

**BOROUGH OF MANHATTAN COMMUNITY COLLEGE**

City University of New York

**Department of Mathematics**

**Mathematics for Elementary Education I**

**MAT 214**

**Semester:**

**Credits 4**

**Class hours 4**

**Instructor Information:**

**Name:**

**Email:**

**Phone:**

**Office:**

**Course Description**

This course covers the first half of mathematics recommended by the NCTM for prospective elementary school teachers, including problem solving, numeration, computation, real numbers, and number theory. MAT 214 focuses on a learner-oriented approach to teaching mathematics. Emphasis is placed on mathematical concepts and skills, as well as techniques of inquiry and critical thinking. The course includes a survey of elementary mathematical concepts with appropriate materials to assist teachers in the classroom setting. MAT 214 meets the mathematics requirement for students who plan to teach on the elementary school level.

**Prerequisites/Co-requisites**

The student must have passed or been exempt from MAT 056, and all remedial reading, writing and ESL requirements.

**Student Learning Outcomes**

Upon successful completion of this course, students will be able to:

Mathematics Content:

- develop their knowledge of problem solving, sets, logic, numeration, mathematical systems, real numbers and number theory from the higher viewpoint needed to teach in elementary schools;
- develop the power to communicate mathematically through reading, writing, and discussing ideas which require the appropriate use of the language of mathematics.

Mathematics Pedagogy

- plan and use the most suitable approach (individualized instruction, cooperative learning, writing activities, etc.) for a required lesson;
- teach either small or large group lessons, develop challenging assignments, create an effective learning environment, allow children time to reflect, promote classroom discourse, make connections with other branches of mathematics or other subject areas, and improve children's attitudes toward mathematics;
- use alternative approaches in problem solving, appropriately use calculators and computers, and activities that promote children learning to value mathematics while developing confidence in their own mathematical ability;
- undertake the initial steps toward professional development through self evaluation and collegial interaction;
- use the most recent research and professional consensus about elementary mathematics education, and develop an inquiry-oriented and reflective attitude about the teaching process.

**Required Texts**

- *Mathematical Ideas* (Tenth Edition), Miller, Heeren and Hornsby; HarperCollins Publishers, New York, 2003. (The tutorial software for this text is available in the Math Computer Labs.)
- *Mathematics, A Good Beginning* (Sixth Edition), Troutman, Andria P. and Lichtenberg, Betty K, Brooks/Cole, California, 2003.

## **Other Resources**

### **Weblinks For Mathematics Reference, Review And Practice**

<http://hometown.aol.com/jlg1196>  
<http://themathpage.com/Index.html>  
<http://www.purplemath.com/modules/ordering.htm>  
<http://www2.guhsd.net/algebra2/#>  
<http://regentsprep.org/Regents/math/math-tips.cfm>  
<http://regentsprep.org/Regents/math/math-a.cfm>  
<http://regentsprep.org/Regents/mathb/mathb.cfm>

## **Use of Technology**

Mathematical Ideas (Tenth Edition), Miller, Heeren and Hornsby; HarperCollins Publishers, New York, 2003. The tutorial software will be used during class sessions in the Math Computer Lab.

## **Evaluation & Requirements of Students**

### **Grading**

The instructor will advise the student of the determination of the final grade. Students are required to attend all scheduled classes.

### **Outline of Topics**

Problem Solving  
Number Sense  
Sets  
Logic  
Numeration and Mathematical Systems  
Number Theory  
The Real Number System

### **College Attendance Policy**

At BMCC, the maximum number of absences is limited to one more hour than the number of hours a class meets in one week. For example, you may be enrolled in a three-hour class. In that class, you would be allowed 4 hours of absence (not 4 days). In the case of excessive absences, the instructor has the option to lower the grade or assign an F or WU grade.

### **Academic Adjustments for Students with Disabilities**

Students with disabilities who require reasonable accommodations or academic adjustments for this course must contact the Office of Services for Students with Disabilities. BMCC is committed to providing equal access to all programs and curricula to all students.

### **BMCC Policy on Plagiarism and Academic Integrity Statement**

Plagiarism is the presentation of someone else's ideas, words or artistic, scientific, or technical work as one's own creation. Using the idea or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism.

Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has guides designed to help students to appropriately identify a cited work. The full policy can be found on BMCC's web site, [www.bmcc.cuny.edu](http://www.bmcc.cuny.edu). For further information on integrity and behavior, please consult the college bulletin (also available online).