MATH 450: Geometry

Fall 2010, 3 Credits, MWF 2.00 p.m. MRC 418

Instructor: Dr Michael Wodzak, Associate Professor of Mathematics
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Hours: Daily 9-10, and by appointment

Course Description: Topics in Euclidean and other geometries;

Foundations of geometry; Place of Euclidean geometry among other geometries.
Prerequisite: A grade of C or higher in MATH 260.

OBJECTIVES: Students will

-become acquainted with historical developments in geometry
-explore the many applications of geometry in various areas of mathematics
-provide a variety of geometric concepts and tools for use in other branches of mathematics
-present Euclidean geometry as a mathematical system and as one of several geometries
-present geometry as a rich source of mathematical models
-provide informal expository developments of school geometry
-challenge the prospective teacher to consider what high school geometry could be

Topics Covered: These will include but will not be limited to

Axiomatic Systems
The relationship between Geometry and Abstract Algebra
Projective Geometry
Analytic Geometry
Affine Geometry
Euclidean v. Non Euclidean Systems
Topology

Assessment Procedures:

Semester grades in this course will be awarded according to a standard scale:
(90% and above) = A
(85% and above) =AB
(80% and above) = B
(75% and above) = BC
(70% and above) = C
(65% and above) =CD
(60% and above) = D
(Below 60%) = F

Semester grades are calculated purely on a points basis, that is, the letter grades you earn on individual exams are purely guidelines for you to gauge your progress. For example, if you miss a particular grade on an exam by a certain number of points, it is still possible to make up those points (and get into that grade bracket) in other parts of the course, perhaps on the next exam. On the other hand, just because you got a good grade on one test, you should realize that you can lose enough points to get into a lower grade bracket by doing poorly in another area of the course. Once again: it is points that count.

These points will be assessed on how well you do with homework assignments and this constitutes 80% of your grade. You can improve your homework grade by keeping a journal of your ideas throughout the class. I will increase the homework part of your grade by a letter grade (as much as 8% of the total grade) for a well kept journal. There will also 20% of your grade awarded for a final project presented to the class

at the end of the semester. This grade can be improved by better than a letter (5% of the total grade) by good participation in class.

Please be aware that **THERE IS NO TEXT FOR THIS CLASS THIS SEMESTER**. This means that you will need to keep very good notes. I have a skeleton plan for where this semester will take us, but I will feel free to let the direction change if interesting topics arise. Your participation in class may well effect the directions we take, and this is all to the good. If your questions regarding a topic we are covering take us in a new direction, this shows your engagement in the material and a willingness to take that further. This is what mathematics is about and I will look on such tangents very favourably

AMERICANS WITH DISABILITY ACT: If you are a person with a disability and require any auxiliary aids, services or other accommodations for this class, please see me or Jane Eddy (MC 320, 796-3085) within ten days to discuss your accommodation needs.