

Math 476: Modern Geometry

Spring 2008

Course Procedures

Professor: Josh Laison

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Office Hours:

Monday 3:00-4:30

Wednesday 3:00-4:30

Thursday 10:00-11:30 AM, at the Bistro

or anytime by appointment or by catching me in my office.

Class Meetings: Collins 201, 11:30-12:30 Monday, Wednesday, Friday

Textbook: A Course in Modern Geometries, 2nd edition, Judith N. Cederberg

Course Web Page: <http://www.willamette.edu/~jlaison/geometry.html>

Grading:

Written problems (8)	25%
Class participation and presentations	20%
Individual problems (4)	25%
Oral exams (2)	25%
Math colloquium talks (4)	5%
Total	100%

Goals of the Course:

- Learn about different types of geometries, including axiomatic, transformational, Euclidean, hyperbolic, elliptic, finite, and projective geometries.
- Improve mathematical writing and presentation skills.
- Explore a variety of pedagogical techniques that could be used by future mathematics teachers.
- Have fun.

Topics Covered: We will cover most of Chapters 1-4 of Cederberg, as time permits. The course is divided up into the following topics. Times for each topic are rough estimates only.

- Euclidean geometry, Section 2.2, 1 week
- Axiomatic systems and finite geometries, Sections 1.1–1.3, 1 week
- Hyperbolic and elliptic geometry, Sections 2.3–2.9, 3 weeks
- Symmetries and transformations in the plane and 3-space, Chapter 3, 5 weeks
- Projective geometry, Chapter 4, 4 weeks

Written Problems: These assignments will be due about once every two weeks. You may work together on these problems; in fact, you may have the opportunity to work on them in class. However, please write your solutions to these problems in your own words.

Individual Problems: These are problems that I will ask you to complete by yourself, without help from other students. You may not consult any person about these problems other than me. You may not consult any source about these problems other than your textbook, your notes, and class handouts.

Attendance and Class Participation: In-class activities will be a large component of the course, and the portion of your grade for attendance and class participation is correspondingly high. The class will cease to function if any class member is absent or disengaged. Please support your classmate(s) by coming to class every day prepared.

Attendance at the Math Department Colloquium: According to math department policy, since you are enrolled in a 400-level mathematics course, you are required to attend at least 4 mathematics department colloquium talks. The goal of this requirement is to expose you to a wider range of mathematics, and to make you want to go to more than 4 talks! I hope you will decide by the end of the semester, as I have, that math talks are a lot of fun.

Oral Exams: You will have one midterm and one final oral exam. Each student will schedule their exam individually, and take it in my office. The exam should last an hour or less.

Disabilities: If you have a documented disability for which accommodations may be required in this class, please contact me to discuss your needs. Additionally, you will need to register with Disability and Learning Services in the Bishop Wellness Center within the first two weeks of class. All such discussions will be confidential.

Academic Honesty: Cheating and plagiarism are serious offenses and will be treated severely, in accordance with college policy. In addition, I am personally insulted by such behavior. So please don't do it. These are the practices I expect you to follow in each of the components of the course:

- **on the written problems:** You may, and are encouraged to, discuss the homework with anyone, get help from your textbook, notes, computer algebra systems, etc. However, your submitted written work should be your own.
- **on the individual problems:** You may consult your text and notes. You may not discuss the individual problems with anyone other than me.