Math 445	Geometry for Teachers	Spring 2009

Handout #1: SYLLABUS

Professor: John M. Lee
Padelford C-546, 206-543-1735
lee@math.washington.edu

TA: Ariana Dundon
Padelford C-132
adundon@math.washington.edu

Classes: MWF 10:30–11:20
Thomson 202

Web site: *www.math.washington.edu/˜lee/Courses/445-2009*
or from the Math Department home page,
Undergraduate Program → Class Web Pages → Math 445A

Textbooks: *These are on reserve in the Math Research Library (PDL C-306).*
Gerard A. Venema, *The Foundations of Geometry*, Pearson Prentice Hall, 2005
Dana Densmore (ed.), *Euclid's Elements*, Green Lion Press, 2002
Harold Jacobs, *Geometry: Seeing, Doing, Understanding*, W. H. Freeman, 2003
John M. Lee, *Axiomatic Geometry*, course notes to be handed out in class.

Prerequisites: Grade of 2.0 or better in Math 444.

Exams: Midterm: Friday, May 8, in class *(tentative date)*.
Final: Monday, June 8, 8:30–10:20AM, Thomson 202.

GENERAL DESCRIPTION

This is a continuation of Math 444; together, these two courses are designed for people who expect to be teaching geometry at the high school or middle school level, but they can be useful for many others as well.

We will begin where where 444 left off, at the beginning of Chapter 4 of *Axiomatic Geometry*. The main topics this quarter will be:

- triangles;
- models of Euclidean and non-Euclidean geometry;
- perpendiculars, parallels, and polygons;
- area in Euclidean geometry;
- similarity;
- circles;
- transformations;
- compass and straightedge constructions;
- introduction to non-Euclidean geometry.

REQUIREMENTS

Classes: Although I won't keep a formal attendance record, *I expect you to attend every class.* If you will miss a class for a valid reason (religious holiday, graduate degree program requirements, etc.), let me know in advance and I'll arrange to get you a summary of the lecture and any materials you missed. If you must miss a class for some other unavoidable reason, it's your responsibility to find out what happened, and get your homework to me by class time (or, in case of emergency, as soon as possible thereafter).

Geometry Blog: There is a Math 445 Geometry Blog, accessible from the class website. (The location is different from that of the Math 444 blog.) I will try to post a blog entry as soon as possible after every class—usually, my entries will be ready by about 4:00PM, sometimes sooner. Each of my blog entries will include a brief summary of what happened that day (no substitute for attending class!), the latest reading and written assignments, and some questions for you to address in your own blog entries. Part of the requirement for this course is to post a blog entry of your own, in response to mine, before the next class. Your posts won't be graded for quality, but for full credit you must respond to at least two posts a week, and your entries must address the questions I pose in my own posts. In addition, I encourage you to bring up any questions that have been raised in your mind by the latest reading, lecture, and/or homework, and to respond (respectfully!) to questions or comments made by other students. Please don't just repeat what others have written; instead, try to contribute something new to the conversation. If you wish to write about specific homework problems, please confine your comments to general questions and suggestions about how to get started.

Reading: Many of my blog posts will include reading assignments. This quarter, they will usually be from my *Axiomatic Geometry* notes. I expect you to read through each assignment quickly before the next class, and then to reread it carefully after it is covered in class. All reading assignments are required.

Written Homework Assignments: Many of my blog posts will also include written homework assignment, typically due at the next Wednesday class. Homework will not be accepted after the due date except in extraordinary circumstances and (except for emergencies) with advance permission. I encourage you to work on the homework problems together with other students. However, when you write up your solutions to hand in, *you must write your own solutions in your own words.* For details about how to write up homework assignments, see the *Homework Expectations* handout from Math 444.

Quizzes and Exams: In addition to an in-class 50-minute midterm exam and the regularly scheduled final exam, I will give short unannounced quizzes at sporadic intervals throughout the quarter. Quizzes cannot be made up, but your lowest quiz score will be dropped. If you have a legitimate reason for missing a class, let me know in advance and you will be excused from any quiz that is given that day. If you miss a quiz for unavoidable medical reasons, bring me a doctor's note afterwards.

Writing Portfolios: Some of your written homework problems will be designated as "Portfolio Problems," usually after they've been graded and returned to you. You'll revise and rewrite the solutions to the portfolio problems, with feedback from other members of the class, the TA, and/or me. After a couple of rounds of revision, you'll come up with a final version to keep in your portfolio. At the end of the quarter, you'll turn in a completed writing portfolio for a grade.

GRADES: Your grade for the quarter will be based on a weighted average of the following score:
- 20%   Homework assignments
- 10%   Quizzes
- 5%   Blog posts
- 15%   Writing portfolio
- 20%   Midterm exam
- 30%   Final exam

Individual homework and quiz scores will be recorded as percentages, and the lowest homework score and lowest quiz score will be dropped before averaging the rest.