Linear Algebra I (Math 265-002) — Spring, 2013

Location and Time: 109 Bouillon, MTWF, 11:00 ─ 11:50 am

Instructor: Dr. Dan Curtis

Office: 107a Bouillon

Office Hours: MWF 2:00 – 4:00 pm and by appointment.

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Final Exam: Friday, June 7, 2013, 10:00 am ─ Noon.

Textbook: **Linear Algebra with Applications** by Steven J. Leon, Eighth Edition.

Calculator: A calculator with some matrix capabilities will be needed for this course. The TI-83+ is recommended but many others will do. Certain classroom demonstrations will be given using the TI-84+, so if you have a different calculator you will have to figure out how your calculator does things.

Course Content: The course will cover selected material from chapters 1-6 of the text, together with classroom handouts and additional material on applications.

Course Conduct: You are expected to attend class daily. Homework will be assigned, but will not be graded. However, if you expect to do well in this course, you must do the homework. Time will be available during class to discuss the homework problems and your instructor is available during office hours Use will be made of calculators and computers during class, on homework, and on exams. I will often use the software system *Mathematica* for classroom demonstrations. Although you may not have this package, it is available in the Bouillon 103 computer lab and in the Library, room 154 lab.

Learner Outcomes: Upon successful completion of this course, the student will understand:

- the concept of a linear system and the idea of representing a linear system in terms of matrices; the notions of coefficient matrix and augmented matrix of a linear system;
- the method of gaussian elimination for solving linear systems and the application and computation of reduced row-echelon form;
- the various algebraic operations that can be performed on matrices and their use in the study of linear systems;

- the concept of determinant, its significance, basic properties and methods for computing determinants;
- the concept of vector space; the concept of a subspace and important examples of subspaces, such as the null space and column space of a matrix;
- the concept of orthogonality in $\mathbb{R}^n$ and some applications;
- the concepts of spanning set, linear independence and basis;
- basic theorems about bases and dimension;
- the concept of a linear transformation and their representation by matrices;
- eigenvalues and eigenvectors of a linear transformation and applications.

Grading: Your course grade will be determined by the following:

1. Three 100-point, in-class exams. The dates of these exams are found on the **Course Schedule** part of this syllabus. Only your best two scores will count, that is, your lowest score will be dropped.

2. A final exam worth 100 points. (The final exam cannot be dropped.)

A perfect score on the above categories would result in a total of 300 points. Your course grade will be determined by the percentage p of these points you earn, according the following scale.

$90 \le p$	A	$65 \le p < 77.5$	C
$89 \le p < 90$	A-	$64 \le p < 65$	C-
$87.5 \le p < 89$	B+	$62.5 \le p < 64$	D+
$80 \le p < 87.5$	B	$50 \le p < 62.5$	D
$79 \le p < 80$	B-	$p < 50$	F
$77.5 \le p < 79$	C+		

Policy on Missed Exams: No makeup exams will be given. If you miss an exam, it will be the one you drop. You must take the final to pass the course (that is, you can't drop the final.)

Policy on Partial Credit on Exam Problems: In cases where an exam question is not answered correctly, partial credit may be given. This will only be done in cases where the attempted solution was substantially correct, both with respect to method and computations. Partial credit will not be given simply because something that was written was correct; a correct line of attack and generally correct calculations are required.

Policy on showing work to receive credit: Every answer given must be justified by showing how it was obtained, with enough detail to convince the reader that the answer was obtained in a logically correct manner. **If sufficient work is not shown, no credit will be given for the answer, even if the answer is correct.**

Course Schedule (38 class days)

Date	Class Activity	Date	Class Activity
03/25		05/06	
03/26	Classes begin	05/07	
03/27		05/08	
03/28		05/09	
03/29		05/10	
04/01		05/13	
04/02		05/14	
04/03		05/15	
04/04		05/16	
04/05		05/17	
04/08		05/20	
04/09		05/21	
04/10	Exam 1	05/22	Exam 3
04/11		05/23	
04/12		05/24	
04/15		05/27	HOLIDAY: Memorial Day
04/16		05/28	
04/17		05/29	
04/18		05/30	
04/19		05/31	Last day of classes
04/22		06/03	Prof. Dev. Day
04/23		06/04	
04/24		06/05	
04/25		06/06	
04/26		06/07	Final Exam: 10:00 am-Noon
04/29			
04/30			
05/01	Exam 2		
05/02			
05/03			