MATH 308: Euclidean Geometry
Section 101, Fall 2004

When: Mondays, Wednesdays, and Fridays, 11:00–11:50 AM

Where: MATX 1100 (Mathematics Annex)

Course web page: `http://www.math.ubc.ca/~gerg/`

Textbook: A. Baragar, *A Survey of Classical and Modern Geometries* (Prentice Hall)

Prerequisites: A passing mark in one of MATH 221, MATH 223, or MATH 152; and a passing mark in one of MATH 220, MATH 226, or CPSC 121.

The second prerequisite is extremely important, and students who have not passed MATH 220, MATH 226, or CPSC 121 will typically be significantly unprepared for this course. Virtually all of your course work will be understanding and writing proofs.

Instructor: Prof. Greg Martin

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Phone number: (604) 822-4371

Office hours: Tuesdays 10:00–11:30 AM and Fridays 2:00–2:50 PM

Description: We will begin with a fairly classical approach to Euclidean geometry, discussing fundamental theorems of geometry, triangle congruences and centers, constructions with straightedge and compass, and so on. Some of the material might ring a bell from a high school geometry class, although our emphasis will be on the foundations of geometry (axioms) and the proofs of these results. Towards the end of the course, we will see a contrast to Euclidean geometry through a study of hyperbolic geometry, a type of non-Euclidean geometry that can still be visualized.

We will also mention, to some extent, the historical evolution of the subject of geometry, the geometry of polyhedra in Euclidean (three-dimensional) space, and isometries and tilings of the plane (e.g., wallpaper patterns). The material we will be covering is essentially Chapters 0–3 and 5–8 of the textbook, with possibly one or two brief handouts for supplementary material. In summary, the emphasis of the course will be on a rigorous understanding and exposition of the subject, proof-based and abstract (as opposed to computational).

Use of the web: All homework assignments and other course materials will be posted on the course web page, `http://www.math.ubc.ca/~gerg/` (click on "Teaching" and then

on "Math 308 Section 101"). After the first day, *no handouts will be distributed in class*. You may access the course web page on any public terminal at UBC or via your own internet connection. Accounts for the Mathematics department undergraduate computer lab (located in the MSRC building) will be given to any enrolled student who requests one; please email or visit the instructor to request an account.

All documents will be posted in PDF format and can be read with the free Acrobat reader. The course web page contains instructions on how to download the Acrobat reader if you do not already have it.

Evaluation: There will be two midterm exams and one final exam as well as weekly homework assignments. The course mark will be computed as follows:

- Weekly homework assignments: 10 percent
- Two in-class midterm exams (Wednesday, October 6, 2004 and Wednesday, November 10, 2004): 20 percent each
- Final exam (time and place to be announced): 50 percent

You are required to be present at all examinations. No makeup tests will be given. Non-attendance at an exam will result in a mark of zero being recorded. Unavoidable, documented medical emergencies are the only exception to this policy.

Homework will generally be assigned on Wednesdays and due the following Wednesday in class. *Late homework will not be accepted.* To account for forgetfulness or unforseen circumstances, each student's lowest homework score will be dropped. Missed homework will not be excused beyond this point, except for documented medical reasons.

Students are allowed to consult one another concerning the homework problems, but *your submitted solutions must be written by you in your own words*. If two students submit virtually identical answers to a question, both can be found guilty of plagiarism.