Assessing Student Outcomes – 2006-07

Program name:
Department of Mathematical Sciences

Report prepared by:
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Who is the current Assessment contact for your department?
Yu Song, Chair

Should assessment information be sent to anyone else in your department?
No

1. What are the program's educational goals?

The major goal of our program is to give students seeking degrees in mathematics a broad understanding of the field of mathematics.

- Students should have the ability to read and understand technical mathematical writing, including proofs, in such areas as algebra and analysis.
- Students should have the ability to communicate mathematical ideas, both in written and verbal form, to others.
- Students should be able to model complex problem situations in equivalent mathematical form and, once a solution is found, be able to translate the solution into the original problem context.
- Students should be able to use appropriate technology to explore and solve mathematical problems.
- Students should be able to apply mathematical knowledge in non-academic contexts.

2. What assessment techniques did your program use?

The Department of Mathematical Sciences uses several methods to assess students of mathematics. A major instrument of assessment is the use of student portfolios, containing representative work from all 400 level Mathematics courses taken by a student. Depending on the desires of the instructor, the representative work may include such items as final examinations, homework assignments, projects, papers, etc. Student research projects are also included in their portfolios.

Other components of our assessment plan include records of student applications to graduate schools, and student performances on the Putnam, on the actuarial exams, and on other competitive examinations such as the Indiana College Mathematics Competition.

3. What has your program done with assessment information this year?

Student performance on the actuarial exam in the past year has been below our expectations. In order to encourage students to better prepare for these exams, we have offered to reimburse students who pass actuarial exams for the fees incurred, as long as funds are available. We have also extended this incentive to those who score well on the GRE in Mathematics when it is taken to prepare for graduate school.

As part of an ongoing response to earlier assessment results, we extended our strengthening of pre-requisites to our calculus sequence. Now, a grade of C- or better in pre-requisite courses is required for enrollment in both M215 and M216.

4. After reflecting on assessment activities in your unit, as a result of assessment what are two issues you would like to address?

We continue to consider the results of recent student and alumni surveys. One issue that comes up repeatedly is the infrequency of the upper level offerings. We are currently attempting to coordinate a new schedule of offerings that will help our students complete their degrees in a timely manner. This involves cooperation with the consortium math departments at Bethel and St. Mary's. We hope to have a new plan in place by Fall 2007 or perhaps Fall 2008.

In addition, the department curriculum committee will be reviewing the syllabi of the upper level courses M403 - M405 and M413 - M415. The courses M404/M405 alternate in the second semester as do M414/M415. The curriculum committee will consider whether or not the content of M413 should change depending on what second semester course will be offered. It will also review the changes made in the syllabus of M403 due to the variation in the second semester course.