Syllabus – Math 335 – Spring 2008

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Office Hours: Monday & Wednesday 12-13, Tuesday & Thursday 11-12

Time: Monday, Wednesday & Friday 13:00-13:50
Room: 200 Schumacher Hall
Text: *Euclidean and Non-Euclidean Geometries*, 4^{th} edition, Marvin J. Greenberg, W. H. Freeman

Catalog Description: A postulation approach to some Euclidean and non-Euclidean geometries. Topics include incidence and separation properties of planes and space, constructions with compass and straightedge, geometric inequalities, the parallel postulate, similarity theorems, circles, properties of triangles, and metric relationships.

Goals: This class will cover the development and history of Geometry from the work of Euclid through the discovery of hyperbolic geometry by Gauß, J. Bolyai, and Lobachevsky, and will explore the mathematical and philosophical consequences of this revolutionary discovery. In the process, and through the completion of homeworks, quizzes, and exams, the student will achieve the following goals:

- Enhance abstract and critical reasoning skills.
- Communicate mathematical ideas effectively.
- Demonstrate an understanding of key mathematical concepts.

SUNY General Education Attributes: LA

SUNY Learning Outcome: Students will show competence in the following quantitative reasoning skills: arithmetic, algebra, geometry, data analysis, and quantitative reasoning.

Grading Policy: Your grade will be determined by the following:

- Two midterm exams, each worth 20% of your grade.
- The final exam, cumulative and worth 25% of your grade.
- Class participation, 10% of your grade. To receive full credit, it suffices to attend every class (unless excused) and regularly contribute to the discussion.
- Homework, 25% of your grade. Homework will be assigned frequently, and collected occasionally.

Your final grade will be assigned according to the following scheme:

A	$92 \leq x \leq 100$	B^-	$80 \leq x < 82$	D^+	$67 \leq x < 70$
A^-	$90 \leq x < 92$	C^+	$77 \leq x < 80$	D	$62 \leq x < 67$
B^+	$87 \leq x < 90$	C	$72 \leq x < 77$	D^-	$60 \leq x < 62$
B	$82 \leq x < 87$	C^-	$70 \leq x < 72$	E	$0 \leq x < 60$

Course Outline: We will cover Chapters 1 through 3 from the text. Below is a tentative schedule.

16 - 23 Jan	Chapter 1: Euclid's Geometry
25 Jan - 1 Feb	Chapter 2: Logic
4 - 15 Feb	Chapter 3: Hilbert's Axioms
18 - 22 Feb	**No class**
25 Feb - 29 Feb	Chapter 4: Neutral Geometry
3 Mar	Exam 1 review
5 Mar	**Exam 1**
7 Mar - 12 Mar	Chapter 4, continued
14 - 17 Mar	Chapter 5: History of the Parallel Postulate
19 Mar - 21 Mar	Chapter 6: The discovery of non-Euclidean Geometry
24 - 28 Mar	**No class**
31 Mar - 4 Apr	Chapter 6, continued
7 Apr	Exam 2 review
9 Apr	**Exam 2**
11- 18 Apr	Chapter 7: Independence of the Parallel Postulate
21 - 30 Apr	Chapter 8: Philosophical Implications
2 - 5 May	Final Exam review
12 May, 14:00 - 16:30	**Final Exam**

Attendance: Please come to class regularly and on time. Any material missed due to an unexcused absence is the responsibility of the student.

Students missing 25% or more of class, any time from the second week of class up until the last day to withdraw from an individual course may be removed from the course by the instructor.

A word of advice: The best way to learn mathematics (or anything else) is to actively engage in the subject, by working out problems and discussing ideas with others. You are strongly encouraged to use our time together in class for this purpose. Read the relevant sections of the book *before* we cover it in class, so that you can ask questions. Not only will this help you learn the material, it will help your grade (see "Grading Policy" above).