

MATH 349-080
MWF 12:40–1:35, PRN 325

Elementary Linear Algebra
Fall 2024

Web Page: <https://sites.udel.edu/dedwards/classes/m349f24/>
(also referenced from QR code at end of document)

Instructor: Prof. D. A. Edwards
EWG 511

Office Hours: T 1:30–2:30 R 9:30–10:30, or by appointment
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Introduction

Welcome to MATH 349! In this class you will learn both the theory and applications of linear algebra. The text for this course is *Linear Algebra: A Modern Introduction*, 4th ed., by Poole.

If you have any questions, contact me during my office hours or make an appointment. **Extra copies of handouts are available at the Web page listed above or referenced at the QR code at the end of the document.**

Technology

I do not use Canvas. Important announcements (corrections to typographical errors, etc.) will be handled by e-mail. Also at the URL

<https://sites.udel.edu/dedwards/classes/suggest/>

you will find an anonymous suggestion box.

In this class we will be using Mathematica for both homework and exams. The University has a license so that you can download your own free version; see

<https://udeploy.udel.edu/software/mathematica-for-students/>

for more details.

Homework

In most cases, homework will be distributed on Wednesdays, and will be due at the beginning of class the following Wednesday. The homework will ideally cover material up through the Friday after it is distributed. **ABSOLUTELY NO LATE HOMEWORK WILL BE ACCEPTED!** If you must miss a due date because of University business, it is your responsibility to make sure the homework gets to me *before* the due date. However, to calculate your semester-long homework average, I will drop your two lowest homework scores.

Though you may not copy directly from another's paper or use someone else's ideas as your own¹, I encourage you to discuss the homework problems with your classmates. Model homework solutions will be posted online after the assignment is due. Hopefully these will assist you in learning the material.

Homework assignments should be folded like a book with the following information on the "front cover":

Name
Math 349-080—Edwards
Assignment Number
Date

You will turn in your assignments this way so that your grade may be placed on the inside, thus ensuring your privacy. I will make every effort to ensure that your graded homework is returned in a timely manner.

Each homework assignment will consist of ten questions. Of those, some randomly selected problems will *not* be graded. For these questions, you will receive one point if you attempted the problem. For the problems that will be graded, you may receive up to four points, depending on the completeness and accuracy of your solution.

Obviously, I can assign only a select few homework problems to be turned in. Therefore, I choose ones which, if mastered, show adequate understanding of the material. The examinations will largely be based on the material covered in the homework assignments. However, you are encouraged to try other problems in the book for practice.

¹ For more details regarding academic dishonesty, see the Student Handbook (<http://www.udel.edu/stuguide/>).

Exams

There will be four exams in the course; the dates are listed on the attached schedule. **You will need a small blue book for each exam. NO MAKEUP EXAMS WILL BE GIVEN!** The first three will be 50 minutes long and will take place during a regular lecture period. The final exam will be two hours long. Each exam will contain problems which must be done using Mathematica.

When the exams are returned, they will have a numerical score and a letter grade on them. The numerical score is your score for the exam; *the letter grade is your grade for the course to that point, including all homework scores.*

Attached to each examination will be a course evaluation form, so that I may receive your suggestions for how the course could be improved.

Assessment

Your grade for the course will be determined in two stages. First your *raw score* will be calculated using the *higher* of the two algorithms:

- 1) The exams will count for 90% of your grade (final counts double), and the homework counts 10%.
- 2) The exams will count for 80% of your grade (final counts double), and the homework counts 20%.

Therefore, performing well on the homework will not only help you learn the material, it can also directly help your grade. (The vast majority of students improve their grades by using their homework scores.) Then each of the raw scores will be scaled to determine final grades.

Honors Component

The honors component of this course will involve using AI to pose and solve linear algebra problems. Further details will follow.

Tentative Schedule (Revised 11/15)

Note: This is only a tentative schedule; there may be deviations from it.

August 28–30: sections 1.1, 2.3,

August 28: Homework 1 distributed

September 2: Labor Day

September 4–6: section 1.2, vector analysis

week of September 9: section 1.2, 2.1, 2.2

September 11: Homework 1 due; Homework 2 distributed

week of September 16: sections 2.2, 2.4, 3.1, 3.2

September 18: Homework 2 due; Homework 3 distributed

week of September 23: sections 3.1–3.3

September 23: Honors Assignment 1 due

September 25: Homework 3 due; Homework 4 distributed

week of September 30: sections 3.3, 3.5, 6.1

October 2: Exam I (covers vector analysis, chapters 1 and 2, sections 3.1, 3.2)

week of October 7: sections 3.5, 6.2, 6.3

October 9: Homework 4 due; Homework 5 distributed

week of October 14: sections 5.1, 6.3, 7.1, 7.2

October 16: Homework 5 due; Homework 6 distributed

week of October 21: sections 5.1–5.3, 7.1, 7.3

October 21: Honors Assignment 2 due

October 23: Homework 6 due; Homework 7 distributed

week of October 28: sections 3.6, 6.4, 7.3

October 30: Exam II (covers sections 3.3, 3.5, 5.1, 5.2, 6.1–6.3, 7.1, 7.2)

week of November 4: sections 3.6, 6.4–6.6, 4.2

November 6: Homework 7 due; Homework 8 distributed

week of November 11: section 4.2

November 13: Homework 8 due; Homework 9 distributed

week of November 18: sections 4.1, 4.3

November 20: Homework 9 due; Homework 10 distributed

November 22: Exam III (covers sections 3.6, 4.2, 5.3, 6.4–6.6, 7.1, 7.3)

week of November 25: Thanksgiving Break

week of December 2: sections 4.3, 4.4

December 2: Honors Assignment 3 due

December 9: Formal review session

December 9: Homework 10 due; supplemental study material distributed

December 12: Informal review session

December 15: Final Exam (covers entire course, but especially sections 4.1–4.4)

Course Web Page:

