

Teaching and Learning, MAT

Mathematics Education

The Master of Arts in Teaching in teaching and learning with a mathematics education subprogram requires a minimum of 52 s.h. of graduate credit with a Graduate College program grade-point average (GPA) of at least 3.00 for graduation. Admission to the MAT requires admission to the Teacher Education Program (TEP), and students must maintain TEP academic and professional standards.

The program is designed primarily for students who decide they would like to become teachers and have already completed a BS or BA in mathematics. It features advanced work in mathematics along with the courses required for licensure as a teacher of mathematics in secondary schools. It is assumed that students have completed a baccalaureate degree in mathematics equivalent to one that would be completed at the University of Iowa but have no previous coursework in education. More coursework may be required if there are mathematics courses a student has not taken as part of the undergraduate mathematics baccalaureate degree program to render the student's degree equivalent to one from the University of Iowa.

Students may need to complete additional courses or other requirements to meet state standards for teacher preparation, licensure, or endorsements.

The MAT in teaching and learning with a mathematics education subprogram requires the following work.

Education

| Course # | Title | Hours |
|--|--|-------|
| The first three courses should be taken during the first semester of registration: | | |
| EDTL:3002 | Teaching and Learning Technologies | 2 |
| EDTL:3091 | Secondary Education Program Orientation and Classroom Management | 3 |
| EDTL:3095 | Teaching Reading in Secondary Content Areas | 1 |
| All of these: | | |
| EDTL:3532 | Introduction and Practicum: Mathematics | 3 |
| EDTL:3534 | Methods: Middle School Mathematics | 3 |
| EDTL:4535 | Methods: High School Mathematics | 3 |
| EDTL:4750 | Assessment in Science, Technology, Engineering, and Mathematics (STEM) | 2 |
| EDTL:4751 | Learning in the Science, Technology, Engineering, and Mathematics (STEM) Classroom | 2 |
| EDTL:4900 | Foundations of Special Education | 3 |
| EPLS:3000 | Foundations of Education | 3 |

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| EPLS:4180 | Human Relations for the Classroom Teacher | 3 |
| PSQF:6200 | Educational Psychology | 3 |
| One additional graduate-level mathematics education course in consultation with an advisor | | |
| The following courses are taken concurrently and constitute the student teaching semester: | | |
| EDTL:4087 | Seminar: Curriculum and Student Teaching | 3 |
| EDTL:4091 | Observation and Laboratory Practice in the Secondary School | 6 |
| EDTL:4092 | Observation and Laboratory Practice in the Secondary School | 6 |

Graduate Mathematics Requirements

| Course # | Title | Hours |
|------------------------|--------------------------------------|-------|
| At least one of these: | | |
| MATH:4050 | Introduction to Discrete Mathematics | 3 |
| MATH:4060 | Discrete Mathematical Models | 3 |
| MATH:4120 | History of Mathematics | 3 |

Endorsements

The mathematics education TEP is approved by the state of Iowa as preparation for teaching licensure with an endorsement for grades 5-12 mathematics. Added endorsement programs for additional teaching areas are available.

Final Examination

The final exam includes a required two-part exam in mathematics and mathematics education. At the discretion of the examining committee, this exam may consist of two parts and is both written and oral. The mathematics and mathematics education final examinations will not duplicate course examinations but will assess both mathematics education and the mathematics specialization area chosen by a student.

Teacher Education Program Academic and Professional Standards

State of Iowa teacher preparation standards require that teacher candidates demonstrate the content, pedagogical, and professional knowledge, skills, and dispositions necessary to help all students learn. Because of this, the College of Education and the Teacher Education Program have established academic and professional standards that students must maintain. For graduate-level teacher candidates and MAT candidates in mathematics education, these standards include:

- a UI minimum cumulative GPA of 2.75 on A-F graded graduate courses (consistent with the academic standing policy of the Graduate College);
- a minimum TEP major GPA of 2.00 (2.70 for good standing);

- a minimum UI term GPA of 1.50 during fall or spring enrollment;
- a grade of C-minus or higher in TEP major courses; and
- no notices of concern in professional dispositional qualities.

Liberal Arts Core

State of Iowa teacher preparation standards require a core of liberal arts knowledge including but not limited to English composition, mathematics, natural sciences, social sciences, and humanities. Students who have not completed these requirements with their previous coursework will need additional coursework. Bachelor's degree graduates of the College of Education or the College of Liberal Arts and Sciences have met these requirements with the GE CLAS Core if a course in mathematics, statistics, or computer science was selected for the Quantitative and Formal Reasoning requirement. For additional information about these standards, contact the Office of Student Services.

Admission

Applicants must meet the admission requirements of the Graduate College. They must also meet all Teacher Education Program (TEP) application requirements. Candidates should have completed a baccalaureate degree program in mathematics equivalent to that which is offered through the College of Liberal Arts and Sciences at the University of Iowa. An undergraduate GPA of at least 3.00 is required for admission and must be maintained throughout the enrollment period.

Combined Program

BA in Mathematics/MAT (Undergraduate to Graduate-U2G)

The College of Liberal Arts and Sciences and the College of Education offer students the opportunity to earn their Bachelor of Arts in Mathematics/Master of Arts in Teaching degree in education with a mathematics education subprogram in as little as five years.

The combined BA/MAT U2G program is a seamless process whereby students can progress from undergraduate to graduate status. The usual period of study for both the Bachelor of Arts and the Master of Arts in Teaching degree is six years. Through careful planning, many of the courses required for the MAT program can be taken during the undergraduate years, creating an opportunity to focus the fifth year of study on the comprehensive and student teaching requirements.

Admission to Combined Program

Students are eligible to apply to the U2G program during their sophomore or junior year if they have a cumulative GPA of at least 3.25 or if they meet special considerations. Application materials must include a completed application to the Teacher Education Program (TEP), two recommendations from University of Iowa faculty, a career plan describing how this program will enhance the student's scholarly and or career goals, and an unofficial transcript of the student's prior work.

Students who submit completed applications will be notified within 30 days if they have been accepted into the program. The program accepts a limited number of students each year on a competitive basis. Once accepted into the program,

a student meets with an advisor to select an advisory committee to plan a course of study.

During the sixth semester, a student in the program who has completed 80 s.h. of undergraduate work and maintained a 3.00 minimum GPA must apply to the Graduate College. Application to the Graduate College must include a completed Graduate College application form, a letter of application/statement of purpose, one additional letter of recommendation from a faculty member in the mathematics major, and Test of English as a Foreign Language (TOEFL) test scores for international students.

Students are granted undergraduate/graduate credit for coursework during the fourth year; they begin paying graduate tuition during the fifth year until completion of the program. The baccalaureate degree must be conferred at the end of the eighth semester or in the program's fourth year.