

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/spring2019/math2210q007011

YouTube: mathrjrm

Office Hours (tentative):

Mon/Tues/Wed: 9:30-10:30

How to Contact Me: If you have any logistical questions, feel free to use my email! Otherwise, any questions about the material should be posted on Piazza (see below).

Book

You do not need to purchase a book for this course. Pearson has offered us a **free** membership to MyMathLab, which includes an interactive online version of the book, and also a normal e-book version that can be used offline. If you want a hard copy of the book, buy a used book, any edition is fine.

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'll be using it to post course materials, and any extra notes I think you need from class. Please use it often!

YouTube

My YouTube channel is mathrjrm. I'll use this channel to upload selected examples from the notes, or extra problems to work on. I may also occasionally post material and use class time to do group work on a worksheet to be handed in (see below). Of course, I'll let you know when I do this.

Grading

Assessment	Time/Loc	Percent
Homework	due every Monday night at 11:59pm	3+3 (see below)
Worksheets	occasional (announced)	10
"Project"	assigned before spring break, due at end of semester	5
Quizzes	every Monday at the beginning of class	10
Exam 1	Monday, March 5, Chapters 1 and 2	20
Exam 2	Monday, April 9, Chapters 3 and 4	20
Final	during finals week, TBA	25
Participation	continuous	5

(descriptions on next page)

Homework: Every week, I will assign problems on MyMathLab for the sections covered that week. Unless otherwise stated, this will be due on Monday night at 11:59p. Homework will be graded 50% for completion, and 50% for accuracy (note that there are six points here, one is for extra credit!). If you cannot complete the homework on time, you can still do it, but the completion grade will be zero, and you'll be graded only on accuracy. Note that unfortunately MyMathLab **cannot** compute a completion grade, this is something I have to do on my own. I'll compute it by the end of the semester.

Worksheets: Occasionally, I will assign videos to watch and follow up worksheets either to complete at home or work on in class. We'll talk about this more later, but sometimes there will be time in class to work on these assessments in groups (or on the board) if you want.

"Project": Sometime before Spring Break, I will assign a **light** project on a topic that I don't think we'll be able to cover, due at the end of the semester. I'll give you a few topics to choose from. Most will involve reading an extra section or watching a video and doing something with the material you learn. Project is in quotes because **this not meant to take up a lot of your time**. It's only 5% of your final grade, and is graded holistically. I just want you to do some independent inquiry on a subject that interests you.

Quizzes: With a few exceptions there will be a ten or fifteen minute quiz every Monday 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.

Exams/Final: There will be two in class exams. The first is on Monday, March 5, and will cover Chapters 1 and 2. The second is on Monday, April 9, and will cover Chapters 3 and 4. The final exam (during finals week, time TBA) is cumulative with an emphasis on Chapters 5 and 6.

Participation: Participation in this class is absolutely essential! Please come to class prepared to ask questions or answer mine! Here are some of the ways you can earn participation:

- Participate in class or on Piazza (e.g. with a meaningful question/answer)
- Come to office hours or a review
- Participate in group work

Of course, there are many other ways to earn participation points, these are ones that come to mind.

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)

The following schedule is tentative. We will likely cover more topics than what is listed here (more on that later). Quizzes will be every Monday, unless otherwise announced or listed below, will typically cover material from the prior week. Reviews for exams are to be determined.

Week			Objectives
1			Material: 1.1 Systems of Linear Equations 1.2 Row Reduction and Echelon Forms
1/22	&	1/24	Quiz: n/a
2			Material: 1.3 Vector Equations 1.4 The Matrix Equation $Ax = b$
1/29	&	1/31	Quiz: 1.1 and 1.2
3			Material: 1.5 Solution Sets of Linear Systems 1.7 Linear Independence
2/5	&	2/7	Quiz: 1.3 and 1.4
4			Material: 1.8 Introduction to Linear Transformations 1.9 The Matrix of a Linear Transformation
2/12	&	2/14	Quiz: 1.5 and 1.7
5			Material: 2.1 Matrix Operations 2.2 The Inverse of a Matrix
2/19	&	2/21	Quiz: 1.8 and 1.9
6			Material: 2.3 Characterizations of Invertible Matrices 2.5 Matrix Factorizations
2/26	&	2/28	Quiz: 2.1 and 2.2
7			Material: 3.1 Introduction to Determinants 3.2 Properties of Determinants
3/5	&	3/7	EXAM: Chapters 1 and 2
8			Material: 3.2 Properties of Determinants 3.3 Cramer's Rule, Volume, and Linear Trans
3/12	&	3/14	Quiz: 3.1 and 3.2
9			SPRING BREAK!
3/19	&	3/21	
10			Material: 4.1 Vector Spaces and Subspaces 4.2 $\text{Nul}(A)$, $\text{Col}(A)$, and Linear Transformations
3/26	&	3/28	Quiz: 3.1, 3.2, and 3.3
11			Material: 4.3 Linearly Independent Sets; Bases 4.4 Coordinate Systems
4/2	&	4/4	Quiz: 4.1 and 4.2
12			Material: 5.1 Eigenvectors and Eigenvalues 5.2 The Characteristic Equation
4/9	&	4/11	EXAM: Chapters 3 and 4
13			Material: 5.3 Diagonalization 5.4 Eigenvectors and Linear Transformations
4/16	&	4/18	Quiz: 5.1 and 5.2
14			Material: 6.1 Inner Product, Length, and Orthogonality 6.2 Orthogonal Sets
4/23	&	4/25	Quiz: 4.3 and 5.4
15			Material: 6.3 Orthogonal Projections 6.4 The Gram-Schmidt Process
4/30	&	5/2	Quiz: n/a