SYLLABUS: **Math 211** **Don Faust**

INTRODUCTION TO
MATRIX THEORY AND LINEAR ALGEBRA

Matrix theory and linear algebra is an area of mathematics which provides a broad array of systems and techniques which have applications in a wide variety of problem areas. A primary focus will be to understand well these systems and techniques, and to examine how they can be successfully applied. In addition, a very important and positive aspect of this course is that the level of abstraction of this material is substantial, for example involving vector spaces and their associated structure-preserving mappings, linear transformations. We will endeavor to use this level of abstraction as a 'stepping stone of understanding', leading the successful student to being well-prepared to understand at substantial depth what subsequent courses in mathematics will have to offer. With this course, much of what is indeed very beautiful in mathematics begins to become accessible.

More generally, the following broad perspective may be helpful to you. The fundamental tools of mathematics provide a rich storehouse of models for the representation and solution of many problems. Making intelligent use of these models involves both (1) developing a facility for analyzing problems and casting them in ways which, where appropriate, make good use of these models of mathematics, and (2) developing a facility for working with these models themselves. Our course will take us through a representative sample of these tools of mathematics, and will concentrate on both aspects (1) and (2) delineated above. It can be a very exciting journey (if your involvement is sincere and includes both good class attendance and a parallel daily commitment to hammering things out on your own through daily study and problem-solving), at the end of which you will find not only that your mathematical maturity has been substantially enriched, but also that the general analytical skills you bring to bear in the broader arena of your daily life will be substantially enriched as well.

Text: **Linear Algebra and its Applications**
by LAY

Evaluation:

Firstly, in addition to ungraded daily assignments, there will be a sequence of graded SUBMITTED ASSIGNMENTS which can be resubmitted repeatedly until satisfactory.

Secondly, there will be three mid-semester exams and a final exam. Only very exceptional circumstances could justify missing an exam; in these rare cases, permission must be requested in advance, and a make-up exam **(**usually oral) will be arranged for later in the semester.

The evaluation framework is as follows (please note especially the dates, already fixed, when the three mid-semester exams will take place):

Exam 1:	Wednesday	3 Oct	200 points
Exam 2:	Wednesday	31 Oct	200 points
Exam 3:	Wednesday	28 Nov	200 points
Final Exam:			350 points
Submitted Assignments:			
to be submitted en masse on Mon 3 Dec for grade recording			50 points
Total:			1000 points

Grading:

90-100%, A; 80-89%, B; 70-79%, C; 60-69%, D; 0-59%, F. The grading may be less stringent, but not more stringent, than this.

Note regarding special needs:

If you have a need for any disability-related accommodations or services, please inform the Coordinator of Disability Services Office in 1104 University Center (227-1737). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.