

Program Assessment and Review Subcommittee  
**Review and Recommendations Concerning  
The Mathematic Program**  
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**I. Introduction**

In the program review process, the Program Assessment and Review Committee (PARC) is asked to provide a University-wide perspective. In that role, the *Guidelines for Program Review* state that PARC will:

- A. Review each program's self-study, external review, and responses to that review, and
- B. Evaluate all recommendations and send its report to the Program Chair, Provost, Dean of Faculty, and AVP for Academic Programs.

In completing this assignment, a subcommittee was formed by PARC in spring 2009 to review the Mathematics Program's self-study, comments on the self-study made by the provost and dean, and the report of the external reviewers. The subcommittee drew also on its own familiarity with the Math program in drafting comments and recommendations. These recommendations in turn were discussed and approved by the PARC Committee.

This PARC review is intended to highlight select areas mentioned in earlier report documents. Rather than replace these documents, PARC urges the Math program and administrators to continue to consider the many helpful comments generated during the review process.

**II. Suggestions and Recommendations**

**A. Program Purposes and Ensuring Educational Outcomes**

**Strengths**

As mentioned in the dean's review letter and as confirmed by information in the Data Packs, the Math Program is effective in managing students' time to the baccalaureate degree. The program is also effective in serving diverse students (Self Study, p. 14-17).

The Mathematics Program updated and clarified its program learning outcomes in 2005 as part of the Assessment Plan Preparation Program, and has identified assessment tools it uses in program assessment. The Self-Study contains assessment results for the two academic years of 2005-6 and 2006-07 (p. 10-11)

As noted by external reviewers, the Math Program website is complete, informative for students, and assists undergraduates in planning their undergraduate programs

### **Considerations:**

External reviews make several curriculum recommendations which the program should consider, including the need for a mathematical proof writing course, examining attendance requirements for the MATH 399 lab class, and the large number of concentrations offered in the major.

In its recommendations on program improvement, and in the context of its request for additional resources, the Math Program notes that its breadth of activities “is barely sustainable under current conditions” and asks “for guidance on which elements of our program should retain priority and which should be dropped.” Perhaps the time is appropriate for the program to engage in a planning exercise to identify program priorities and resource needs, using the suggestions in the program review for direction.

## **B. Achieving Educational Outcomes**

### **Strengths**

Mathematics program faculty members are commended for actively engaging students in the learning process and for sustaining a dynamic student-faculty interaction. This engagement was highlighted by external reviewers.

The program has fostered an atmosphere of dynamic faculty-student interaction, with faculty engaged in its own research and engaged with the students in many clubs, competitions, and cooperative research efforts.

Faculty do a good job publishing and remaining current in their academic fields (Self-Study, p. 20).

Faculty connect course learner outcomes on a class by class basis through syllabi and discussions with students.

**Considerations:**

Mathematics program faculty are encouraged to seriously consider the assessment concerns raised by the external review (p. 6-7, item 11) while designing and conducting future assessment cycles. The Mathematics program is commended for implementing changes as results of prior assessment cycles (Self Study, p. 11). We recommend that the program review the detailed analysis of the Mathematics assessment of specific outcomes in the external review.

Regarding Learner Outcomes for the Program and Learner Outcomes for the individual courses, there could be improved communication of these Student Learning Outcomes to students in addition to syllabi. Due to the cost of including Student Learner Outcomes in the printed catalogue, we recommend providing both Program Student Learner Outcomes and Course Student Learner Outcomes on the web site. Students benefit from knowing the outcomes in order to choose classes and prepare their schedules in terms of study and the other demands of working and family.

**C. Developing and Applying Resources to Ensure Sustainability****Strengths**

The training and professionalism of the pre-tenured and tenured faculty is outstanding. The faculty members are from diverse backgrounds, which benefits students.

As noted by the external reviewers, the research accomplishments and faculty development initiative of tenure-track faculty outlined in the self-study is impressive, and attests to effective use of assigned time through competitive mini-grants and successful competition for outside resources.

The program has done very well in securing outside funding for projects and essential software to meet their teaching and research mission.

In general, the Mathematics program has made effective use of limited resources, serving the University and its majors very well. We note the high student/faculty ratios in Math (Self-Study, p. 22-24).

## **Considerations:**

The external reviewers suggest that the program establish better communication mechanisms between the Chair and faculty. Regular meetings and a commitment to consensus are recommended.

Both the Self-Study and the external reviewers highlight that 79% of mathematics courses are taught by temporary faculty, 73% of courses that satisfy B.S. in Mathematics requirements. More tenure-track faculty hires in Mathematics would certainly mitigate this high ratio, as suggested by the Self-Study (p. 33) and the reviewers. External reviewers noted that tenure-track faculty teach on average 6 WTU, while the self-study make clear the other duties are accomplished through assigned time. What is less clear is the impact that the graduate program has on the tenure-track faculty and their teaching responsibilities.

The degree to which Mathematics is a service program for the University is implied (through, for example, discussion of need for more assigned time) but understated in the Self-Study, and even more understated in the external report. With 28 of 57 sections in the fall 09 schedule serving non-majors, a quantification of the service of the Math program to the university as a whole (through remedial math and General Education courses) and other programs by offering required courses for other majors (i.e. Business and Economics, Liberal Studies, Computer Science, Psychology) would help measure both the effectiveness and resource needs of the program.

With so much software and computer acquisitions through grants and special allocations (such as CERF funds, lottery, and private donations), some mechanism for building these on-going costs into the base budget needs to be developed, as called for by both the Self-Study and the external review.

The Math program should continue to press its space issues (suitable air-conditioned classrooms with whiteboard space, sufficient numbers of lab stations, a lab in the math area for student access outside class time) that are discussed in both the Self-Study and the external review with the University as it grows in physical capacity.

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