COURSE INFORMATION
MATH 5211 FA – Fall 2006
Algebraic Geometry

This one semester reading course is a Master's graduate course that covers the basics of algebraic geometry.

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Text	*Elementary Algebraic Geometry,* by Klaus Hulek

Course Content.   Algebraic geometry is a rich and old field of mathematics. We introduce the basic concepts and techniques of algebraic geometry. This class should be seen as the first step into the wonders of algebraic geometry. The main text for this course will be *Elementary Algebraic Geometry* by Hulek. You should, however, supplement your reading with other books. Some standard references include:

1. R. Hartshorne, *Algebraic Geometry.*
2. M. Reid, *Undergraduate Algebraic Geometry.*
3. I. Shafarevich, *Basic Algebraic Geometry 1,2.*
4. K. Ueno, *Algebraic Geomtetry 1*

The goal of this reading course is to cover all the chapters of Hulek's book except Chapter 5.

Course Requirements. This reading course will actually be a mixture of lectures by myself, the students, and will also involve problems both from Hulek's book and other soures. Our goal is to cover one to two sections of the text each week.

Since this is a reading course, you will be responsible for reading and learning the material primarily on your own. We will meet one to two times a week (time and place to be determined) for an hour to discuss the new section and to discuss any problems you may have had on the material in the previous week.

I will assign a number of questions from each section (see attached list). You will be required to hand in your written solutions on the due date given. You must neatly write up your solutions in a correct mathematical way (for example, as you learned in ring and group theory). Not only will you be graded on your solutions, you will be graded on your proof write up. I will use the following grading scheme:

5 pts	A correct solution and a well written proof.
4 pts	Most of the required ingredients are present, but there are a few technical problems with the solution.
3 pts	Some of the needed ideas are present. However, the solution either lacks the final conclusion or has some problems in the exposition.
2 pts	The proof has at most one or two of the needed ideas and/or the proof is poorly written.
1 pt	An attempt at the solution has been made, but there is a major flaw in the logic of the proof, or the proof is not well written.
0 pts	Little or no progress is made toward the solution.

An exercise that receives a mark of 3 or less can be rewritten and submitted for a new grade. A remarked exercise will receive a maximum of 4 points. For example, if on your first submission of an exercise you receive 2 points out of 5, you can rewrite the exercise (using the suggestions I gave you) to attain a higher mark. However, the maximum you can now receive on this exercise is 4 out of 5. A rewrite can be done at anytime (until the last day of class) and at most one time for any specific

problem. When handing in an remarked assigment, you must include the original assignment so I can compare the two, and more importantly, up-date your mark!

Grading. I will use the following grading scheme

10% – Presentations and lectues
70% – Homework Assignments
20% – Final (Take Home Exam)

Schedule and Homework Questions.

The following is a rough guide of the schedule we will follow. You should make every attempt to stick to this schedule. Homework will be given in class.

Week 1 Chapter 0 and 1.1
Week 2 Chapter 1.1 and 1.2
Week 3 Chapter 2.1 and 2.2
Week 4 Chapter 2.3 and 3.1
Week 5 Chapter 3.2
Week 6 Chapter 4.1
Week 7 Chapter 4.2
Week 8 Chapter 4.3 and 4.4
Week 9 Chapter 6.1
Week 10 Chapter 6.2
Week 11 Chapter 6.3
Week 12 Chapter 6.4