowerPoint presentations
All undergraduate students will present one oral presentations in the Undergraduate Mathematics Capstone Course Math 3900. This presentation will be open to the entire university community and advertised beforehand. To help improve the quality of the presentation, we will assign faculty in the mathematics department to individual students. The faculty member will provide feedback and advice about the presentation.

Source of Evidence: Presentation, either individual or group

Connected Document
3900 Oral Rubric

Target:
70% of the students will achieve a B or better on their presentations using a grading rubric developed by faculty consensus.

**SLO 3: Mathematical concepts**
Students will be able to explain mathematical concepts in technical writing format by their date of graduation.

**Related Measures**

M 5: Written essay
All undergraduate students will complete one 6+ page written essay (which can be on the same subject as their PowerPoint presentation of the class but should have a different format) in the Undergraduate Mathematics Capstone Course Math 3900. To help improve the quality of the written essay, we will assign faculty in the mathematics department to individual students. The faculty member will provide feedback and advice about the written essay.

Source of Evidence: Written assignment(s), usually scored by a rubric

Connected Document
3900 Written Rubric

Target:
70% of the students will achieve a B or better on their written presentations.

**SLO 4: Student satisfaction**
Students will express satisfaction with the academic program.

**Related Measures**

M 7: Student course evaluations
Student course evaluations.

Source of Evidence: Student satisfaction survey at end of the program

Target:
Other Outcomes/Objectives, with Any Associations and Related Measures, Targets, Findings, and Action Plans

O/O 5: Support current undergraduate degree in mathematics
Make sure the undergraduate degree program in mathematics has all of the tools and ingredients it needs to be a successful program.

Related Measures

M 8: Discussion about computer software
Have discussions in among faculty about computer software in the mathematics building. Verify that computer labs for math majors in the mathematics building have appropriate computer software for all areas of mathematics: actuarial, applied, pure, and statistics. If they do not, purchase appropriate software.

Source of Evidence: Discussions / Coffee Talk
Target: Have a faculty meeting.

M 9: Hire more math professors who can teach classes
Hire more professors so that we can teach enough classes to satisfy the demands of upper level undergraduates who want to take classes is all of the following areas: actuarial math, applied math, pure math, and statistics.

Source of Evidence: Administrative measure - other
Target: Hire at least one math professor qualified to teach actuarial math and/or statistics and at least one math professor qualified to teach pure math and/or applied math. Also, retain all mathematics instructors as they are vital to the success of the mathematics program. This would support not just the mathematics department but the larger university community as well. As a service department, most of the undergraduate courses we teach (even ones that math majors take) are primarily used by students of other departments. To be specific, here is a comprehensive list of all classes at the 4000 level and under that the department of mathematics is teaching for fall 2014 (not including reading classes): Math 1021, 1031, 1032: (6 total sections) Survey of mathematical thought classes taken mainly by education and liberal arts majors. Math 1115, 1116, 1125, 1126: (30 total sections) College algebra and trigonometry classes taken by the whole university community. Math 2108, 2109, 2112, 2115: (6 total sections) Legacy calculus classes (sequence being phased out) taken mainly by engineering and science majors. Math 2114, 2124, 2134: (7 total sections) New calculus sequence (sequence being phased in) taken mainly by engineering and science majors. Math 2221, 3221: (3 total sections) Differential equations classes taken mainly by engineering majors but also some science majors. Math 2314, 2785: (9 total sections) Statistics classes taken by all majors (business majors take Math 2785 and non-business majors take Math 2314.) Math 3511: (1 section) Linear algebra (matrices) class taken mainly by engineering and science majors. Math 3512: (1 section) Abstract algebra class taken by math majors but also some math education majors and interdisciplinary studies majors. Math 3721: (1 section) Discrete math class taken mainly by computer science majors. Math 4101: (1 section) Advanced calculus class taken by math majors. Math 4801: (1 section) Actuarial math class taken mainly by math and business majors. (As of Sept 4, enrollment in 4801 is slightly under 59% math major and slightly over 41% non-math major.) So out of 56 classes, 3 classes (Math 3512, Math 4101, and Math 4801) are aimed only at math majors. This is about 5% of total classes. Even then, Math 4801 arguably still has about half non-math majors in it. Some students opt to get a minor in mathematics because of the significant number of math classes they have already taken for their other major. In summary, the undergraduate courses taught by the mathematics department are mainly aimed at the larger university community as service courses. The number of courses aimed only at math majors is very small, because many of the courses taken by math majors are also taken by other disciplines.

M 10: Ensure that the math tutor center is providing appropriate help
To ensure that the math tutor center is providing appropriate help to students, students will evaluate the center upon exiting it after receiving help. They will fill out a form where they check, "(1) My questions were answered and I received appropriate help; or (2) My questions were not answered or I did not receive appropriate help." Our goal is for 80% of students to answer option (1).

Source of Evidence: Student course evaluations on learning gains made
Target: Initiate survey and have at least 80% of students answer option 1.

O/O 6: Modify program to attract and retain more students
Modify the mathematics undergraduate degree program to attract and retain more students.

Related Measures

M 11: Have discussions and partnerships with local high schools
Have discussions and partnerships with local high schools. These discussions will hopefully increase partnership and trust so that we have a better relationship with local schools and are in a better position to attract more local student.

Source of Evidence: Discussions / Coffee Talk
Target: Have a discussion.

M 12: Math club talks
Have at least one math club talk per semester with topics which excite and motivate students.

Source of Evidence: Activity volume
Target: Have at least one math club talk each semester.