Math 510; Spring 2015

Instructor: Dr. R. Nemirovsky

Office Hours: by appointment

Office: GMCS 503

Telephone: 594-6806

Class: Tuesday & Thursday. 2:00 – 3:15 (PA 119)

Email: ricardo.nemirovsky@sdsu.edu

**Course Content:** The study of Foundations of Geometry will focus on Projective Geometry. Projective Geometry will provide examples and ideas that structure all types of geometries. We will examine three areas:

1) Domains of Problems and Questions leading to the creation of a geometry,, which in the case of projective geometry consists of art, architecture and the desire to generate realistic representations.

2) Synthetic Geometry.

3) Analytic Geometry.

A primary goal of the course is for students to develop expertise at creating mathematical arguments, ones that are both convincing and that explain why such and such a statement is true (or not). Students in this course will engage in mathematical discussions with peers, explaining one’s mathematical thinking, questioning and challenging the mathematical thinking of others, and developing a sense of what constitutes an acceptable mathematical justification. The course will engage students in several creative projects interrelating projective geometry with art and will make use of innovative materials to learn mathematical visualization.

**Course format:** Class meetings will involve working in small groups on challenging problems, presenting your progress on these problems to the entire class, however tentative, and providing others with questions and comments on their presentations. There will also be in–class and out-of-class computer work with GeoGebra, Geometer’s SketchPad or 3D Cabri. As with other mathematics courses, it is extremely important that your schedule allows you to keep up-to-date on the work. If you are over-committed, something must suffer. Every theory of learning assumes that the learner is engaged, and not just a passive onlooker or a conscientious secretary. When you do not understand something, try to get it cleared up as soon as possible.

**Participation:** Participation encompasses regular class attendance and active involvement in teamwork and in classroom discussions.

**Homework:** Homework is vital and will be collected on a regular basis. Typically homework will be collected on Thursday. Late homework will not be accepted.
Evaluation:

Midterm 15%
Homework 30%
Class Quizzes: 15%
Class participation 25%
Final Exam 15%

To be assured the following grades, you need to earn

92% - 100% = A 83% - 87% = B 73% - 77% = C 63% - 67% = D
90% - 91% = A- 80% - 82% = B- 70% - 72% = C- 60% - 62% = D-
88% - 89% = B+ 78% - 79% = C+ 68% - 69% = D+ 59% and below = F

Academic Integrity: Many students find that studying with others is helpful to them, and I encourage that since it gives you extra practice at explaining your thinking. Presenting the work of others as one's own, however, is called plagiarism. Plagiarism is unacceptable in an environment devoted to learning. The penalty for plagiarism ranges from failing the piece with the plagiarism, to lowering the course grade, to failing the course, to expulsion from the university. Hence, you should not copy someone else's homework or make minor alterations and hand it in as your own--this is plagiarism.