

Geometry and Measurement for Elementary Teachers: MATH 350-02 Course Policies 12:30-1:45 TR - Hanna 238B

I. Contact Information

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Office Hours: In Hanna 144: Mon. 9:30-10:30, Wed. 9:30-10:30
In Airway 207 (MRC): Thu. 9:30-11:00, Fri. 10:00-11:30
Others available by appointment

II. Course Prerequisites/Corequisites

A grade of "C" or better in Math 110/111, Math 250, Math 251 and Math 252

III. Course Description

A survey of Euclidean geometry and measurement which are an integral part of the elementary school mathematics curriculum. This course is for elementary education majors ONLY and does not count towards secondary mathematics certification.

IV. Course Objectives and Outcomes

This course places an emphasis on the processes of problem solving, reasoning and proof, connections, communications, and representation by using discussion, modeling, manipulatives, cooperative learning, and technology. The sequence of courses which includes College Algebra, Mathematics 250, Mathematics 251, and Mathematics 252 presents goals in the mathematical content areas of number and operations, algebra, geometry and measurement, and data analysis and probability. Taken together, the Standards describe the basic skills and understandings that students will need to function effectively in the 21st Century. *See p. 5 of the syllabus for all Louisiana GLEs to be covered in this course.*

V. Course Topics

- A. Simple Euclidean geometry.
- B. Planes, lines, curves, angles.
- C. Polygons, circles, prisms, pyramids and Euler's formula.
- D. Tessellations and tilings.
- E. Elementary motions and transformations.
- F. Similarity and congruence.
- G. Explorations with standard and non-standard units of measurement.
- H. Real world applications of perimeter, area, and volume.
- I. Area on geoboards as well as Pick's rule.
- J. Basic constructions and reflectional and rotational symmetry.

VI. Instructional Methods and Activities

- A. On-line Experiences - using the Internet to explore virtual versions of hands-on manipulatives used in class.
- B. Required readings of research literature and participation in the discussion of such articles.
- C. Independent learning activities.
- D. Problem solving and discovery learning using manipulatives and exploring different websites that use the virtual versions of these manipulatives.

VII. Evaluation and Grade Assignment

A. Methods:

1. 3 exams plus the comprehensive final exam. These exams will include questions concerning the course content and questions concerning the methods used to teach the course content.
2. Critiques of articles from primary curriculum literature.
3. Demonstrations utilizing hands-on manipulatives and virtual versions of these manipulatives.
4. Projects and presentations.

B. Grading Scale:

A: 90% - 100% B: 80% - 89% C: 70% - 79% D: 60% - 69% F: below 60%

Daily Grade: quizzes, projects, assignments, etc.	15%
3 Exams (20% each)	60%
Comprehensive Final Exam Thursday, May 7, 2009 from 10:00-11:50	25%

VIII. Class Policies and Procedures

At a minimum, all policies stated in the current *ULM Student Policy Manual & Organizational Handbook* should be followed (see <http://www.ulm.edu/studentpolicy/>). Additional class policies include:

A. Textbook and Materials:

- ◆ **TEXTBOOK:** *Mathematics for Elementary Teachers a Conceptual Approach* by Albert B. Bennett, Jr. and L. Ted Nelson.
- ◆ **WORKBOOK:** *Mathematics for Elementary Teachers an Activity Approach* by Albert B. Bennett, Jr. and L. Ted Nelson.
- ◆ **MATERIALS:** ruler (with both metric and US standard measurements), safety compass, protractor, simple scientific calculator (TI30II XS), 3-ring binder with paper, small pack of sheet protectors for small projects, pocket folder for turning in assignments, scissors, colored pencils, glue sticks, tape, small stapler, pack of multi-colored construction paper, sandwich bags and gallon-sized Ziplock bags to hold manipulatives, and a Flash drive 128Mb or larger for storing data files and documents.
(Additional materials may be needed for specific activities and projects during the semester.)

B. Attendance Policy:

Classroom attendance is an essential component of every mathematics course. Each student is responsible for any assignments or material covered in class whether or not the student is present. If a student misses class, he/she should get the day's assignment and any other announcements from Moodle (link found at www.ulm.edu). In accordance with University policy, the instructor will take attendance every day the class meets. It is the student's responsibility to ensure that his/her attendance is recorded. Excessive absences (10% of the total number of class meetings) will be reported to the student's dean. Any student who accumulates total absences in excess of 25% of the class meetings must either withdraw from the course or receive a failing grade.

The guidelines for excused absences may be found in the current ULM catalog. **THE STUDENT MUST PROVIDE A COPY OF DOCUMENTATION** (doctor's excuse, etc.) **FOR AN EXCUSED ABSENCE.** It must be presented **FOR THE INSTRUCTOR TO KEEP**, and the student will be asked to show the original when presenting the copy. Excuses with corrections, white-out, etc. will not be accepted. The instructor will confirm suspicious and habitual excused absences.

Students are expected to be **ON TIME** and stay for the **ENTIRE** class period. If a student comes to class late, it is his/her responsibility to notify the instructor after class. After the second "tardy", any future "tardy" may be considered an unexcused absence. Anyone more than 15 minutes late without prior approval from the instructor will be considered absent. In addition, leaving class early without the instructor's approval is not tolerated, and it may result in an unexcused absence.

C. Make-up Policy:

All missed tests, quizzes, and collected worksheets/homework assignments will be recorded as a 0 score. **Only** students providing documentation, as specified below, of an excused absence will be able to replace their 0 test score. Any documentation should be presented to the instructor as soon as the student returns to class (in accordance with the current ULM catalog). If this is the case, the instructor will either give a make-up test or substitute the percentage earned on the final exam for the missing test grade (*instructor's choice*). Make-ups will be given at the instructor's convenience, possibly as late as the day of the final exam. Quizzes, worksheets, projects and collected homework assignments cannot be made up or turned in late unless otherwise specified by the instructor.

UNIVERSITY EXCUSED ABSENCES: Anyone with a university excuse should present the instructor with documentation of the missed class. Since you'll know ahead of time that you will be absent, you **MUST** make arrangements with the instructor **BEFORE** you leave to make up any tests that you miss.

D. Academic Integrity:

Cheating of any kind will not be tolerated. Anyone cheating in any manner will receive a grade of zero (0) on all involved work and could be removed from the course and possibly from the university. Please refer to the university's policy on academic dishonesty at the website www.ulm.edu/studentpolicy.

E. Course Evaluation Policy:

At a minimum, students are expected to complete the on-line course evaluation.

F. Student Services:

Information about ULM student services, such as Student Success Center (<http://www.ulm.edu/cass/>), Counseling Center (<http://www.ulm.edu/counselingcenter/>), Special Needs (<http://www.ulm.edu/counselingcenter/special.htm>), and Student Health Services, is available at the following Student Services web site <http://www.ulm.edu/studentaffairs/>.

G. Emergency Procedures:

In case of emergency, please follow the instructor.

H. Discipline/Course Specific Policies:

- ◆ Anyone disrupting the class in any way may be asked to leave the classroom immediately. Cell phones and other electronic devices are to be set to the "off" mode. All devices should be placed out of sight during exams and quizzes. Under no circumstances will students be allowed to make or receive calls during class. The first disturbance will result in a warning for the entire class. After the first disturbance, violators may be asked to leave and may have points deducted from the next exam. Students are expected to have all necessary materials for class (calculator, pencils, book, etc.) during every class meeting.
- ◆ Check Moodle often to be aware of any announcements, exam dates, homework assignments, grades, etc.
- ◆ All quizzes, class work, projects and exams should be neat and organized, preferably in pencil unless otherwise specified, to ensure that no points are missed because of solutions that are not legible. Circle/box solutions when necessary.
- ◆ Anyone needing special assistance (as addressed by the Americans with Disabilities Act), please notify the instructor immediately.
- ◆ Midterm grades will be posted online through the Arrow system by March 6, 2009. Midterm grades indicate a student's status at mid-semester only and do not indicate the final performance outcome of a student.
- ◆ The last day to drop a course with a grade of "W" and/or resign from the University is March 19, 2009.
- ◆ Prepare early for tests! There will be a review day before tests; however, the instructor will not have a planned review. It is the student's responsibility to bring questions for the review sessions.
- ◆ Taking excellent notes during class can be of great benefit when doing homework assignments and when studying for tests.
- ◆ Any policies given here may be altered by the instructor if deemed necessary. If this occurs, ample notice will be given.
- ◆ Only registered ULM students are allowed to attend class, thus neither friends nor children may attend class with you.

IX. Tentative Course Schedule

We will cover Section 6.4 and Chapters 9-11 in the book. Assignments are to be completed by the assigned due dates. All Modifications to the schedule will be posted on Moodle. It is the student's responsibility to keep abreast of any and all changes.

Week 1, January 13 & 15:	Orientation & 9.1
Week 2, January 20 & 22:	9.1 & 9.2
Week 3, January 27 & 29:	9.2 & 9.4
Week 4, February 3 & 5:	9.4 & Review
Test 1 (Tuesday, February 10)	Covering Sections 9.1, 9.2, & 9.4
Week 5, February 12:	10.1
Week 6, February 17 & 19:	10.1
Week 7, February 26:	6.4 & 10.2
Week 8, March 3 & 5:	10.2
(***)midterm grades will be posted on ARROW before March 6)	
Week 9, March 10:	Review for Test 2
Test 2 (Thursday, March 12)	Covering Sections 10.1, 10.2 & 6.4 & review of any previous material.
Week 10, March 17 & 19:	9.3 & 10.3
(***)Last Day to Drop Thursday, March 19)	
Week 11, March 24 & 26:	10.3
Week 12, March 31 & April 2:	11.2 & 11.3
Week 13, April 7:	Review for Test 3
Test 3 (Thursday, April 9)	Covering Sections 9.3, 10.3, 11.2, 11.3 & review of any previous material
Week 14, April 21 & 23:	11.1
Week 15, April 28 & 30:	11.1 & Review for Final

Final Exam - Thursday, May 7th from 10:00-11:50

- ◆ Covering all concepts covered in Chapters 9-11 and Section 6.4
- ◆ The final exam must be taken at the time indicated in the schedule booklet. No exceptions!
- ◆ The instructor reserves the right to adjust the schedule as needed.

The candidate will:

Louisiana Math Framework	Description	Grade Cluster	Foundation Skills
G-1-E	determining the relationships among shapes;	k-4	1,2,3,4,5
G-2-E	identifying, describing, comparing, constructing, and classifying two-dimensional and three-dimensional geometric shapes using a variety of materials;	k-4	1,2
G-3-E	making predictions regarding combinations, subdivisions, and transformations (slides, flips, turns) of simple plane geometric shapes;	k-4	1,2,3
G-4-E	drawing, constructing models, and comparing geometric shapes, with special attention to developing spatial sense;	k-4	1,4
G-5-E	identifying and drawing lines and angles and describing their relationships to each other and to the real world;	k-4	3
G-6-E	demonstrating the connection of geometry to the other strands and to real-life situations.	k-4	1,2,3,4
G-1-M	using estimation skills to describe, order, and compare geometric measures;	5-6	1,2
G-2-M	identifying, describing, comparing, constructing, and classifying geometric figures and concepts;	5-6	1,2,3
G-3-M	making predictions regarding transformations of geometric figures (e.g., make predictions regarding translations, reflections, and rotations of common figures);	5-6	1,4
G-4-M	constructing two- and three-dimensional models;	5-6	3
G-5-M	making and testing conjectures about geometric shapes and their properties;	5-6	1,2,3,4
M-1-E	applying (measure or solve measurement problem) the concepts of length (inches, feet, yards, miles, millimeters, centimeters, decimeters, meters, kilometers), area, volume, capacity (cups, liquid pints and quarts, gallons, milliliters, liters), weight (ounces, pounds, tons, milligrams, grams, kilograms)	k-4	1,2,3,4,5
M-2-E	selecting and using appropriate standard and non-standard units of measure (e.g., paper clips and Cuisenaire rods) and tools for measuring length, area, capacity, weight/mass, and time for a given situation by considering the purpose and precision require	k-4	1,2,3,4
M-3-E	using estimation skills to describe, order, and compare measures of length, capacity, weight/mass, time, and temperature;	k-4	1,2,3,4
M-4-E	converting from one unit of measurement to another within the same system (customary and metric); comparisons between systems should be based on intuitive reference points, not formal computations (e.g., a meter is a little longer than a yard);	k-4	2,3,4
M-5-E	demonstrating the connection of measurement to the other strands and to real-life situations.	k-4	2,4,5
M-1-M	applying the concepts of length, area, surface area, volume, capacity, weight, mass, money, time, temperature, and rate to real-world experiences;	5-6	2,3,4
M-2-M	demonstrating an intuitive sense of measurement (e.g., estimating and determining reasonableness of measures);	5-6	1,2,4
M-3-M	selecting appropriate units and tools for tasks by considering the purpose for the measurement and the precision required for the task (e.g., length of a room in feet rather than inches);	5-6	2,3,4
M-4-M	using intuition and estimation skills to describe, order, and compare formal and informal measures (e.g., ordering cup, pint, quart, gallon; comparing a meter to a yard);	5-6	1,2,4
M-5-M	converting from one unit of measurement to another within the same system (Comparisons between systems, customary and metric, should be based on intuitive reference points, not formal computation.);	5-6	2,4
M-6-M	demonstrating the connection of measurement to the other strands and to real-life situations.	5-6	1,2,3,4,5
P-3-M	analyzing relationships to explain how a change in one quantity results in a change in another (e.g., change in the dimensions of a rectangular solid affects the volume);	5-6	1,2,4