GEOMETRIC STRUCTURES
MATH 3403 – 801
Fall 2014

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Online Classroom (D2L) Site:	https://oc.okstate.edu (then log in and find our course)
Syllabus Attachment:	The URL for the OSU Syllabus Attachment for 2013 Fall semester is: http://academicaffairs.okstate.edu/images/Patty/FacultyandStaffResources/Syllabus/fall%202014%20syllabus-final.pdf

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.

Course Description.

From OSU catalog:
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 emphasizes 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.

From the instructor:
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 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, i.e., your involvement, effort, and creativity.
4. This course uses a nontraditional approach to learning, which may cause some discomfort on the student's part – at least initially. Unlike a traditionally taught course, where a geometric concept or formula would be presented during a lecture and the student is expected to simply learn it, you will have the opportunity to "discover" geometric concepts for yourself. The hope is that this approach will help solidify the ideas for the long-term. This can actually be "fun", even for the reluctant math student. **It is my hope that through this course you will gain confidence in your mathematical abilities, and gain a passion and desire to impart this to your prospective elementary students in the future.** I also hope that you will consider using some of these same strategies for teaching geometric concepts with your own students, so that they may make their own discoveries as well.
This format will not work for you without your participation and willingness to try. The value of the content, but more importantly, the value of the way you learn the content, depends on your effort, having an open mind, and working well with others.

Required Book and Materials.

•*Geometric Structures – An Inquiry-based Textbook for Prospective Elementary Teachers* by Douglas B. Aichele and John Wolfe. **Note: You may not buy a used textbook nor may you rent a textbook.**

•Scissors, compass, protractor, ruler, mira, and scientific calculator are required. Other helpful supplies are tracing paper, tape, and colored pencils. You may need other materials for special projects, and those will be announced in class as needed. You should bring paper, pencil, textbook, and materials to **every** class.

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

Daily Work	200 points
(Assignments, Quizzes, and Presentations)	
Projects	150 points
Examination 1	100 points
Examination 2	100 points
Examination 3	100 points
Final Exam	200 points

TOTAL	850 points

Minimum total points needed for a semester grade of:

A (90%) – 765
B (80%) – 680
C (70%) – 595
D (60%) – 510

Daily Work. Daily Work consists of Assignments, Quizzes and Presentations. Most of your Daily Work can be done with a Study Team.

Study Team Information. Learning from your classmates is a proven ingredient for success. We believe in this and have arranged the course delivery accordingly. The first couple of classes will be used for you to grow to know each other better. At the beginning of the third class, you will pick your own teams of approximately four based upon whom you feel you can work and learn the best with. These teams will be changing throughout the semester.

- Study Teams are encouraged to meet a minimum of twice each week for a minimum of 30 minutes per 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 me by the end of the fourth class period.

Assignments. Generally 4 to 5 activity sets will be given each class. This assignment is due at the beginning of the following class period. **Students must be present for the entire class period to receive credit for any**

daily grade. You will be working in groups during class, and activities not done in class are homework. Groups are encouraged to get together often outside of class to work on homework. Come to class with homework completed. Selected pages will be collected for a grade.

Quizzes. Sometimes I will give a quiz over an assignment rather than collecting the paper. Quizzes may be announced or unannounced. **You must be present for the <u>entire</u> class period to receive credit for any daily work.**

Presentations. During class we will discuss your understanding of the topics on the activities, present problems from the homework, and/or work in-class activities. You will lead the discussions; I will not. I will take volunteers to present each activity to the class, and will pick a study team if there are no volunteers. The team will decide which individual will present that section. You should aim to present a minimum of 4 activities.

Daily work may not be made up. You must be present for the entire class period in order to turn it in. However, I will drop your 2 lowest assignment or quiz grades. So, if you miss an assignment, homework, or quiz, it will be recorded as a 0 and, hopefully, will be a grade that is dropped. Each student is also required to do several presentations (the number to be determined later according to number of assignments and students). If a student does not do the required number of presentations, a 0 will be recorded for each one not done, and these 0's cannot be dropped.

Projects. There will be a few projects due during the semester. They will be discussed when they are assigned. Projects will not be accepted late.

Attendance. For this course in particular, attendance is very important since much of the learning takes place in group activities during class. As a future teacher, you are expected to conduct yourself professionally. You are expected to attend all classes and participate fully. 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. A low class attendance score (due to excessive absences) 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 you have no absences at all during the semester (present at every class meeting), 3 additional bonus points will be added to your 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	+	Your Attendance/	=	The grade that replaces
lowest exam score		participation score		your lowest exam score

> **Example:** Sam's lowest exam score is 59 and he has 2 absences. Sam's points are calculated as follows:
>
> Half of Sam'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 · 1= 47)
> Replacement Grade   77
>
> Sam's lowest exam score of 59 will be replaced with a score of 77.

Exams: There will be three (3) 75-minute in-class examinations with a maximum possible score of 100 points each and a 200-point comprehensive Final Examination during Final's Week. The day and time of the **Final Examination** will be announced once it is scheduled. The time for the Final is not negotiable (except when the OSU Final Exam Overload Policy applies). These exams will test not only your content knowledge but also your ability to explain your thought process.

The dates for the exams are as follows and will not change. Put them on your calendar now and plan ahead.

Exam 1: September 11
Exam 2: October 9
Exam 3: November 6

No make-up exams will be given for any reason. In the event that a student must miss a test, the student must request and obtain approval from the instructor in advance. I will only grant approval if there is a very serious and unavoidable conflict. If the student does get my approval in advance, then the final exam percentage grade will be recorded for the missed exam. If the student does not obtain my approval in advance, and misses an exam, then a 0 will be recorded for that exam.

Note: Using a false excuse is a violation of academic integrity, and will be dealt with accordingly. As a future teacher, your academic integrity standards should be very high.

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 7, 2014. "Withdrawal" means you are dropping *all courses* and you are 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 21, 2014. Additional information about "dropping" and "withdrawing" is available on the Fall 2014 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 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 Dishonesty/Misconduct. The university has explicit rules governing academic dishonesty and academic misconduct. The policies are detailed in the document "Student Rights and Responsibilities Governing Student Behavior." It is available from the Deans' Offices, the Provost's Office, and various other places around campus. The university policies will be followed in this class. The minimum penalty for an act of academic dishonesty will be the assignment of a grade of 0 on the examination or homework assignment

Working with another person or in study groups on problems can be helpful in learning the material. I encourage you to work together in your groups. However, **all written work submitted must be your own**. *Copying someone else's problem solution or showing your written solution to someone else is prohibited*. 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 any member of this class feels that he/she has a disability and needs special accommodations of any nature whatsoever, he/she should notify the instructor and request verification of eligibility for accommodations from the Office of Student Disability Services, North Hall 204. Please advise the instructor of such disability as soon as possible, and contact Student Disability Services, to insure 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.

Final notes.
- I want every single one of you to come out of this class feeling better about mathematics than when you came in. I am more than willing to help you in any way that I can, and I genuinely care about your success and general welfare. Please do not hesitate to ask any questions, or voice any concerns.
- This is a geometry course, but this course is much more than a typical content course. In addition to content, I want you to experience how it feels to be creative in mathematics. I want you to gain practice at expressing and communicating mathematics, and in doing so, learn to take the chance of being wrong. There is much value in following your own path to discover mathematics. Give yourself the chance to explore the concepts in this course, and try to take the focus off of being "right" or "wrong".

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

First Assignment
(Easiest 10 Points of the Semester)

Please complete this assignment by Friday, August 27.

1. Send me an e-mail at emily.quinn@okstate.edu. Write me a **paragraph** (not a list) including your name, year in school, major (if you know), hometown, last math class (and instructor if taken at OSU), and anything interesting about yourself you would like for me to know, especially your interests in and out of school. Please attach a picture of yourself as well. These e-mails let me know something about my students and help me get to know everyone. If you don't get a reply from me within a day, I probably didn't get the email – talk to me about it.
2. Read the Syllabus Attachment at http://academicaffairs.okstate.edu/images/Patty/FacultyandStaffResources/Syllabus/fall%202014%20syllabus-final.pdf.