

Student Learning Outcomes

Master's Degree in Mathematics for the Middle Grades (4-8) Program

Student Outcomes and Competencies

Each of the outcomes of the program is listed below with the related student competencies:

Outcome 1: To focus on the professional development of teachers as *professionals committed to students and their learning (professionals with a growing vision for teaching, for mathematics and for teaching mathematics to children)*.

- Competency 1.1: implement innovative curriculum materials and use new approaches to teaching mathematics
- Competency 1.2: teacher adjusts their practice based on observation and knowledge of their students
- Competency 1.3: demonstrate understanding of the major ideas of mathematics, including an historical and social perspective on how mathematics is created, organized, linked to other disciplines and applied to real-world settings
- Competency 1.4: demonstrate evidence of continued attention to curriculum and instructional issues based on their individual and district planning
- Competency 1.5: study the teaching and learning of mathematics

Outcome 2: To focus on the professional development of teachers as *professionals that know the subjects they teach and how to teach mathematics to students (are lifelong students of teaching and learning)*.

- Competency 2.1: teacher reflects on the changes taking place in their mathematics classroom
- Competency 2.2: demonstrates a rich understanding of mathematics appropriate for middle grades mathematics teaching
- Competency 2.3: become aware of the preconceptions and background knowledge students typically bring to mathematics and of strategies and innovative materials that can be of assistance in reshaping student understanding

Outcome 3: To focus on the professional development of teachers who are *responsible for managing and monitoring student learning (reflective practitioners)*.

- Competency 3.1: create, enrich, maintain and alter instructional settings so to make effective use of time and student interests

- Competency 3.2: become adept at engaging students and adults to assist in their teaching and at enlisting members of the faculty and their cohorts' knowledge and expertise to complement their own
- Competency 3.3: engage groups of students to ensure a disciplined learning environment and how to organize instruction that aids in the establishment of setting norms for social interaction

Outcome 4: To focus on the professional development of teachers so that *teachers think systematically about their practice and learn from experience.*

- Competency 4.1: aid their students in the ability to reason and take multiple perspectives to be creative and take risks, and to adopt an experimental and problem-solving orientation
- Competency 4.2: draw on knowledge of human development, subject matter and instruction and their understanding of their students to make principled judgments about sound practice
- Competency 4.3: strive to strengthen their teaching, critically examine their practice and adapt their teaching to new findings, ideas and theories

Outcome 5: To focus on the professional development of teachers as *members of a learning community (leaders and contributors to mathematics education).*

- Competency 5.1: demonstrate knowledge about current issues related to mathematics curriculum and instruction
- Competency 5.2: demonstrate understanding of the National Council of Teachers of Mathematics (NCTM) vision of mathematics curriculum, instruction, and assessment as described in the *NCTM Standards*
- Competency 5.3: assume leadership roles for mathematics curriculum and instruction in their district and/or AEA
- Competency 5.4: share ideas and expertise by speaking at conferences, presenting workshops and promoting reform in mathematics classrooms
- Competency 5.5: become an active participant in professional organizations related to teaching mathematics