Linear Algebra I

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Email: Erica_Yankowskas@uml.edu   **Office Hours:** MWF 1pm-1:50pm
Schedule: MWF 2-2:50PM   **Classroom:**   Olsen 408

Textbook: ***Linear Algebra and its Applications,*** *by David C. Lay, Steven R. Lay, and Judi J. McDonald. 5th edition ©2016 Pearson*; and the accompanying MyMathLab software.

*****Note:** *You can purchase MyMathLab access either in a package with the textbook or separately (reduced price) at the UML bookstore. Please note that in either case, you will have access to the complete textbook online once you have registered for MML-* <u>*NOT required to purchase textbook*</u> ☺

Online Resources:
- ***Blackboard:***   [*https://uml.umassonline.net*](https://uml.umassonline.net)
  - *This is where I will post all PDFs of my lecture notes &Quiz/ Exam solutions, as well as, video solutions to any HW Questions received via email* ☺
- ***Khan Academy:*** [*https://www.khanacademy.org/math/linear-algebra*](https://www.khanacademy.org/math/linear-algebra)
- ***Patrick Videos:*** [*http://patrickjmt.com/#linear-algebra*](http://patrickjmt.com/#linear-algebra)
- ***Trev Tutor:***   [*https://trevtutor.com/algebra/linear-algebra/*](https://trevtutor.com/algebra/linear-algebra/)

Course Format:

1. <u>**Attendance**</u>: Students are expected to attend all classes and are responsible for all material covered. *Your participation is encouraged.* You learn better by asking questions, discussing the topics with your peers, and doing the work on your own ☺

2. <u>**Quizzes**</u>: There will be 20-minute quizzes every Friday. <u>*There are NO make-up quizzes; a missed quiz is a 0%.*</u> At the end of the semester, I will drop your two lowest quiz scores and average the remaining scores to give your final quiz grade. ***No calculators or cheat sheets allowed!***

   *****Testing Accommodations:** *Assuming eligibility, at least one week prior to any announced quiz, arrangements must be made with me for extended time. Students are responsible for presenting proper documentation.*

3. <u>**Homework:**</u> MyMathLab (MML) assignments will consist of problems from each section of the textbook. Students are allowed unlimited attempts at each question and have access to all the extra-help resources on MML for each assignment. Registration instructions are on the last page of the syllabus.
   - *MML Course ID:*   **Yankowskas61128**

   As a student, it is your responsibility to ensure you are being proactive in completing each assignment by the required due date. Due dates can be found on the MyMathLab Dashboard.

   *****Note:** *To be fair to all participants of the course, homework extensions will not be granted;* <u>*NO EXCEPTIONS*</u>.

4. **Exams**: There will be two 50-minute exams throughout the semester during our scheduled lecture time:
   - *Exam 1:*   *Friday, February 21st*
   - *Exam 2:*   *Friday, March 27th*

   It is your responsibility to plan to ensure that you can make these exam times!
   Only documented medical/personal reasons will allow for a make-up exam. ***NO calculators, NO cheat sheets.***

   *Testing Accommodations: *Assuming eligibility, at least two weeks prior to any announced exam, arrangements must be made with the instructor for extended time. Students are responsible for presenting proper documentation.*

   *Note: *To be fair to all participants of the course, students taking make-up exams do NOT qualify for bonus points; <u>NO EXCEPTIONS</u>.*

5. **Final Exam:** There will be a 3-hour final exam at the end of the semester. The Final Exam is comprehensive and mandatory; scheduled by the University.
   - *Final Exam:*   *TBA*

   As a student, it is your responsibility to plan to ensure that you can make these exam times!
   Only documented medical/personal reasons will allow for a make-up exam. ***NO calculators, NO cheat sheets.***

   * Testing Accommodations: *Assuming eligibility, arrangements must be made with the instructor at least two weeks prior to the end of scheduled classes. Again, students are responsible for presenting proper documentation.*

   *CAUTION: *The Spring 2020 Final Exam period ends Saturday, May 9th. <u>Do NOT make travel arrangements until after this date!</u> Students traveling before the University scheduled final exam date do **NOT** qualify for a make-up.*

Grade Computation:

Each Exam will be weighted 25% of the final average; your Final Exam will be weighted 25%. Your Online HW will be weighted 10% of your final average; your Quiz average will count for the remaining 15%. Your overall course grade will be assigned based on the following rubric:

Average:	[0, 63)	[63, 67)	[67, 70)	[70, 73)	[73, 77)	[77, 80)	[80, 83)	[83, 87)	[87, 90)	[90, 93)	[93, 100]
Grade:	F	D	D+	C-	C	C+	B-	B	B+	A-	A

*Note: You need a 63% or better to pass this course (this grade may vary depending on your major)

Academic Integrity:

UML has a zero-tolerance policy on cheating. Procedures about academic integrity are described in the university catalog at http://www.uml.edu/Catalog/Undergraduate/Policies/Academic-Policies/Academic-Integrity.aspx.

As necessary, sanctions may be imposed on any student who has committed an act of academic dishonesty. In such cases, the student will be informed within 14 days after the incident has been recognized and the provost's office will be notified within 10 days after student notification.

Student Disabilities Services:

UMass Lowell is committed to assisting students with documented disabilities by providing reasonable accommodations in all online courses. Students with documented disabilities should contact the Student Disability Services at: http://www.uml.edu/student-services/Disability/default.aspx.

Linear Algebra I Syllabus (Section & Topical Coverage):

§1.1   Systems of Linear Equations

§1.2   Row Reduction and Echelon Form

§1.3   Vector Equations

§1.4   The Matrix Equation, $A\vec{x} = \vec{b}$

§1.5   Solution Sets of Linear Equations

§1.7   Linear Independence

§1.8   Introduction to Linear Transformations

§1.9   The Matrix of a Linear Transformation

Exam 1 (covers: 1.1-1.9)

§2.1   Matrix Operations

§2.2   The Inverse of a Matrix

§2.3   Characterizations of an Invertible Matrix

§2.5   Matrix Factorizations

§3.1   Introduction to Determinants

§3.2   Properties of Determinants

§3.3   Cramer's Rule, Volume, and Linear Transformations

Exam 2 (covers: 2.1-3.3)

§4.1   Vector Spaces and Subspaces

§4.2   Null Spaces, Column Spaces, and Linear Transformations

§4.3   Linearly Independent Sets; Bases

§4.4   Coordinate Systems

§4.5   The Dimension of a Vector Space

§4.6   Rank

§4.7   Change of Basis

Cumulative Final Exam (covers: 1.1-4.7)

Exam Content Breakdown and Corresponding MML Due Dates:

While the content of each exam is determined, *the dates of ALL Exams are TENTATIVE & subject to change!*

Note: In the case that an exam date is changed, the due dates of the corresponding MML assignments will be changed accordingly. Announcements will be made in class and on Blackboard.

Sections to be covered on Exam 1 (2/21): 1.1, 1.2, 1.3, 1.4, 1.5, 1.7, 1.8, 1.9
Corresponding MML assignments open 1/21 at noon
Corresponding MML assignments are due 2/22 at noon

Sections to be covered on Exam 2 (3/27): 2.1, 2.2, 2.3, 2.5, 3.1, 3.2, 3.3
Corresponding MML assignments open 2/24 at 12AM
Corresponding MML assignments are due 3/28 at noon

Remaining Sections to be covered on Final: 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7
Remaining MML assignments open 3/30 at noon
Remaining MML assignments are due 5/6 at noon

Please be mindful that mastery of the material covered in this course requires 2+ hours of study/practice problem solving EVERY day.

Important Dates:

- **January 27th:** Last Day to ADD/DROP

- **February 17th:** University Closed (President's Day)

- **February 18th:** Monday Class Schedule

- **March 6th- 13th:** Spring Recess (University Closed)

- **April 7th:** Last Day to Withdraw with a W on transcript

- **April 20th:** University Closed (Patriot's Day)

- **May 1st:** Last Day of Classes

- **May 2nd:** Reading Day (no classes or exams)

- **May 4th-9th:** Finals Week

    o *Please do NOT book flights home until AFTER the Finals Schedule has been announced*

Registering for Pearson's MyMathLab:

First, make sure you have the following three things:

1. *An Email Address:*   *UML student email account or personal email account*

2. ***Course ID:***   ***Yankowskas61128***

3. **Access Code or Credit Card:** *The required access code comes either with your textbook or by itself at the UML bookstore. Alternatively, you can buy an access code directly on the MyMathLab website during registration.*

Next, get registered:

1. Go to **www.pearsonmylabandmastering.com**.

2. Under the large **Register** section on the right side of the page, and click the **Student** button.

3. Read the onscreen instructions and click **OK! Register now.**

4. Next, enter the **Course ID** for your course (listed above).

5. After this, either **Create** a new Pearson username and password, or, if you've already registered for another Pearson product (i.e. MyStatLab), **Sign In** with that username and password.

6. On the next page, click the **Access Code** button if you purchased a package with an access code sfrom the bookstore, OR purchase instant access now by clicking on the purchase options under the **Use a Credit Card or PayPal** section.

7. You are now registered! Now, it's time to sign. Go to **www.pearsonmylabandmastering.com** and click the **Sign In** button in the top right. Enter your username and password.

Need help?

Visit www.mymathlab.com/get-registered for:

- Helpful videos
- Frequently Asked Questions
- System Requirements
- Other helpful "getting started" info!

Or visit our 24/7 Technical Support site at http://247pearsoned.custhelp.com.