

Academic Affairs Council Response to Mathematics Self-Study (2018)

I. Introduction

Program chair Woo Jeon submitted a program self-study in November 2017 and answered questions for the Academic Affairs Council on December 19, 2017. The Mathematics program at the University of Wisconsin-Green Bay offers two areas of emphasis (Mathematics and Statistics) within its major and minor. The program has experienced considerable turnover in recent years, with one tenured faculty member, four tenure-track professors, and three senior lecturers. Despite this turnover, the number of majors (56) and minors (19) are both the highest since 2012. In addition to the demands of its own program, the Mathematics faculty must also serve the general education program and a wide range of programs across the campus. With a cohort of tenure-track faculty, the Mathematics program continues to increase its majors and minors, innovate in its offerings, and contribute to the general education program and other majors and minors in meaningful ways.

II. Assessment of Student Learning

Since its last self-study, the Mathematics program has completed reviews of Learning Outcomes One, Two, and Four. The faculty concluded that students fulfilled these outcomes. Recognizing that most of this information is quantitative, is there any opportunity for gathering qualitative information? What future plans are there for assessment of student learning? Three of the assessment exercises involved MATH 385. Are there other courses that might be incorporated into the process?

III. Program Accomplishments

A. Research - During the period under review, the faculty have published nineteen articles and presented their research at six conferences, an impressive record, particularly given that four of the faculty members are tenure-track.

B. Teaching

1. Three Mathematics faculty (W. Jeon, T. Malysheva, and M. Olson Hunt) were nominated for the Student-Nominated Teaching Award. Olson Hunt won the award in 2017.
2. The Mathematics faculty has updated the course placement table to provide distinctive paths for STEM students and those pursuing degrees in the Humanities.
3. The Mathematics faculty have designed an Actuarial Science minor emphasis and have submitted the proposal for approval.
4. The Mathematics faculty started a Math and Stats Club in fall 2017.

IV. Program Strengths and Areas in Need of Attention

A. Strengths

1. The Mathematics faculty have been active in their scholarly fields, publishing research and participating in professional conferences.
2. The increasing number of majors and minors signals the successful incorporation of new faculty and the program's initial steps toward transforming its offerings.
3. The Mathematics program supports departments across the campus and will continue to expand that support with the new engineering programs being unveiled.

B. Areas in Need of Attention

1. Student surveys reveal that Mathematics majors did not rate the program's course offerings, the quality of teaching, or the quality of advising as highly as students in other programs across the campus.
 - a) Given the turnover the Mathematics program has experienced, these statistics are not surprising. The program remains one position short especially given the remedial demands outside its general education and major/minor offerings as well as its service for other programs. As a consequence, Mathematics has been forced to rely on ad hocs.
 - b) Mathematics faculty serve the university's general education program, which has made mounting the major and minor more difficult given the size of the program. One direct consequence has been the program's inability to offer more electives. In addition, faculty have been forced to teach outside their areas of specialization.
 - c) The Mathematics program has been struggling with low-enrolled courses in its Math emphasis, resulting in the cancellation of some courses students needs for the major.
2. The most recent study highlighted the program's low number of majors and minors categorized as members of underrepresented groups at the university.
3. The last Mathematics self-study included some discussion of the creation of a Mathematics Center on par with the university's Writing Center. Staffing remains the primary obstacle to this recommendation.
4. Students indicated that they lacked knowledge about career opportunities, although majors participated in majors. Part of this lack of knowledge may be a consequence of a limited number of connections between the program and the community.

V. Conclusions and Recommendations

A. Programmatic Changes

1. The Mathematics faculty have identified a variety of ways in which they intend to continue to transform the program in order to attract new majors and minors. The Actuarial Science minor emphasis is an important first step. Adding new courses and repackaging existing offerings should also support the program's continued resurgence.
2. The Mathematics program will want to assess other learning outcomes and expand the courses being used in its self-evaluation.

B. Supporting Courses

1. The Mathematics program will play an important role in the new engineering programs while continuing to support an array of other majors and minors across the campus. These new campus initiatives may generate the necessary resources for the program to finally fill the remaining vacancy.

C. Remedial and Pre-College Offerings

1. The Mathematics program should continue to explore ways to reframe its remedial programs and its role within the Turbo Charge initiative. The former component has been a point of re-evaluation and programmatic revision since the last self-study.
2. Possible Parallels with English Composition
 - a) The Mathematics may examine the changes being made to the English Composition curriculum as a possible model for its remedial offerings.
 - b) The Mathematics Center would be a valuable addition to the campus's network of student success resources and should remain an aspirational goal for the program.