Algebra 1, Fall 2006

Syllabus

(Preliminary version, July 22, 2005)

Instructor: Alex Martsinkovsky, 471 Lake, x. 5510, alexmart at neu dot edu

Office hours: By appointment.

Texts: *Linear Algebra* by S. Lang (★★★☆☆)

Algebra by S. Lang (★★★☆☆).

Supplementary reading:

Intro to Commutative Algebra by M. Atiyah and I.G. Macdonald, (★★★★★),

Noncommutative rings by I. Herstein (★★★★☆).

Rings and Modules by Berrick and Keating. (★★★★☆)

Functors and Categories by Berrick and Keating (★★★★☆)

The course will cover the following topics.

Gauss-Jordan elimination, the general linear group, the Jordan normal form, tensor product of vector spaces, the Kronecker product of matrices, categories and functors, tensor, symmetric, and exterior algebra of a vector space, bilinear and quadratic forms, the A - D - E classification.