What are the course objectives? (1) to discuss in depth some of the subject matter of the elementary school mathematics curriculum, including problem solving, patterns, sets, logic, the natural numbers, integers, fractions, decimals, percents, irrational numbers, the arithmetic operations on these types of numbers, and applications (other important topics, including probability, statistics, and geometry, are covered in MTE 211); (2) to develop the students' confidence in, facility with, understanding of, and insight into mathematics, by dealing with the material at a mature, challenging, and innovative level; (3) to develop the students' abilities to solve mathematics problems, communicate mathematics, and apply mathematical ideas and techniques in a variety of situations; (4) to overcome negative attitudes the students have about mathematics and help them value and appreciate the subject and find it exciting and interesting; and (5) to deal with pedagogical issues as they relate to content issues, including learning about current standards in mathematics education.

What skills and knowledge are crucial for success in the course (these are expected to have been developed in prerequisite courses)? The prerequisite skills (although these are also developed more fully in the course itself) are a good facility with arithmetic, the ability to use a calculator correctly and efficiently, and facility with algebra as indicated by the formal (Intermediate Algebra) prerequisite (although algebra is not used very much in the course). Prerequisite knowledge includes some exposure to functions, the multiplicative structure of the natural numbers, and a little set theory. The prerequisite attitudes for this course are intellectual curiosity, an interest in mathematics, a willingness to learn new ideas and ways of looking at things, and a willingness to take risks, make mistakes, and change one's mind about what one has learned before.

What skills and knowledge will the student acquire after successfully completing the course? The student will have more skill and knowledge about the various subjects covered in the course, but, more importantly, a deeper understanding of mathematics and its processes, and a much more vibrant attitude toward the subject. The successful student will be well-prepared for subsequent courses (EED 302, MTE 211, MTE 318, MTE 405, and MTE 410) and will be well prepared (after taking some subsequent mathematics and mathematics education courses) to be an effective and stimulating teacher of mathematics to students in grades K–8.

How much work is required in this course? A lot. You are expected to come to every class (on time—latecomers are very disruptive), and to participate in the discussions. We discuss many things in class that are not covered in the textbook. You should also expect to spend at least 10 hours per week outside of class, working on homework, reading the textbooks, etc. Many students find it helpful to form study groups.

How can I get my questions answered? Rather than posting formal office hours, my policy is that I am usually around most of every day. Students are my top priority, so feel free to drop in. You can always make a definite appointment if you wish. Please contact me by telephone or e-mail any time you have a question outside of class. Everyone should come for help at least once. You will find one-on-one sessions very valuable. Do not be intimidated; I am here to help, even if I seem demanding. And please ask questions in class!
What about that website? A lot of course information can be found on a website devoted to the course: special announcements; a lengthy statement about my feelings about this course; the complete list of homework assignments; an analysis of class performance on quizzes and tests; extra credit possibilities; textbook errata; sample tests; external links relevant to this course; and more. You should consult the course’s website often. Please send me e-mail the first time you view the page. You can access the site through Moodle, or you can enter its URL directly into your browser: http://files.oakland.edu/users/grossman/web/MTE210

What little things does this instructor care about? Spelling and misuses of English and mathematics “count” in this course (i.e., you lose points for such mistakes). My pet English peeves include the misuse of apostrophes (know the difference between its and it’s), the misuse of i.e. (it does not mean “for example”), the misuse of cases of pronouns (e.g., “Come to dinner with my wife and I.” is just plain wrong), using lay as an intransitive verb (you lie down, not lay down, and a book is lying on the table, not laying there), and putting decimal points in monetary amounts expressed in cents rather than dollars (as in bananas on sale for .49¢ per pound—notice how often you see this travesty in stores). Particularly egregious mathematical misuses are putting equals signs between things that are not equal and leaving out needed parentheses. All of this relates to the important theme in this course of effective communication.

Can I get extra credit? Yes. See the website for details on the seven possibilities, including a “book report” on a popular mathematics book, a “journal report” on research articles, a report on a film or TV program dealing with mathematics, a report on your attendance at a mathematics education conference, surfing the Web for information relevant to this course, oral or written solution to various brain-teasers, and finding errors in the textbook, solutions manual, or things I prepare for the course. There are some limits, but it is possible to earn quite a number of extra points toward your final grade.

Will this be similar to other mathematics courses I’ve taken? Not in the least. You will find the course exciting; you will learn an awful lot of new mathematics and new ways of looking at mathematics that is already familiar to you; and you will have your entire attitude toward mathematics transformed. There will be much more of an emphasis on understanding, problem solving, communication, and exploration, and a lot less emphasis on learning to perform. The sooner you realize this, the better you’ll adjust to it and the more successful your experience will be. Success in MTE 210 (as well as effectiveness in your chosen profession) demands that you must put aside most of the preconceptions you have about mathematics, learning mathematics, teaching mathematics, and doing mathematical things. You must keep an open mind in this course, maintain an attitude of inquisitiveness and humility, realize how little you know and how much you have to learn, and be prepared to put in countless hours. To do any less is not fair to the children of the twenty-first century. Please read my essay on the course’s website for more about this.

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