

MAT 551, Fundamental Concepts of Geometry

Spring 2009

SYLLABUS

Time & place: Tuesdays and Thursdays, 3:30 - 4:40 pm, in room 316 Carnegie
Instructor: Professor Mark E. Watkins
Office location: Room 317G Carnegie
Telephone extension: 1500
e-mail: mewatkin@syr.edu

Office Hours (13 January through 28 April):

TUESDAYS: 9:15 - 10:45 am

WEDNESDAYS: 10:00 am - 11:30 am and 3:00 - 4:00 pm

(Other times are available by appointment. There are no regular office hours on days when no University classes are scheduled.)

Note: Class will not meet on Thursday, 9 April. We will select a mutually convenient time to make up the class.

Text: The required textbook for this course is *Euclidean and Non-Euclidean Geometries, 4th Ed.*, by Marvin Jay Greenberg. *You will need to have your text handy at every class meeting.*

Most of the time you will be expected to have read the pertinent text material *before* you come to class. I will answer any questions about the assigned reading at the beginning of each class meeting (and of course at office hours), but you must first have already made a serious attempt to understand the text on your own. We will *probably* cover the following material. (**Bold face type** indicates the most important stuff.)

Chapter 1: 1-15 on your own; 15-25 lecture; 25-38 on your own; 38-40 lecture.

Chapter 2: 53-66 was covered in MAT 275, so review it on your own if you need to; 66-68 on your own; **69-72 lecture**; 72-81 on your own; **81-88 lecture**; 89-91 on your own.

Chapter 3: all covered in lecture. (This is really the foundation of the course.)

Chapter 4: all covered in lecture. (This depends heavily on Chapter 3.)

Chapter 5: skim lightly.

Chapter 6: 239-249 on your own; 249-267 lecture.

Chapter 7: all covered in lecture. We reap the dividends of a lot of hard work!

Chapter 10; as much as we can.

Prerequisites: MAT 275 and MAT 331. This course is highly dependent upon material in MAT/CIS 275, especially formal logic and methods of proof, such as use of the contrapositive, indirect proof (*reductio ad absurdum*), quantifiers, and mathematical induction.

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Grading:

- 2 Midterm tests (1/6 of your grade for each test), on February 17 and March 30;
- Final Exam (1/3 of your grade), on 30 April, 10:15 - 12:15;
- 8 Problem sets (1/3 of your grade).

Due dates for problem sets:

- January 22;
- February 3, 12, and 26;
- March 17 and 26;
- April 14 and 28.

All problems must be written up in a style similar to that of your text, i.e., either by using complete, grammatically correct English sentences or in the format of a numbered

STATEMENT (REASON)

list (as, for example, in Proposition 3.2 on p. 112). All but the most elementary logical steps must be justified, and the theorems that you are using must be cited by their name or by the number used in this text. (You do not need to recopy the questions.) Especially clever, insightful solutions earn extra credit. Messy scratchwork receives zero credit. Sometimes a problem set may include one or two optional “extra credit” problems.

Academic Integrity:

You may collaborate with your classmates in doing your problem sets. In fact, you are encouraged to do so. But each of you must do your own write-up, and for each problem on which you collaborate, you must list all of your collaborators.

The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Giving aid to another student on a test is just as serious as receiving it, and can be punished in a similar fashion. Students have a right to appeal all such sanctions.

In this course the penalty for cheating on a test is a grade of F for the course. All instances of academic dishonesty will be reported to the College Committee for Student Standards.

Students with Disabilities: Students who may need academic accommodation due to a disability are encouraged to discuss their needs with the instructor at the beginning of the semester. In order to obtain authorized accommodation, students should be registered with the Office of Disability Services (ODS), 804 University Avenue, Room 309, 315-443-4498 and bring an updated accommodation letter to the instructor. Accommodations and related support services such as exam administration are not provided retroactively and must be requested in advance.