California State University, San Bernardino
Department of Mathematics
Math 614, Section 1, Winter 2012
Studies in Geometry

Course and Instructor Information

Instructor:	**Charles Stanton**
Office location:	**JB 368B**
Telephone:	**(909) 537-5376**
Email:	**cstanton@csusb.edu**
Office hours:	**Monday, and Wednesday 12-1 p.m.** **Tuesday, 3:15-4:15 p.m.** **Wednesday 3-3:50 p.m.** **And by appointment.**
Class Days/Time:	**Monday and Wednesday 6-7:50 p.m.**
Classroom:	**JB 383**
Web page:	**http://www.math.csusb.edu/faculty/stanton/**

Blackboard

Copies of the course syllabus and major assignment sheets may be found on the campus Blackboard site after the first week of classes.

Course Description

Math 614 Studies in Geometry (4 units): Advanced topics in affine, projective, elliptic, and hyperbolic geometry. Comparison of synthetic and analytic methods of proof. Prerequisites: MATH 529, 545 and admission to the M.A. in Mathematics program.

Course Goals/Objectives and Student Learning Objectives/Outcomes

Upon successful completion of this course, students will be able to:

1. Explain the viewpoint of Klein (the “Erlangen” program) for classifying geometries.
2. Calculate the images of points, lines, and circles under inversive transformations.
3. Use the Fundamental Theorem of inversive geometry.
4. Understand the Non—Euclidean parallel postulate.

5. Calculate the geometric action of a Non-Euclidean transformation.
6. Prove basic theorems in Non-Euclidean geometry.
7. Understand discrete groups of Non-Euclidean transformations and their relation to Non-Euclidean tesselations.

Required Text

Textbook
Geometry, by Brannan, Eslplen and Grayr, 1999, Cambridge University Press, ISBN:0521597870 (paperback)

Course Content

The course will begin with a short look at chapter 5 (Inversive Geometry). The bulk of the course will be on chapter 6 (Non-Euclidean Geometry). Additional material on discrete groups of transformations will be presented.

Assignments

Homework will be assigned and collected weekly. Homework should be done neatly and turned in with problems in the proper order.

A short introductory TeX assignment will be given early in the quarter. You are expected to turn in on Blackboard both the raw tex file and a pdf version.

A portfolio entry for Math 614 done in LaTeX will be due Monday, March 12.

Grading Policy

Your grade will be based on homework, two midterms, an introductory LaTeX assignment, a portfolio entry, and a final exam.
The first Midterm will be on Wednesday, February 8, and the second will be on Wednesday, March 7. The final exam is Wednesday, March 21, 6-8 pm.

Points (500 total)
Homework 125 points total
Preliminary LaTex Assignment 15 points
Portfolio entry 35 points
2 Midterms: 100 points each, 200 points total
Final: 150 points

Grades:

A 460-500 points
A- 445-459 points
B+ 430-444 points
B 405-434 points
B- 370-404 points
C+ 355-369 points
C 310-354 points
C- 300-309 points
D 250-299 points
F below 250 points

University Policies

Students should be familiar with the “General Regulations and Procedures" in the CSUSB Bulletin of Courses for the university’s policies on course withdrawal, cheating, and plagiarism.

Classroom Protocol

1. You are responsible for all material covered and announcements given in the class and/or posted on the Blackboard.
2. Cell phones, laptops, iPods/mp3 players, and other devices capable of electronic communication must be **turned off and not visible** during lectures and exams (no texting please). Ipods and such may **not** be used as calculators on exams.

Important Dates

Summer 2012 Grad check deadline: Jan. 3
Last day to add open classes without permission: Jan. 13 MyCoyote
Martin Luther King Holiday observed (campus closed): Jan. 14 – 16
Census (Last day to drop/add with permission): Jan. 30 MyCoyote
Fall 2012 Grad check deadline, Feb. 1
Thesis First Format Review Deadline, February 17

Support for Students with Disabilities

If you are in need of an accommodation for a disability in order to participate in this class, please contact Services to Students with Disabilities at UH-183, (909)537-5238.