

**Instructor:** Dr. Talitha M. Washington

**Contact Info:** Office: KC 318; Phone: 488-2213; Email: tw65@evansville.edu

**Office Hours:** M 1-2:30; TTh 9-11, 1-2:30; F 1-2:30

**Required Texts:** *Mathematics for Elementary Teachers*, 8th Ed., Musser, Burger

**Course Website:** <http://acebb.evansville.edu>

**Course Description:** **MATH 202 Mathematics for Elementary Teachers (3):** Treats problem solving, the real number system, elementary number theory, geometric topics and others. For elementary education majors only. Prerequisite: Mathematics 101.

**Course Learning Objectives:** The goal is to provide an *understanding* of the mathematics necessary to teach at the elementary school rather than focus on mathematics teaching methods. The purpose of this course is to instruct students in ways of mathematical thinking beyond computation and to provide a broader view of mathematics by introducing a variety of uses within the topic framework. The general course goals are to help you:

- gain knowledge about the conceptual background which underlies the major mathematical themes found in the elementary school curriculum,
- develop an ability to communicate mathematical ideas clearly and effectively, both in writing and orally,
- develop ability to apply analytic skills to mathematical ideas and processes,
- develop an understanding of how mathematics applies to a wide array of different areas,
- develop critical thinking and problem solving skills, and
- develop an understanding of how to present the major concepts of this course to elementary school children for whom these concepts are developmentally appropriate.

**Methods of Instruction:** The method of instruction for most classes will be a lecture/discussion. Students are encouraged to participate in class by asking questions, contributing to discussions, and working problems. Outside of class, students are expected to read the text and complete all assigned homework.

**Grading:** The weights in determining your final grade are as follows:

- Active Participation – 4%
- Three Team Projects – 24%
- Three Exams (**Feb 5, Mar 5, Apr 14**) – 48%
- Comprehensive Final Exam (**Tues, May 4, 12:30 PM**) – 24%

Final grades will be assigned using the following percentages: A 90-100; B 80-89; C 70-79; D 60-69; F 0-59. However, I reserve the right to subjectively adjust your semester grade. Please see me if you have any questions about how you stand. All grades will be posted and updated regularly on *Blackboard*.

### **Course requirements and policies:**

**a. Calculators:** Calculators **will not** be allowed during exams. A scientific calculator is may be needed for homework, projects and in-class work (a TI calculator is recommended).

**b. Active Participation:** This includes attendance, contribution to team projects, and classroom participation. On most days attendance will be taken. However, if you miss a day, it is up to **you** (not me, or your classmates) to catch up and learn what you have missed.

**c. Team Projects:** The team projects will involve exploring mathematics that is taught in the elementary school. Project teams of 3-4 students will be formed at the beginning of the semester and will remain together for the remainder of the semester. Each project team is expected to meet regularly and each member is expected to contribute to the preparation of the projects. Guidelines for project reports will be given out at a later date. Through this collaborative learning experience, students will enhance their understanding and knowledge of mathematics that is taught in the elementary school.

**d. Make-ups:** Assignments that are to be completed outside of class will **not** be accepted late for any reason. Make-up exams will be given only in extreme circumstances that are documented university approved excused absences, and only if I am aware of the circumstances **prior** to the exam. In particular, make-ups will never be given to accommodate travel plans.

**e. Homework:** These will be assigned daily and are found on page 3. These problems are for your practice and will not be graded; HOWEVER, you should do all these problems and are responsible for knowing how to work them. Many questions on the exams will be strikingly similar to problems in the assignment.

**f. Submitted Work:** Take care in writing up your solutions for the homework assignments and exams. If critical steps in the solution of a problem are missing, expect to lose points. In general, be sure to show your work. All written solutions must be clear, concise and correct. Even if your solution is correct, expect to lose points if it is difficult to read and understand. This includes solutions that are confused, incomprehensible, unnecessarily complicated, verbose, illegible or incomplete.

**g. Honor Code:** It is expected that students are familiar with and will comply with the terms of the University's Academic Honor Code.

*I will neither give nor receive unauthorized aid, nor will I tolerate an environment which condones the use of unauthorized aid.*

Note that collaboration on homework is allowed and encouraged, but giving or receiving help of any kind on exams is strictly prohibited.

**h. Accessibility:** Please let me know immediately if you have a learning or physical disability requiring accommodation. For more information, contact the Office of Counseling and Health Education at 488-2663.

**i. Some advice:** You should expect to spend at least **6 hours** each week studying outside of class. Your study time should include reading the text and working on all homework problems. I recommend that you keep your notes, homework, exams, and class handouts **organized**. You will need these materials to prepare for the Final Exam and they may be useful to you in the future. That is, since many of you may teach mathematics in an elementary school, **strive for complete mastery and understanding**. Please do not hesitate to stop by my office, call me, or send me an email if you are having difficulty with any part of the course.

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## Schedule

Sets, Whole Numbers, and Numeration (2.1-2.3)

Whole Numbers: Operations, Properties and Computation (3.1-3.3, 4.1-4.3)

Number Theory (5.1-5.2)

Fractions (6.1-6.3)

Decimals, Ratio, Proportion, and Percent (7.1-7.4)

Integers (8.1-8.2)

Rational Numbers, Real Numbers, and Algebra (9.1-9.2)

Geometry (12.1-12.2)

Measurement (13.1-13.2)

*Have a great semester!*

## Homework

### Sets, Whole Numbers, and Numeration (2.1-2.3)

- Section 2.1 A #1, 2, 3, 5-10, 12, 15-18, 20, 21, 22, 24, 27, 28ac, 36, 37, 42, 43  
 Section 2.2 A #1, 2-14 all, 15, 18, 19  
 Section 2.3 A #1-7, 9, 11, 13-17 all, 20, 21, 25, 28, 29, 31

### Whole Numbers: Operations, Properties and Computation (3.1-3.3, 4.1-4.3)

- Section 3.1 A #1, 2, 3, 4, 6-15 all, 17, 19, 22  
 Section 3.2 A #1-12 all, 14, 18, 19, 20, 23, 25, 31, 33  
 Section 3.3 A #1-9 all, 11, 12, 14, 17, 21, 25  
 Section 4.1 A #1-7 all, 9-13 all, 18  
 Section 4.2 A #2-5 all, 7, 13, 16, 21-25 all, 30, 33, 35, 43, 46  
 Section 4.3 A #1-6 all, 8, 9, 11, 12, 13, 15, 17

Exam 1, Friday, February 5

### Number Theory (5.1-5.2)

- Section 5.1 A #2-7 all, 10-13 all, 19, 25, 32, 36, 48  
 Section 5.2 A #1, 3, 5, 6, 8, 9, 11, 12, 21, 32

### Fractions (6.1-6.3)

- Section 6.1 A #1-6 all, 8-12 all, 14, 16, 17, 19, 20, 21, 23, 24, 25, 31  
 Section 6.2 A #1, 4-8 all, 10, 11, 13, 17-20 all, 22, 32  
 Section 6.3 A #1-5 all, 7, 9, 10, 13, 15, 16, 17, 24, 26, 28, 30, 31, 34, 35

Exam 2, Friday, March 5

### Decimals, Ratio, Proportion, and Percent (7.1-7.4)

- Section 7.1 A #1-8 all, 10, 12, 13, 14, 17  
 Section 7.2 A #1, 2, 4-9 all, 11, 12, 13, 15, 19, 20, 27, 28, 29, 30  
 Section 7.3 A #1, 3-7 all, 9, 11-15 all, 17, 21, 27, 31  
 Section 7.4 A #1-5 all, 7, 9, 15, 17, 20-23 all, 26, 27, 29, 31, 32, 34, 40, 45

### Integers (8.1-8.2)

- Section 8.1 A #1, 3, 4, 5, 7, 8, 9, 11, 13-19 all, 25  
 Section 8.2 A #1-4 all, 6, 7, 8, 11, 12, 13, 16, 18, 20-23 all, 28, 33, 37

### Rational Numbers, Real Numbers, and Algebra (9.1, 9.2)

- Section 9.1 A #1-11 all, 14, 16, 18, 19, 20  
 Section 9.2 A #1, 2, 6, 8, 9, 11, 12, 13, 18, 19, 23-26 all, 32, 33, 39, 40, 41

Exam 3, Wednesday, April 14

### Geometry (12.1-12.2)

- Section 12.1 A #1-4 all, 6, 11, 12, 14, 21  
 Section 12.2 A #1-4 all, 11

### Measurement (13.1-13.2)

- Section 13.1 A #3-8 all, 10, 11, 17, 33  
 Section 13.2 A #7abc, 8, 11, 13, 19, 20, 21, 23, 37, 38, 45

Final Exam, Tuesday, May 4, 12:30 PM

*One must learn by doing the thing. For though you think you know it, you have no certainty until you try.*  
 -- Sophocles