

SYLLABUS - SPRING 2010

COURSE: M436 Introduction to Geometries

INSTRUCTOR: Dr. C. W. Baker OFFICE: LF222 PHONE: 941-2272 EMAIL: cbaker@ius.edu

TEXT: *Geometry and Its Applications, 2nd ed.*, by Walter Meyer (Recommended but not required.)

SOFTWARE: The Geometer's Sketchpad

GRADING SCALE:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
Below 60%	F

COURSE GOALS: The students will do the following procedures: (1) state axioms from Euclidean and hyperbolic geometry; (2) state definitions from Euclidean and hyperbolic geometry; (3) state theorems from Euclidean and hyperbolic geometry; (4) use axioms, definitions, and theorems to prove statements from Euclidean and hyperbolic geometry.

CELL PHONE POLICY: All cell phones must be turned off during class time.

There will be three examinations (100 points each) and a comprehensive final examination (200 points). Selected homework will count a total of 75 points. Depending upon the circumstances, late homework may not be accepted and makeup examinations may not be given. The homework will consist of completing various parts of the material covered in lecture. Some of the assignments will require use of The Geometer's Sketchpad. A paper on the history and development of non-Euclidean geometry will be required. This paper will count 25 points and will be due on February 25. The following books are on reserve in the library and may be used as references for the paper:

“New Geometries, New Worlds” from *Mathematics in Western Culture* by Kline;
“Non-Euclidean Geometry” from *Mathematical Thought from Ancient to Modern Times* by Kline.

Other references may be used. Please list all references used at the end of the paper. The paper should be at least five pages in length with font size 12 and all margins 1 inch.

	<u>DAY</u>	<u>SECTION</u>
Jan.	12	1.3 Axioms for Euclidean Geometry
	14	1.3
	19	1.3
	21	1.3
	26	2.1 Congruence

	28	2.1
Feb.	02	2.2 Perpendicularity
	04	2.2
	09	Examination
	11	2.2
	16	2.3 Parallelism
	18	2.3
	23	2.4 Similarity
	25	2.4
Mar.	02	3.1 Hyperbolic Geometry
	04	Examination
	09	3.1
	11	3.1
	16	3.1
	18	4.1 Isometries and Their Invariants
	30	4.1
Apr.	01	4.1
	06	4.2 Composing Isometries
	08	Examination
	13	4.2
	15	4.3 There are only Four Kinds of Isometries
	20	4.3
	22	Review
	29	Final Examination (Comprehensive 200 points)