

**GEOMETRIC STRUCTURES
FOR EARLY CHILDHOOD AND ELEMENTARY TEACHERS
MATH 3403-801
Fall 2012**

Instructor: Tonya Rhodes

Office: NH 334

Office Hours: Tuesday s 5:45-6:45 pm and Thursdays are by appointment 5:45 – 6:45 pm. If you have a conflict with these times, please make an appointment (after class or by email) to see me at another time.

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Web Pages:

- Student resources for geometric structures available at <http://www.math.okstate.edu/geoset/>
- The URL for the OSU Syllabus Attachment for 2012 Fall semester is <http://academicaffairs.okstate.edu/images/documents/sylatfa.pdf>

OSU Catalog Description Prerequisite(s): 1483, 1493 or 1513. Foundations of geometry for prospective early childhood and elementary educators. Linear and angular measure, polygons and polyhedra, similarity and congruence, geometric constructions, motion and transformations. Class format may emphasize student investigation and discovery, discussion and presentation, and working with mathematical tools. *This course, together with MATH 3603, prepares students for CIED 3153 and 4153 and/or HDFS 3223.*

Important Note to Students. This course is no longer an A-designated General Education course; it will NOT satisfy the General Education Analytic and Quantitative Thought (A) upper division requirement.

Some Initial Comments. The content and instructional delivery of this course models the current professional thinking and standards endorsed by the National Council of Teachers of Mathematics (NCTM). Here are a few thoughts that will help you be successful

1. MATH 3403 is specifically designed for prospective elementary/ early childhood/middle level teachers; if you are pursuing a major different from one of these, your advisor will work with you to select a course more appropriate and valuable to your studies.
2. MATH 3403 is a content mathematics class much like other MATH-prefixed courses you have taken; the pedagogical issues related teaching this content in the school setting is addressed in detail in one of the methods courses that you will be taking as part of your program.
3. The value of this course will depend mostly on you - **your involvement, effort, and creativity.**

Required Textbook and Manipulatives:

- Geometric Structures – An Inquiry-Approach for Perspective Elementary and Middle School Teachers (ISBN – 13: 978-0-13-148392-7) by Doug Aichele and John Wolfe. **Because this is a workbook-type textbook and you will be recording your work directly into the activity pages, you will need to purchase a new, unused copy.**
- Required Manipulatives – a mira (also called a geo mirror/reflector available at teacher supply stores and online at www.hand2mind.com), protractor, scissors, ruler, compass, and calculator. **These manipulatives need to be brought to every class.**

Other helpful materials- tracing paper, tape, and colored pencils.

Daily Routine. Almost every class meeting will consist of a combination of individual and/or group activities, and discussion. In addition, there will be assignments and homework, which must be completed outside of class and **BEFORE** each class meeting.

Examination Grades. There will be three (3) fifty-minute in-class examinations with a maximum possible score of 100 points each and a 100 point comprehensive Final Examination during Final's Week which will be recorded TWICE. The **Final Examination** is scheduled for Tuesday, December 11, 2012 at 6:00 – 7:50 pm in room NH 396 (our regular classroom).

The time for the Final is not negotiable (except when the OSU Final Exam Overload Policy applies). You should note this on your calendar now; Plan ahead.

- Exam 1 Tuesday, September 18
- Exam 2 Tuesday, October 16

- Exam 3 Thursday, November 15
- Final Exam Tuesday, December 11, 6:00 – 7:50pm

There will be **NO MAKE-UP EXAMS** in this course. If one exam is missed, the score on the final will replace the missed exam score only if you request and obtain approval from the instructor in **advance** of the exam and only for very **serious and unavoidable** conflicts. Note. Prior documented university-sponsored activities can qualify for this missed exam replacement; it would be appreciated if you would please work with me well ahead of time to gain approval. If this condition is not satisfied, it is understood that a grade of 0 will be recorded for the missed exam. If a second exam is missed, it will receive an automatic 0.

Quizzes. There will be six (6) announced and unannounced quizzes in class; you must be present for the entire class session to present a quiz. Each quiz will cover material over the homework and/or notes and will be worth 10 points. At the end of the semester, the lowest quiz will be dropped. Because the lowest quiz will be dropped at the end of the semester, there are NO Make-Ups for Quizzes.

Study Teams. Learning from your classmates is a crucial and proven ingredient for your success. We believe in this and have arranged the course delivery accordingly. Each of you will have an opportunity to identify other with whom you wish to work this semester; a study team will be composed of four students and meet at least two separate times a week. **I will provide a more detailed handout on study team expectations, at the by the end of the first week of class.**

Initially, study teams should consider issues such as:

- Its goals and objectives (what you want from the team?)
- The strengths each member brings to the study team and how they will be utilized (what role members will play – identify who does what)
- How the study team will function (when do you meet, what will you do, and how you will help each other?) As you contemplate these issues, other will arise; they are supposed to!

Projects Grade. During the semester, out of class projects will be assigned. These are fun. Take them seriously and be CREATIVE! You must be present for the entire class session to submit a project when it is due. Your reflections on your projects should be written or typed on a separate page and attached to your project. However, for group projects, each member's reflections should be neatly noted in the group journal.

Class Attendance/Participation. Class attendance involving active participation is a very important element in your success. PLEASE ACTIVELY PARTICIPATE IN EACH CLASS SESSION. Because of the value I place on our class sessions as active learning opportunities, I ask that you assume responsibility for being physically present no later than 4:30 pm. I also realize that you may have a class that follows this one; I will dismiss each class session promptly at 5:45pm. Even though I believe that your active participation in this class is important to your success in it, there is no course attendance requirement. You will have an opportunity to earn course credit, however, through regular active participation in the class meetings that can contribute to improving your final course grade.

Here's how it works. You will be assigned an **Attendance/Participation Score** at the end of the semester. Attendance will be recorded during each class session. Your attendance/participation score is based on 50 points maximum and will be determined by your total days absent from class. As a prospective teacher, professionalism is expected; therefore, attendance/participation in this course is important. You must be fully participating in class to be considered present and determining "full participation" will be left to the discretion of the instructor. Here are some helpful things to remember about the attendance/participation score.

1. You must be present for the entire class session in order to be counted as present.
2. Because there is no class attendance requirement, there is no reason for "excused" absences for any reason, including university-sponsored activities and illness.
3. The instructor has complete discretion in awarding attendance points. If you are sleeping during class, or are otherwise not participating in class (including texting, reading a paper, etc.), you may be counted as absent.
4. The attendance score/participation score is **optional** and is meant to reward students for good attendance and active participation. A low class

attendance/participation score will **not lower** your overall grade.

5. You will be given 50 attendance/participation points at the beginning of the semester. You will receive one "free" absence, with no points deducted. For each absence after that, you will have **3 points deducted** from your attendance/participation score.
6. If a person has no absences at all during the semester (present at every class meeting), 3 additional bonus points will be added to the attendance/participation score (in this instance, the total is 53).

Replacing an Exam. At the end of the semester, you may replace the lowest of the first three exam scores **or** one of the two final exam scores (if it is your lowest score), provided it improves your letter grade, with points awarded to you as follows.

One-half of your lowest exam score	+ Your Attendance/participation score	= The grade that replaces your lowest exam score
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Example: Tonya's lowest exam score is 59 and she has 2 absences. Tonya's points are calculated as follows:

Half of Tonya's lowest test score	30 (half of 59 is 29.5, rounded up to 30)
Attendance/participation score	47 (first absence is "free", so $50 - 3 \cdot 1 = 47$)
Replacement Grade	77

Tonya's lowest exam score of 59 will be replaced with a score of 77.

Course Evaluation. Course grades will be determined according to the following distribution.

Daily Activities, homework, quizzes	150 points	
Projects Grade	75 points	
Exam 1	100 points	
Exam 2	100 points	
Exam 3	100 points	
Final Exam (100 points recorded twice)	200 points	<u>TOTAL 725 points</u>

Letter grades will be assigned according to a percentage of the total possible points as follow. **Minimum total points needed for semester grade:**

A	90% and above
B	80%
C	70%
D	60%
F	Less than 60%

Final Comments. This will not be a typical lecture-style learning experience. Instead students will be asked to discuss with each other problems and their solutions in order to develop a deeper understanding of concepts involved. This course is intended to mode the National Council of Teacher of Mathematics (NCTM) Curriculum Standards and NCTM Professional Standards. It is in this sense that we consider this course to be "inquiry-based." The textbook offers both a preface and an appendix to explain more explicitly what this means.

Drop and Withdrawal Policy. "Dropping" means you are withdrawing from a specific course but you are still enrolled in at least one other OSU course; the last day to drop a course with an automatic grade of "W" is November 9, 2012. "Withdrawal" means you are dropping all courses you are and no longer enrolled for the current semester; the last day to withdraw completely from OSU classes with an assigned grade of "W" or "F" is November 30, 2012. Additional information about "dropping" and "withdrawing" is available on the Fall 2012 Syllabus Attachment. **IT IS YOUR RESPONSIBILITY TO KNOW AND COMPLY WITH ALL DEADLINES.**

Incomplete Grade. The grade of "I" is given to students who satisfactorily who has completed the majority of the course work and whose work averages "D" or better, but who have been **unavoidably** prevented from completing the remaining work of the course.

Academic Integrity. The university has explicit rules governing academic integrity. Please consult the OSU Fall 2012 Syllabus Attachment mentioned above on the web. Working with another person or in study groups on problems can be helpful in learning the material. I encourage you to work together if you find it helpful. However, **all written work submitted must be your own.** Copying someone else's problem solution or showing your written solution to someone else are prohibited; such behaviors are regarded as violations of academic integrity and will be treated according to the University's policy. In order to be successful in learning the material and doing well on the examinations you must think very hard about the problems themselves **before** discussing them with anyone else.

Special Accommodations for Students. If you think you have a qualified disability and you need special accommodations, you should notify the instructor and request verification of eligibility for accommodations from the Office of Student Disability Services (North Hall 103 918-594-8354). Please advise your instructor of your disability as soon as possible, and contact Student Disability Services, to ensure timely implementation of appropriate accommodations. Faculty members have an obligation to respond once they receive official notice of a disability but are under no obligation to provide retroactive accommodations. **You must submit appropriate documentation and complete an intake process** during which the existence of a qualified disability is verified and reasonable accommodations are identified" (OSU Fall 2012 Syllabus Attachment) in order to receive services.

Any changes in this syllabus will be communicated to you in class by the Instructor.