Math 510, Introduction to the Foundations of Geometry Spring 2007, 5:35–6:50 MW, C-8

Instructor: Imre Tuba

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Office hours: 3:45–4:45 MW, 5–6 Tu.

Prerequisites: Calculus II (Math 122 or 151 or equivalent) and a thorough understanding of K–12 math. **Text:** Henderson, Taimina: Experiencing Geometry, 3rd Edition.

Course objective: This is an advanced undergraduate course in the foundations of geometry. We will cover selected topics from Euclidean, spherical, and hyperbolic geometry. You will be expected to have a solid understanding of the basic concepts in these various geometries, state precise definitions, and come up with examples. You will need to know how to prove theorems covered in class and in the text and how to prove or disprove unfamiliar statements in an axiomatic system appropriate to the level of the course. Website: www.rohan.sdsu.edu/~ituba/math510.

Homework and reading will be posted on the class website regularly. You will be able to follow the progress of the course using the website. HW is an essential part of your learning. <u>Take it very seriously</u>. Don't leave it to the last moment, do it all, and do it on time. Treat the HW as a learning opportunity, rather than something you need to get out of the way. Reread, revise, and polish your solutions until they are correct, concise, efficient, and elegant. This will really deepen your understanding of the material. You are unlikely to succeed in a math class without doing all of the HW.

I want to be able to grade and return HW promptly. So to be fair to everyone, I will not accept late HW for credit as a general rule.

Collaboration on the HW: You will be expected to submit individual work. Limited collaboration with your fellow students in the class is OK. The purpose is to let you discuss and critique each other's ideas and not to let you split the workload. Keep collaboration constructive and reasonable. You are expected to fully understand the solution and write it up on your own. Submission of essentially identical work by two different students will not be acceptable.

Exam: There will be an in-class exams on Feb 26.

Project: Close to the end of the semester, you will give a talk in class on a geometry-related topic. The timing of these talks is TBA.

Final exam: 4:30-6:30 PM Mon, May 14. Location TBA.

Grading scheme:

Homework	40%
In-class exam	15%
Project	15%
Final exam	30%

A score of 90% or more will guarantee an A, 80% a B, 70% a C, and 60% a D. The curve may be adjusted lower than this.

Quality of work: It is important that you work neatly on the assignments. The quality of your work will affect your grade. Quality has to do with how easy it is for someone else to read your solution to a problem. It is not enough to do the math right, you must also communicate it well.

Students with disabilities: If you need special arrangements, let me know <u>well in advance</u> so we can plan to accommodate your needs.

Another general note: Learning math is much like learning to ride a bicycle in that you learn by doing it and not by watching someone else do it. Attending class and reading the textbook won't be enough to do well on the exams. You should work through every example and proof in the book and in your class notes and expect to have to re-read everything several times. It's slow, but then your reading list for this class is short.