Math 217: Linear Algebra
Winter 2016

Webpage: Canvas `https://umich.instructure.com/courses/33181`

Required text:	**Instructors:**	**Office:**
Linear Algebra with Applications (5th edition) by Otto Bretscher	Ayala, Diego (003)	EH 1851
	Bennett, Hanna (001)	EH 1834
	Daurat, Sandrine (008/009)	EH 1847
Prerequisites:	Fernandez-Breton, David (004)	EH 4060
Math 215, 255, or 285.	Jeffries, Jack (002)	EH 1825
	Nguyen, Dinh-Liem (007/010)	EH 4863
	Schneider, Scott (006)	EH 3851
	Smith, Karen (005)	EH 3074

Course topics and goals:

This course is designed to give potential math majors, and those interested in the theory behind the mathematics, a rigorous introduction to linear algebra. The topics we will cover are, roughly, systems of linear equations; matrix algebra; vectors, vector spaces, and their subspaces; geometry of $\mathbb{R}^n$; linear dependence, bases, and dimension; linear transformations; eigenvalues and eigenvectors; diagonalization; inner products.

We will not only study the above concepts and their applications, but also the methods by which one proves the foundational results in linear algebra. Consequently, this course has two major goals: to learn linear algebra and to learn how to write a rigorous mathematical proof. Students should leave this course prepared to use linear algebra as well as to succeed in further theoretical courses in mathematics. This is a difficult course, and those interested only in the computational side of linear algebra should consider Math 214 or 417.

Grading:

Your course work will be weighted out of 200 points, broken down as follows:

Written homework:	40 pts
Part A:	= 15 pts
Part B:	+ 25 pts
Web homework:	15 pts
Quizzes:	25 pts
Midterm 1:	35 pts
Midterm 2:	35 pts
Final exam:	50 pts

There will be 11 written homework assignments and up to 11 quizzes. We will drop one Part A score, one Part B score, and one quiz score, the lowest in each category.

Written Homework:

Homework assignments will generally be assigned (on the Canvas course page) each Friday and due the following Friday in class. **Written assignments are due at the beginning of class.**

The written homework consists of two parts which must be written up and turned in separately. **Part A** will consist of short problems from the textbook. **Part B** will be several longer problems each requiring some insight and a carefully prepared solution.

You are encouraged to work together on homework assignments, but **you must write up your solutions independently**. Your solutions should be written clearly, legibly, showing all of your work, and fully explaining your reasoning. *You should really think of 217 as a writing course.*

Webwork:

It is your responsibility to check the website regularly to determine when new webwork assignments and reading questions are available. The link to the web exercises for Math 217 can be found at

$$https://instruct.math.lsa.umich.edu/webwork2/ma217-w16/$$

Note that the due dates for reading questions may vary by course section.

Quizzes:

There will be regular quizzes. Quizzes will be short, in-class assignments to test comprehension of recent material. A quiz could involve definitions, True/False questions, computations or short proofs. Please consult your instructor for the specific details regarding the quizzes in your section.

Exams:

You will have two midterm exams and one final exam. No calculators, note cards, books, or other outside materials are allowed on any exam.

First Midterm:	Wednesday, February 17, 6:00-8:00pm
Second Midterm:	Wednesday, March 30, 6:00-8:00pm
Final Exam:	Thursday, April 21, 10:30am-12:30pm

Make-up exams will be available only to students who have a serious emergency, a strongly compelling personal reason, or grave academic conflict. Grave academic conflict is defined as having two examinations scheduled so that you cannot physically attend both, or having four or more examinations scheduled on the same day. All conflicts will be verified through the undergraduate office.

Students with special exam-taking requirements should contact their instructor as soon as possible and provide their SSD form within the first two weeks of the semester.

Academic dishonesty policy:

Do not cheat! Students who cheat will be penalized. Serious misconduct may have consequences beyond merely failing the course.