

Additional Information Regarding MAT 140 and MAT 141 *Mathematics for Elementary and Middle School Teachers*

MAT 140 and MAT 141 form a two-course sequence in mathematics designed for students who intend to be certified elementary school teachers or middle school mathematics teachers. The mathematical topics discussed in these courses are chosen based upon the *Principles and Standards for School Mathematics* published by the National Council of Teachers of Mathematics (NCTM) in 2000. Knowledge of these topics is required for Kentucky teacher certification.

Prerequisites

The prerequisite for MAT 140 is Mathematics ACTE score of 20 or higher, OR Mathematics ACTE score of 19 and a grade of C or better in MAH 091 OR Mathematics ACTE score of below 19 and a grade of C or better in MAHD 095 and a grade of C or better in MAH 091. Mastery is generally indicated by a grade of B or better in each. MAT 140 is the prerequisite for MAT 141. Instructors will, to the best of their ability, check prerequisites for students enrolled in these courses. Students who do not have the prerequisites for MAT 140 or MAT 141 will be withdrawn from the course when the lack of prerequisite is discovered.

Type of Course

Although your instructor will use some manipulative and other visual aids, neither MAT 140 nor MAT 141 is a course in teaching methods. MAT 140 and MAT 141 courses are taught by mathematics faculty, the goal of the sequence is to provide students with the mathematical skills and ideas necessary for teaching elementary or middle school mathematics. The emphasis of MAT 140 and MAT 141 is problem solving. Students who complete the MAT 140-141 sequence with a grade of at least C- in each have the mathematical prerequisites to enroll in EDU 306 *Teaching Elementary School Mathematics* or EDU 347 *Teaching Mathematics in Middle-Grades*.

Topics

The topics in MAT 140 are algorithms, number systems, and number theory. The topics in MAT 141 are elements of geometry and algebra. You may have seen much of this material in other mathematics courses. That, of course, does not mean that you have mastered the material. Knowledge of facts and mathematical manipulative skills is not enough for you to be a competent teacher of mathematics. You need, in addition, to understand why mathematical techniques work, to know several ways to solve some problems, to be able to explain mathematics, to be able to apply mathematical thinking and modeling, to solve problems from other disciplines, and to be able to communicate mathematics by writing. Even if you have seen some of the material in these courses before, do not assume that you already know it well enough. Do your homework (as you intend to have your students do the homework you will assign). Ask questions until you understand and are able to explain each topic (so that you will be able to answer your students' questions). Learn "Why" and "How" not just facts. Your instructor's goal is to help you acquire the mathematical knowledge necessary for you to be a good teacher of mathematics.

Advance Standing Examinations

It is possible that exceptionally well-qualified students have mastered the material in these courses. Generally, such students have already taken several college-level mathematics courses. If you believe that you have mastered the material in MAT 140 or MAT 141, you may contact your instructor regarding taking an advanced standing examination.