

Math 215 -- Mathematics for Middle School Teachers

Schedule: Fall, Spring, and Summer, 3 semester hours

Course description: Integers, rationals, irrationals, decimals, real and complex number systems. Properties of numbers. Number theory. Proportional reasoning. Percents. Relations and functions. Algebra. Set theory. Tables and graphs. Open only to education majors.

Prerequisite: satisfactory placement exam score.

Required texts: Beckmann, S. (2005). Mathematics for Elementary Teachers. Addison-Wesley.
Beckmann, S. (2005). Activities Manual for Elementary Teachers. Addison-Wesley.
(Chapters 1 – 7, 12, 13)

Required materials: scientific calculator (or graphing calculator)

General comments: The focus of Math 215 is number. We'll study numbers and their representations, compositions of numbers, the need for different types of numbers, the meanings of arithmetic operations, algorithms for operations, and algebraic thinking. An important theme in Math 215 is the search for and description of patterns as a problem-solving tool. This course is not a summary/review of middle school mathematics: instead, we'll consider the mathematics which people should know to be successful teachers of middle school students.

Research shows that students in mathematics classrooms experience more success when a variety of approaches are used to study mathematics. In Math 215, we'll explore mathematics concepts with group activities, discussions, interactive lectures, and writing assignments. In this class, it isn't possible to sit passively while you are told what you need to know. You will need to be actively thinking about mathematics and be prepared to explain these thoughts to your small group and to the class.

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