

Department of Mathematics and Statistics
M.S. Mathematics Education Comprehensive Exam
Qualifying Papers & Oral Examination Approval Form

To be eligible to take the Comprehensive Examination, students must:

- a) Have a cumulative grade point average of 3.0 or better across all courses completed in their program;
- b) Have no more than 10 hours of required coursework remaining and anticipate completing this coursework within one calendar year; and
- c) Be formally registered in MAT 603 graduate coursework at NAU at the time of the exam.

The Comprehensive Examination Committee shall consist of 3 members. Where possible, the committee membership should be restricted to those faculty members from whom the candidate has completed or is in the process of completing coursework in his/her program. The co-Chairs of the Committee are the instructors of the two selected pedagogy courses. This M.S. Mathematics Education Comprehensive Oral Examination Approval Form should be submitted by the candidate and his/her advisor **by the end of the 2nd week of the semester in which the exam will take place** in order to leave adequate time to complete and revise the qualifying papers and prepare for the oral exam.

The Comprehensive Exam covers three courses, selected with the guidance of the candidate's advisor and approved by both the advisor and the Graduate Operations Committee. Two of the courses selected should be from the non-*Connections pedagogical/methodological* courses (e.g. MAT 500, 501, 502, 508, 509, 510, 600, 601, 602) and one course should be selected from the *Content Connections* courses (e.g. MAT 504, 505, 506, 507). A brief description of which courses the candidate has selected for the Portfolio project, why the courses have been chosen, and how the courses will demonstrate evidence of application to practice shall be completed at the bottom of this form.

Note: If the Comprehensive Exam includes courses that are currently in progress, then the exam may not take place until after the 12th week of instruction (after the 4th week of instruction in the summer).

The M.S. Mathematics Education Comprehensive Exam consists of 3 unique (not submitted as part of a previous course) qualifying papers and an oral examination. One paper will summarize the general instructional context and background of the candidate's current teaching position, along with overall reflections on the MS Math Ed program. The second and third papers will provide a thorough discussion and synthesis of concepts covered in each of the chosen *pedagogical/methodological* courses. Additionally, the candidate will participate in an oral examination on the date of the Comprehensive Oral Exam covering content and instructional implications of the chosen *Content Connections* course. The Comprehensive Oral Exam may not occur until all committee members deem the candidate ready for defense as measured by successful completion of the qualifying papers and a content-related discussion with the appropriate committee member.

The M.S. Mathematics Education Comprehensive Oral Exam typically lasts 2 hours. Approximately one hour focuses conversation on the implementation of instruction highlighting pedagogy and seminal concepts from the chosen non-*Connections* courses (as developed in the qualifying papers) and other essential ideas from the M.S. Mathematics Education program and the broader mathematics education community. This part of the oral exam will start with a brief (i.e. less than 10 minute) presentation that covers main ideas addressed in the qualifying papers and discussion, evidence, and reflection on the implementation of pedagogical shifts associated with the non-*Connections* courses. This presentation should be facilitated by a short PowerPoint or Prezi presentation. The other hour of the oral exam will focus on the *Content Connections* course so that the candidate can demonstrate deep understanding of the mathematical content from the chosen course and make connections between the many key pedagogical concepts learned and applied throughout the program.

At the end of the Comprehensive Oral Exam a discussion of the Committee members shall occur, with a vote taken following the discussion. The committee members may vote to pass or fail. If a two-thirds majority is not obtained to pass, then the candidate fails the examination. The oral exam on the same set of course work may be retaken after a period of one month has passed. Should the candidate fail the comprehensive exam a second time,

then enrollment in the program will be terminated. The Co-Chairs of the Committee will promptly convey the result (pass/fail) of the exam to the Chair of the Graduate Operations Committee.

Student name/signature/date

Degree program

GPA

Proposed committee co-chair name (Pedagogy Course 1)

proposed course

Brief description of why this course was selected:

Proposed committee co-chair name (Pedagogy Course 2)

proposed course

Brief description of why this course was selected:

Proposed committee member name (Connections course)

proposed course

Brief description of why this course was selected:

Graduate advisor name/signature/date

Chair Graduate Operations Committee name/signature/date