MATHEMATICS, MAT

Department of Mathematics and Statistical Sciences, College of Arts & Sciences

Vision Statement

The Master of Arts for Teachers of Mathematics degree is ideal for:

- Current high school teachers who are planning on teaching advanced secondary mathematics such as Dual-Enrollment calculus at their high school.
- Any student interested in teaching freshman/sophomore level mathematics courses at local universities.
- Any student interested in pursuing a PhD in education with an emphasis in mathematics.

NOTE: This program does not help a student get a state certification to teach high school math. For those students with an undergraduate degrees already interested in pursuing a degree to teach high school math, but do not yet have a state certification to teach, consider the Teacher Academy Project (http://www.unomaha.edu/college-of-education/moec/projects/teacher-academy-project/).

Program Contact Information

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Program Website (http://www.unomaha.edu/college-of-arts-and-sciences/mathematics/)

Other Program-Related Information
Graduate Assistantships

The Department of Mathematics and Statistical Sciences annually awards a few graduate assistantships for work within the department. These positions pay an annual stipend plus a waiver of tuition. For the details of the nature of the work, please contact the graduate chair, Andrew Swift, aswift@unomaha.edu

Teachers of Mathematics Scholarship

The Teacher of Mathematics Scholarship is awarded to teachers of high school mathematics who are interested in obtaining a graduate degree in mathematics (MS, MA, or MAT) at UNO for the purpose of becoming eligible to teach UNO calculus dual enrollment courses. These scholarships are awarded to teachers in school districts that are participating in the Dual Enrollment program. They will provide for the reimbursement of resident tuition for up to six graduate credit hours per semester for one year. No scholarship award becomes final until UNO graduate admission status is obtained. Continuation beyond the first year depends upon satisfactory academic progress and funds available. For further information contact Dr. Janice Rech, jrech@unomaha.edu

Fast Track Program

The Department of Mathematics and Statistical Sciences has developed a Fast Track program for highly qualified and motivated students providing the opportunity to complete a bachelor's degree and a master's degree in an accelerated time frame. With Fast Track, students may count up to 9 graduate hours toward the completion of their undergraduate program as well as the graduate degree program.

Program Specifics:

- This program is available for undergraduate students pursuing a BA/BS in Mathematics or pursuing a double-major with BA/BS in Mathematics as the primary or secondary major desiring to pursue a MA/MS/MAT in Mathematics.
- Students must have completed no less than 60 undergraduate hours
- Students must have a minimum undergraduate GPA of 3.0.
- Students must complete the Fast Track Approval form, obtain all signatures, and submit to the Office of Graduate Studies prior to first enrollment in a graduate course.
- Students will work with their undergraduate advisor to register for the graduate courses.
- A minimum cumulative GPA of 3.0 is required for graduate coursework to remain in good academic standing.
- Students remain undergraduates until they meet all the requirements for the undergraduate degree and are eligible for all rights and privileges granted undergraduate status including financial aid.
- Near the end of the undergraduate program, formal application to the graduate program is required. The application fee will be waived, the applicant will need to contact the Office of Graduate Studies for a fee waiver code.
    - Admission to Fast Track does NOT guarantee admission to the graduate program.
    - The admit term must be after the completion term of the undergraduate degree.

Admissions

General Application Requirements and Admission Criteria (http://catalog.unomaha.edu/graduate/admission/)

Program-Specific Requirements
Application Deadlines (Spring 2024, Summer 2024, and Fall 2024)

Applications for this program are accepted on a rolling basis. All materials must be submitted prior to the beginning of the semester in which the student has elected to begin coursework.

Other Requirements

- Have obtained at least a "B" (3.0 on a 4.0 scale) average in previous mathematics courses, including two courses beyond elementary calculus.
- Hold state certification for teaching secondary school mathematics
- **English Language Proficiency:** Applicants are required to have a command of oral and written English. Those who do not hold a baccalaureate or other advanced degree from the U.S., **OR** a baccalaureate or other advanced degree from a predetermined country on the waiver list (https://www.unomaha.edu/graduate-studies/prospective-students/Proof%20of%20English%20Proficiency-%20International.pdf), must meet the minimum language proficiency score requirement in order to be considered for admission.
    - Internet-based TOEFL: 80, IELTS: 6.5, PTE: 53, Duolingo: 110

Degree Requirements

Code	Title	Credits
Required Courses		
Complete the Mathematics for Teachers sequence:		
MTCH 8020	MATHEMATICAL MODELING FOR SECONDARY TEACHERS	3
MTCH 8030	ALGEBRA FOR ALGEBRA TEACHERS	3
MTCH 8040	TOPICS IN MATHEMATICAL COMPUTING	3
Education Courses		
Graduate only courses TED 8xx0 to be selected in consultation with your advisor		9
Mathematic Sequences		

Complete two advisor approved Mathematics (not MTCH) sequence of courses (total of 18 hours). Each sequence must consist of three connected courses (as defined by the MAT advisors). [1]	18
Total Credits	**36**

[1] For example: Applied Modern Algebra, Algebra 1, and Algebra 2. If one of the courses has been taken previously as an undergraduate the course will not count toward the 36 credits, however it will count in terms of completed the three course sequence. Such a situation would in effect enable the MAT student to finish the three course sequence quicker and free up one class for an elective in mathematics.

Exit Requirements

- ### Comprehensive Examination
  - Pass the mathematics comprehensive examination. The examination is offered three times a year; on April 15, July 15, and November 15th (or the proceeding Friday if any of these dates falls on a weekend). The mathematics exam is three hours in length and covers the terminal course of each of the two math sequence of courses. Each course instructor will write a 1.5 hour exam and grade the exam as pass or fail. To pass the overall MAT mathematics portion comprehensive exam, the student must pass both.

MTCH 8010 STATISTICAL RESEARCH FOR MATHEMATICS TEACHERS (3 credits)
This course is designed for graduate students in the MAT program who select the statistics option to complete their degree. The student will do a literature review, design a study involving mathematics education, gather and analyze the data, and prepare a manuscript for submission to a refereed journal. (The course will not count toward a major in the MA or MS program.) To prepare for the course, interested students should contact the instructor of the course several months before (8 is the norm) to have time to do the groundwork for the study.
Prerequisite(s): STAT 8015 and TED 8010.

MTCH 8020 MATHEMATICAL MODELING FOR SECONDARY TEACHERS (3 credits)
This course will examine the mathematics underlying several problem situations found in a variety of societal settings. Mathematical models of problems in current literature will be examined and other models will be constructed based on data collected through course activities. Topics relevant to these problems will include function analysis, algebra, geometry, trigonometry and probability and statistics. The role of mathematics in society will be evidenced as problems considered will be timely and sources utilized will include original documentation whenever possible (i.e. recent research reports, government reports and publications).

MTCH 8030 ALGEBRA FOR ALGEBRA TEACHERS (3 credits)
This course will use study interesting mathematical systems related to key algebraic ideas and study habits of mind that are key to effective problem solving. The properties about numbers and operations discovered will connect to the same properties taught in school algebraic course. Special attention will be paid to linear, quadratic, exponential, and logarithmic, polynomial functions in connection to their importance in school algebra.
Prerequisite(s): Admission to the Graduate Program

MTCH 8040 TOPICS IN MATHEMATICAL COMPUTING (3 credits)
This course focuses on the current state-of-the-art technology that is either designed for or is uniquely suitable for teaching mathematics. (Cross-listed with STEM 8040)
Prerequisite(s): MATH 2200 or equivalent or approval of instructor.

MTCH 8880 ADVANCED PLACEMENT INSTITUTE: CALCULUS (3 credits)
A workshop for teachers planning to offer an advanced placement course in calculus. Objectives include increasing teacher competencies in single-variable calculus, discussion and study of AP calculus exams, implementations of AP courses in calculus, and development and presentation of projects for graduate credit. (This course will not count toward the M.A. or M.S. degrees in Mathematics, or the Secondary Mathematics Specialist Graduate Certificate.)
Prerequisite(s): Graduate in mathematics or mathematics education.