TO: William V. Flores, Provost
THROUGH: Peter Gregware, Associate Dean, College of Arts and Sciences
FROM: Ross E. Staffeldt, Department Head
DATE: January 13, 2005
SUBJECT: Graduate Program Outcomes Assessment Plan

The purpose of the graduate program in mathematics is to provide students desiring to go beyond the undergraduate level with the means for becoming capable and scholarly individuals. Students who have completed a graduate degree should have a comprehensive knowledge of their fields, the ability to communicate mathematics, and, in the case of Ph.D. students, an ability to engage in productive original research.

The goals of the Master’s program are to develop within the candidates the ability to read and understand mathematical writing, to analyze intricate mathematical problems, to write and communicate mathematics clearly, and to understand and formulate mathematical proofs. The extent to which these goals have been met are assessed in connection with the masters oral examination; the examiners are asked to assess the student’s attainment of these goals independently of whether the student passes or fails the exam.

The goals for the Ph.D. program include all those for the Master’s program, plus the ability to find, read, and understand mathematical research papers in the candidate’s specialty and also the ability to create original mathematics. Attainment of these goals is assessed by the student’s committee in connection with the doctoral comprehensive examination and the Ph. D. dissertation defense.

At the time of each oral examination a questionnaire is given to the examining committee. With the master’s oral and comprehensive exam, the committee is asked to rate evidence of the breadth of the student’s mathematical training, on a scale from 1 to 5, with 1 narrow and 5 broad. With the dissertation defense, the committee again uses 5 point scales, but addresses the originality of the student’s contribution and the student’s demonstrated ability to access the relevant literature. Copies of the questionnaires are attached.

For the academic year 2004-05, the Department of Mathematical Sciences is adding to these two assessment procedures an additional procedure. At the end of each semester instructors of graduate classes will write commentaries on the performance of each mathematics graduate student. The graduate studies committee will evaluate the feedback received, report to the faculty, and lead a discussion of the observations. Responses will be based on students’ performances on homework, examinations, projects, and oral (seminar) presentations.