

Math 3403: Geometric Structures for Early Childhood and Elementary Teachers

Spring 2011

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OCC Website: oc.okstate.edu

GeoSET Website: www.math.okstate.edu/geoset/

University 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). Please be aware that:

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 to teaching this content in the school setting are 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, i.e., your involvement, effort, and creativity.

Required Books and Materials: The text will be: "Geometric Structures: An Inquiry Based Approach for Prospective Elementary and Middle School Teachers" (Prentice Hall, 2008) by Doug Aichele and John Wolfe. Required manipulatives: **mira** (or image reflector), **scissors**, **straightedge**, and **compass**.

Course Websites: Course documents will be placed regularly on the Online Classroom website, oc.okstate.edu. Check this site regularly. Another helpful website is the GeoSET site, www.math.okstate.edu/geoset/, designed specifically for this class. This site contains basic geometry ideas and definitions, providing insight developed by previous students. The site also contains a bank of old exams.

Course Evaluation:

Course grades will be determined according to the following distribution:		Letter grades will be assigned according to the following cumulative points:	
Study Team	50 pts	581.5 to 650	A
Daily	75 pts	516.5 up to 581.5	B
Projects	75 pts	451.5 up to 516.5	C
Examination 1	100 pts	386.5 up to 451.5	D
Examination 2	100 pts	under 386.5	F
Examination 3	100 pts		
Final Examination	150 pts		
TOTAL	650 pts		
		There will be no curving of the final course grade.	

Study Teams: Students will form semester-long Study Teams. The first couple of classes will be used for students to grow to know each other better. At the beginning of the third class, students will pick their own teams of four based upon who they feel they can work and learn the best with.

- Study Teams must meet a minimum of twice each week for a minimum of 1 hour per meeting. The meetings to satisfy this requirement may not occur the hour prior to our scheduled class. (You may still have team meetings at these times. However, they cannot count toward the minimum weekly meeting requirements.) All the members of the Study Team must be present for the meeting to count toward the minimum weekly meeting requirements.
- Study Teams will record the “minutes” of their meetings in a Team Journal. The Team Journals will be periodically collected and commented upon. Each team member is expected to contribute to the Team Journal and identify his/her contributions. Your Team Journal is an evolving document over the course of the semester. Bring your Team Journal to each class meeting.
- Once formed, the Study Team should consider such issues as: (1) its goals and objectives (what each of you want from the Study Team); (2) the strengths each member brings to the Study Team and how they will be utilized (what role members will play - identify who does what); (3) how the Study Team will function (when do you meet outside of class, what you will do at Study Team meetings, and how you will help each other). As you contemplate these issues, others will arise; they are supposed to!
- Each Study Team must choose a team name. Be creative! You must report the team name to the instructor by the end of the **fourth class period**.

Learning from your classmates is a proven ingredient for success. The course delivery is structured in order to facilitate this. Establishing and nurturing Study Team spirit is vital to your success!

Study Team Grade: This grade will be assigned based upon three areas: Team Journal, Class Attendance, and Class Participation. Not having team meetings and poor journal quality are some of the items that will negatively affect the Team Journal area. Not attending the entire class will negatively affect the Class Attendance area. Not participating or adding anything of value to the classroom discourse will negatively affect the Class Participation area. Note that this is a group grade; everyone on the team will receive the same Study Team grade.

Projects Grade: Throughout the semester, projects will be given. These projects are intended to be fun, so be creative! Some of the projects will be group projects with your Study Team, and some will be individual. A specific due date and number of points/grading rubric will be given for each project as it is assigned.

Daily Grade: The daily grade includes quizzes, homework, and in-class work. **Assignments will not be accepted late, and make-up quizzes will not be given.**

Examination Grade: There will be three preliminary exams and one comprehensive final exam. There will be no make-up exams. If one preliminary exam is missed, the score on the final exam (scaled to 100 points) 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. If these conditions are not satisfied, it is understood that a grade of 0 will be recorded for the missed exam. If a second preliminary exam is missed, it will be assigned an automatic 0.

Daily Routine: During class the students will discuss understanding of topics, present problems from the homework, and/or work in class activities. To be prepared for each class session, you should: check the Online Classroom site for announcements, and you should bring your book, your completed homework, and the manipulatives that we are currently using with you to class.

Attendance Policy: Attendance is a component of the Study Team grade. However, as prospective teachers, the highest level of professionalism is expected. To this end, you must be physically present and participating in class for the **entire period** to turn in homework and projects, take the quizzes, and present problem solutions. If you are deemed by the instructor to not be engaged throughout the period, the instructor reserves the right to not accept the student's assignments. In other words, please turn off your electronic devices and definitely no texting during class.

Academic Integrity: Working with another person can be helpful in learning the material. In fact, this is one benefit of your study team. However, all written work submitted must be your own. Copying someone else's problem solution or showing your written work to someone else is 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 examinations, you must think very hard about the problems and make serious problem-solving attempts **before** discussing them with anyone else.

Special Accommodations for Students: "According to the Americans with Disabilities Act, each student with a disability is responsible for notifying the University of his/her disability and requesting accommodations. If you think you have a qualified disability and need classroom accommodations, contact the Office of Student Disability Services. Please advise the instructor of your disability as soon as possible to ensure timely implementation of appropriate accommodations. Faculty have an obligation to respond when they receive official notice of a disability but are under no obligation to provide retroactive accommodations. To receive services, 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. Call 405-744-7116 or go to <http://sds.okstate.edu/>" (OSU Spring 2011 Syllabus Attachment).

Drop and Withdrawal Policy: You may "drop" a course, and you may "withdraw" from the university (which means you "drop" all of your courses). It is your responsibility to know and comply with all deadlines pertaining to these actions. The last day to drop this course with an automatic grade of "W" is April 8th.

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

Note: Please consult the OSU Spring 2011 Syllabus Attachment for further guidance on important issues. A copy of the syllabus attachment can be found at: <http://osu.okstate.edu/acadaffr/aa/syllabusattachment-Spr.htm>

Final Note: At times, you may feel lost, frustrated, stuck, etc. This is normal. Don't give up, and keep working. **Be persistent!** You won't be able to understand anything if you don't work at trying to understand it. It's not really worth knowing if you don't have to struggle for it. Your Study Team is there **to help** you. I am here to **help** you. Your fellow classmates and I will work to get you unstuck. Good luck. I am honored to be along for your adventure this spring!

