

**Mathematics 67-211 (3 credits)**  
**Foundations of Geometry and Measurement**  
**Spring 2014**

**Instructor:** Dr. Amy Parrott

**Office:** 223 Swart;     **Phone:** 424-2305;     **E-mail:** [parrotta@uwosh.edu](mailto:parrotta@uwosh.edu)

**Prerequisite:** A minimum grade of C in 67-110 (Number Systems) is required.

**Textbook:** Szydluk, J. and C. Seaman (2010). *Big Ideas in Mathematics for Future Elementary Teachers: Big Ideas in Geometry and Measurement*. This text is available at the University Bookstore.

**Course Materials Needed:** In addition to your textbook, you will need a ruler, a compass, a protractor, tape, scissors, stapler, colored pens or pencils, graph paper, and a basic calculator (no scientific, graphing, or cell phone calculators). Some students have found that tracing paper is also helpful.

**Office Hours:** Monday, Wednesday and Friday 11:30-12:30. I encourage you to stop by my office whenever you have questions about the material covered in class or a current assignment. You may also stop by if you just want to chat about mathematics and/or education or anything else on your mind. I am happy to meet with you during other times if these do not work with your schedule. Please see me after class or send me an e-mail to schedule a time. In addition, the Swart Math Lab has free, drop-in, peer tutors there to help you.

**Course Objectives:** This course is designed to give you an experience in thinking mathematically. This means that you will solve problems, make conjectures, make arguments, and communicate your findings and ideas. It will also provide you the opportunity to make sense of the mathematical thinking of others (great practice for a teacher!). The content of the course includes mathematical ideas that underlie the elementary school curriculum. This class is designed to 1) help you to understand the big ideas in Euclidean Geometry; 2) help you to understand childrens' thinking in the domains of geometry and measurement; 3) make you an experienced problem-solver; and 4) give you a profound appreciation for mathematics.

**Course Outline:**

**Unit 1:** Seeing the world geometrically

**Unit 2:** Measurement in the plane

**Unit 3:** The third dimension

**Unit 4:** Transformations, tessellations and symmetries

**Format and Attendance Policy:** Most class time will be spent solving interesting problems in small groups and discussing problem solving ideas and solutions as a class. Sometimes you will be asked to write up those ideas and solutions for me. Sometimes we will just discuss them. But **always** you are expected to think about the problems, participate in their solutions, and communicate your ideas with others. This format gives you the opportunity to practice skills you will need to be a teacher: listening and making sense of other people's mathematical ideas; explaining your ideas to others (both orally and in writing); understanding that people think about problems in many ways; and learning to help others understand mathematical ideas. Because it is so important for your own learning and the learning of your fellow classmates, I expect that you will attend and fully participate in class. If you must miss class for any reason, it is your responsibility to inform me prior to the absence, when possible, and to understand the material that you missed due to your absence. Your course grade may suffer if you miss too many class periods.

**Grading:** Your grade in this course will be based on:

- **Written Work (30%):** written work includes problem write-ups, peer critiques of problem write-ups, quizzes and possibly group projects. There will be approximately four problem write-ups and each will be submitted for peer review. Problem write-ups are expected to be typed (you may hand draw diagrams or write mathematics in ink), stapled and should communicate not only your solution, but your understanding of the problem solving process that led to the solution. Specific instructions will be included with each assignment to help you in this process.
- **Daily homework (5%):** this is scored in class on the date it is due. Each homework will receive 0 - 5 points. (5 points complete/full attempt, 3 point halfway complete/not full attempt, 0 points not done or absent) If you are absent on a day homework is graded or do not receive full credit for your homework, it is your responsibility to show me your completed work, which will earn you up to 4 points. The lowest two scores on your homework will be dropped.
- **Participation (5%):** class participation includes, but is not limited to: actively contributing to small group discussions, asking and answering questions during small and large group discussions, and presenting solutions at the board. In order for you to earn full participation points, I expect you to actively participate in all of these areas.
- **Three in-class exams (20% each):** the exams will take place after the completion of Unit 1, Unit 2 and Units 3/4.

The grading scale will be no stricter than:

A: 93 - 100 %	A-: 90 - 92 %	B+: 88 - 89 %
B: 83 - 87 %	B-: 80 - 82 %	C+: 78 - 79 %
C: 73 - 77 %	C-: 70 - 72 %	D+: 68 - 69 %
D: 63 - 67 %	D-: 60 - 62 %	F: 0 - 60 %

**Academic Honesty Policy:** Cheating on an exam, plagiarizing or any other form of academic dishonesty will be dealt in accordance with the current UWO Student Discipline Code. The instructor reserves the right to assign a grade of “F” for the course should circumstances warrant.