

*Repetitio est mater studiorum*  
(Repetition is the mother of study).  
-Latin Wisdom

*Interest comes with success,  
and success comes with hard work.*  
-Professor Yaroslav Tagamlizki

## University of Connecticut MATH 2210-004/008, Applied Linear Algebra

### Instructor Information

**Instructor:** Bobby McDonald

**Office:** Monteith, Room 120

**Email:** robert.j.mcdonald@uconn.edu (use this only for logistical questions)

**Piazza:** piazza.com/uconn/fall2018/math2210q004008/home

**Office Hours** (tentative):

**Monday:** 11:30-1:00

(other hours to be determined, soon)

**How to Contact Me:** Any questions about class material can be posted to Piazza, by clicking on “New Post,” choosing a folder and summary, and verbalizing your question. Everyone in the class can see your question, but you can post anonymously, so that only I know who asked the question (I won’t blow your spot, I promise). If you have any logistical questions, feel free to use my email!

### Book

You will need to obtain a copy of the textbook, which is [David C. Lay: Linear Algebra and Its Applications](#). Any edition you can find from the 3rd on should be fine for this class, so feel free to find a used copy.

### Piazza

I've set up a course for us on Piazza. Use the Q&A section of this site for questions about material and homework assignments. This way, everyone can benefit from your question and its answer. Feel free to post anonymously if you are uncomfortable! Try to contribute answers, too! This site shines if we all work together to answer each other's questions. I will always be ready to step in and clarify things or give a thumbs up, especially if no one else answers. The nicest thing about Piazza is its convenient math-editing mode, so I'll be using it to post any hints for homework problems, and any extra notes I think you need from class. Please use it often!

### Grading

Assessment	Time/Loc	Percent
Homework	due every Monday, start of class	10
Quizzes	every Friday, in class, with a few exceptions	20
Exam 1	Friday, October 5, in class (and take-home)	20
Exam 2	Friday, November 9, in class (and take-home)	20
Final	during finals week, TBA	25
Participation	Continuous	5

(descriptions on next page)

**Homework:** Every week, I will assign problems from the book to complete and hand in the following Monday. I'll post these problems on HuskyCT, and be sure to provide a due date. Problem sets will be **graded on completion**, but I will pull problems from the homework for the quiz on Friday. Please staple your assignments, and only write on one side of the paper. Because the homework grade is completion based, there are no extensions. It's my expectation, also, and your responsibility, that you keep ahead of each class by reading the section we will cover, so you can come prepared.

**Quizzes:** With a few exceptions there will be quizzes every Friday at the beginning of class. There are no quizzes in the first or last week of classes (check the schedule for a better picture). In general, the quizzes will be on whatever was covered the previous week. During the week of an exam, the quiz will be on Wednesday, and will be a **practice** problem graded solely on effort. It's possible that some of the quizzes will be done in groups, but I will be clear when that is the case.

**Exams:** The first exam will be on Friday, October 5, and will cover chapters 1 and 2. The second will be on Friday, November 9, and will cover chapters 3 and 4. Since other sections have a 75-minute class for exams, these two exams will consist of a 50-minute, in class portion (worth 15/20 percent), and a take home portion that should take 25 minutes to complete (worth 5/20 percent).

**Final Exam:** The final will be during a 2-hour block in finals week, so it won't have any take home portion. It is cumulative, covering chapters 1-6, with an emphasis on new material (chapters 5 and 6).

**Participation:** As an undergrad, I never liked participation grades because it was never clear what I was supposed to be doing to earn them! I really want you all to be active in our class, but there are many ways to do this, and not all of them involve putting yourself on the spot in front of your classmates. Your participation grade will be 5% of your grade, and consist of 30 points. You can get full credit by getting at least two points a week (there are 15 weeks). You can earn a point by doing any of the following:

- Ask or answer a question in class (just participate in general)
- Post a (meaningful) question or answer on Piazza
- Come to office hours
- Come to a review

Of course, there are many other ways to earn participation points, but these are the ones that come to mind. If you come up with anything else, be sure to let me know and we'll keep a dynamic list! The point is that I want you to be active in our class, and I want it to be clear what I mean by that.

### Special Accommodations

Student Athletes and Students with Disabilities should inform your instructor of your commitments as an athlete, any special needs that you have, etc. within the first three weeks of the semester. You will be expected to bring in a letter from the Athletics Department or the Center for Students with Disabilities. The University Senate passed a motion about religious observances which stipulated that Students anticipating a conflict should inform their instructor in writing within the first three weeks of the semester, and prior to the anticipated absence, and should take the initiative to work out with the instructor a schedule for making up missed work. For conflicts with final examinations, students should, as usual, contact the Dean of Students.

## Schedule (tentative)

After quizzes on Friday, we'll finish up anything we need to from that week. After that, time permitting, we'll have a more student-led discussion, with questions about that week's material and homework.

Week	Day	What we'll do in class
1	Mon 8/27	1.1 Systems of Linear Equations
	Wed 8/29	1.2 Row Reduction and Echelon Forms
	Fri 8/31	1.3 Vector Equations
2	Mon 9/3	(NO CLASS) Labor Day (start reading 1.4 and 1.5)
	Wed 9/5	1.4 The Matrix Equation $Ax = b$
	Fri 9/7	Quiz (1.1-1.3), 1.5 Solution Sets
3	Mon 9/10	1.7 Linear Independence
	Wed 9/12	1.8 Introduction to Linear Transformations
	Fri 9/14	Quiz (1.4-1.5)
4	Mon 9/17	1.9 The Matrix of a Linear Transformation
	Wed 9/19	2.1 Matrix Operations
	Fri 9/21	Quiz (1.7-1.8)
5	Mon 9/24	2.2 The Inverse of a Matrix
	Wed 9/26	2.3 Characterizations of Invertible Matrices
	Fri 9/28	Quiz (1.9-2.1)
6	Mon 10/1	2.5 Matrix Factorizations
	Wed 10/3	mock quiz (2.2-2.5), review for exam
	Fri 10/5	EXAM 1 (covers chapters 1 and 2)
7	Mon 10/8	3.1 Introduction to Determinants
	Wed 10/10	3.2 Properties of Determinants
	Fri 10/12	Quiz (3.1)
8	Mon 10/15	3.3 Cramer's Rule, Volume, and Linear Transformations
	Wed 10/17	4.1 Vector Spaces and Subspaces
	Fri 10/19	Quiz (3.1-3.2)
9	Mon 10/22	4.2 Null Spaces, Column Spaces, and Linear Transformations
	Wed 10/24	4.3 Linearly Independent Sets; Bases
	Fri 10/26	Quiz (3.3-4.1)
10	Mon 10/29	4.4 Coordinate Systems
	Wed 10/31	5.1 Eigenvectors and Eigenvalues
	Fri 11/2	Quiz (4.2-4.3)
11	Mon 11/5	5.2 The Characteristic Equation
	Wed 11/7	mock quiz (4.4), review for exam
	Fri 11/9	EXAM 2 (covers chapters 3 and 4)
12	Mon 11/12	5.3 Diagonalization
	Wed 11/14	5.4 Eigenvectors and Linear Transformations
	Fri 11/16	Quiz (5.1-5.2)
13	Mon 11/19	(NO CLASS) Thanksgiving Break
	Wed 11/21	(NO CLASS) Thanksgiving Break
	Fri 11/23	(NO CLASS) Thanksgiving Break
14	Mon 11/26	6.1 Inner Product, Length, and Orthogonality
	Wed 11/28	6.2 Orthogonal Sets
	Fri 11/30	Quiz (5.1-5.4)
15	Mon 12/3	6.3 Orthogonal Projections
	Wed 12/5	6.4 The Gram-Schmidt Process
	Fri 12/7	Review