

Annual Report for Academic Year 2009-2010

Department of Mathematics and Statistics Student Learning Outcomes Assessment for MS, MAT, PhD Degrees in Mathematics

INTENDED OUTCOMES OBJECTIVES	ASSESSMENT CRITERIA	IMPLEMENTATION PROCEDURES (what, when, who)
1) Our curriculum will be comparable to national standards	Compare our program to University of Idaho, University of Wyoming, and University of North Dakota.	Every three years, the members of the Graduate Committee from mathematics will compare our program to the three specified institutions and give a report on their findings to the assessment committee to include in the annual report.

Status: The University of Idaho program has 16 math faculty, and around 20 graduate students. The M.S. program requires students take a similar number of courses to UAF, but has comprehensive examinations on 6 topics, and does not require a project or thesis. Course offerings are slightly more extensive than UAF's. As at UAF, there appear to be no true Ph.D. level courses. Ph.D. student must pass comprehensive exams in 3 topics, with specific books indicated for study (similar to our new Ph.D. requirements). The major difference from UAF is that UI has several courses designed specifically for the MAT program, as well as 3 faculty members in Mathematics Education.

The University of Wyoming has around 21 faculty members, and 30 graduate students (25 of whom are supported through TA-ships!). Graduate course offerings are approximately double UAF's. The MS program is similar to UAF's, requiring both a qualifying exam and a thesis/project. The Ph.D. program requires an additional qualifying exam, and specific coursework beyond what we have sufficient staff to offer at UAF.

The University of North Dakota has 17 faculty, and around 10-12 graduate students. It offers only M.S. and M.Ed. degrees, based entirely on course work, without qualifying exams or theses/projects. Although the UND catalog lists more courses than UAF offers, it appears that actual offerings are quite similar (3 or so graduate courses per semester).

UAF has had only 10.5 full-time math faculty members to contribute to the graduate math program. Given our smaller faculty size, we have done a good job of maintaining quality programs, but we are probably a bit over-extended. Of the comparison schools, only Wyoming has courses approaching a Ph.D. level, and it has twice the staffing and many more TA-ships. We are perhaps most similar to Idaho, though with many fewer graduate students. Our program is clearly within the range of these schools', and our requirement for an M.S. project is a strength over some of their programs. Our M.A.T. remains underdeveloped, but changes would require additional resources. Our new Ph.D. program rules represent a step forward, but some faculty have continuing doubts that we are large

enough to offer a strong program. We would benefit greatly from having a larger number of graduate students, but need additional TA-ships for that to be possible.

2) Our students will master a core of mathematical concepts.	All students are required to take and pass four core courses. In order to graduate, all students must take and pass a collection of exams on core subjects.	Every spring, comprehensive exams will be given, graded, and discussed by the majority of the math faculty. A summary of the results will be prepared by the members of the Graduate Committee from mathematics to be included in the yearly assessment report.
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Two PhD students graduated in Fall 2009, namely A. Bulanova and V. Mikhailov. This successful and welcome outcome leaves the PhD program with no current students. There is no Department consensus that there should be active recruitment of new PhD students.

There are currently six MS students. Of these, two took their comprehensive exams in mathematics in Fall 2009, and both passed though one student retook one-third of the exam in order to pass (allowed under the published rules for MS Mathematics comprehensives). Of the remaining four students, three have scheduled MS comprehensive exams for the end of May 2010, and one who entered this year has chosen to put off the exams till next year. The two students who have passed their exams in the Fall have not yet completed projects/theses.

The four required MS-level core courses have, as stated in the catalog, been taught one-per-semester for several years, including the 2009/2010 academic year. (Specifically, MATH 641 was taught in Fall 2009 and MATH 645 in Spring 2010. MATH 631 was taught in Fall 2008 and will be taught in Fall 2010.) An additional five elective courses at the MS level were taught in 2009/2010.

A reasonably complete website for MS Mathematics advising is at www.dms.uaf.edu/math/msmath.html.

There are no current M.A.T students.

3) Our students will have the opportunity to develop the skills necessary to achieve their career goals in mathematics.	alumni survey	Every May, alumni surveys will be sent to all students who graduated with a degree in mathematics two years prior. The returned surveys will be summarized by the assessment committee in the annual report the following spring.
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Status: Surveys were last sent out to all those earning MS degrees in 2004-05 and 2005-06. However, only 1 form was returned.

One of our PhD graduates is working as a grant-funded researcher in the institutes.