MATH 349-010 Elementary Linear Algebra
TR 9:30–10:45, EWG 207 Fall 2000
Web Page: `http://www.math.udel.edu/~edwards/download/m349/f00home.html`

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Introduction

Welcome to Elementary Linear Algebra! Since many of you are not mathematics majors, the focus of this course will be on the *applications* of linear algebra, rather than the *theory* behind it (except when explaining the theory will enhance your understanding of the concepts). I will be passing around a sheet today asking each of you what your major is. Then I will try to present examples from those subjects so that you can see how linear algebra is applied to your area of interest.

The text for this course is *Elementary Linear Algebra*, by Kolman and Hill. **The text is required**, since you will be assigned both reading and homework problems from the book. Though we will be covering most of the material in the book, I will be presenting some of the material in a different order, especially the first week. In addition, I will also be lecturing from various other sources, so class attendance and participation is necessary for successful mastery of the material. If you find that the text is unclear on some point, you may wish to consult *Linear Algebra with Applications* by Leon. This text is required for MATH 341 and has been used in the past for MATH 349.

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.**

Please turn off portable phones, pagers, etc. before entering the classroom. You may bring a tape recorder with you to class, if you wish; however, unattended tape recorders will not be permitted. There will be no makeup classes for snow days.

Electronic Communication

The Web page for this course is listed on the top of the first page. There you will find copies of handouts available for downloading, as well as any important announcements (corrections to typographical errors, etc.). Also at the URL

`http://www.math.udel.edu/~edwards/download/suggest.html`

you will find an anonymous suggestion box.

Particularly important messages regarding this course may also be e-mailed to you directly. In addition, you may send me e-mail with questions regarding the course, homework assignments, etc. For more information on how to use electronic resources, contact the Help Center (x6000).

Exams

There will be four exams in the course; the dates are listed on the attached schedule. **NO MAKEUP EXAMS WILL BE GIVEN!** The first three will be 70 minutes long and will take place during a regular lecture period. The final exam will be two hours long. Attached to each examination will be a course evaluation form, so that I may receive your suggestions for how the course could be improved. These forms will be seen only by me, so if you have comments that you wish the department to hear, please contact them directly.

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.

Homework

In most cases, homework will be distributed on Tuesdays during lecture (the first assignment is attached to this introduction), and will be due at the beginning of class the following Tuesday. The homework will cover material up through the day of its distribution. **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. Since mathematics is a subject where the material for one section builds on the section before, it is critical that you keep up to date on the homework: hence the stringent policy. However, to calculate your semester-long homework average, I will drop your two lowest homework scores. Therefore, low scores for assignments where you were pressed for time can be erased as long as you don't have too many of them.

Though you may not copy directly from another's paper or use someone else's ideas as your own, I encourage you to discuss the homework problems with your classmates. Any scientific endeavor is rarely done in a vacuum; therefore it is to your advantage to learn the benefits of collaborating. Model homework solutions will be placed on reserve in the library 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 349-010—Edwards
Assignment Number
Date

You will turn in your assignments this way so that I may put your grade 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.

Assessment

Your grade for the course will be determined in two stages. First your *raw score* will be calculated from your exam scores, with the final counting as two exams. However, if including your homework scores will improve your score, I will let them count for 20% of your grade. Therefore, doing the homework *can only help* your grade. (In the past, it has been my experience that the vast majority of students improve their grades significantly by using their homework scores.) Then each of the raw scores will be scaled to determine final grades.

Tentative Schedule

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

week of August 28: vector analysis (parts of sections 2.1, 2.2, 2.4, 2.5, 2.7, 3.1)
August 29: Homework 1 distributed
week of September 4: vector analysis, sections 1.1, 1.5
week of September 11: sections 1.2–1.6; applications of linear systems
September 12: Homework 1 due; Homework 2 distributed
week of September 18: sections 1.4, 1.6, 2.3–2.5
September 19: Homework 2 due; Homework 3 distributed
September 26: Exam I (covers vector analysis and chapter 1)
September 28: sections 2.4, 2.5, 2.7
week of October 2: sections 2.7–3.1, 3.3
October 3: Homework 3 due; Homework 4 distributed
week of October 9: sections 3.3–3.5
October 10: Homework 4 due; Homework 5 distributed
week of October 16: sections 3.5, 3.6
October 17: Homework 5 due; Homework 6 distributed
October 24: Exam II (covers sections 2.3–2.5, 2.7–3.1, 3.3–3.5)
October 26: sections 3.6–4.2
week of October 30: sections 4.1–4.3, 4.5, 4.6
October 31: Homework 6 due; Homework 7 distributed
November 7: Election Day (no lecture)
November 9: sections 4.6, 5.1
week of November 13: sections 5.1–5.4, 6.1
November 14: Homework 7 due; Homework 8 distributed
November 21: section 6.1
November 21: Homework 8 due; Homework 9 distributed
November 23: Thanksgiving (no lecture)
November 28: Exam III (covers sections 3.6–4.3, 4.5–5.4)
November 30: sections 6.1, 6.2
December 5: review
December 5: Homework 9 due; supplemental study material distributed