

Marshall University
College of Science

MTH 404: Mathematics Methods and Materials

Course catalog description

Content and content-specific pedagogy for secondary mathematics education majors.

Credit hours

3 hours

Prerequisites

A grade of C or higher in CI470, and admission to Teacher ED 5.

List of topics

Course objectives

- Provide opportunities for prospective secondary mathematics teachers to explore mathematical concepts with a range of pedagogical strategies including manipulatives, problem solving strategies, real world applications, collaborative group work, and technology.
- Help coordinate students efforts to write lesson and unit plans that include both the rich concept development described in the first objective and appropriate assessment.
- Provide opportunities for students to examine and use the NCTM Curriculum and Evaluation Standards, the West Virginia Content Standards and Objectives, and the Common Core State Standards for Mathematics.
- Prepare students to mathematically model situations and creatively solve problems for which they may never have seen examples and be able to pass such strategies on to their own students through tasks that support students with different learning styles and experiences.
- Prepare students to decide when and what technology is appropriate to solve a problem and to present a topic.
- Provide opportunities for students to communicate mathematical ideas in written and oral forms and to prepare lessons that utilize

writing and oral communication to understand mathematical concepts.

- Provide opportunities for students to read and interpret mathematical ideas independently and to design effective reading assignments.
- Provide tasks that help students see the connections between the mathematics they have learned in their own classes and the mathematics they will teach.
- Provide opportunities for students to examine and reflect on their own attitudes and beliefs about mathematics and the learning of mathematics and their roles as professionals.

Suggested textbooks

- Huetinck and Munshin, *Teaching Mathematics for the 21st Century; Methods and Activities for Grades 6 - 12*, third edition.

Last updated

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