

MATH 341-010
MWF 11:15–12:05, PRN 231

Differential Equations with Linear Algebra I
Fall 1998

Web Page: <http://www.math.udel.edu/~edwards/download/m341/f98home.html>
Newsgroup: udel.fall98.math341-010

Instructor: Prof. D. A. Edwards
EWG 511

Office Hours: T 2:30–3:30, R 11–12 or by appointment
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Introduction

Welcome to Differential Equations with Linear Algebra I! In this class we will use an integrated approach to learn these two subjects together. Since the vast majority of you are electrical engineering majors, many of the examples in class presentations and homework assignments will be from the area of basic circuit theory as covered in ELEG 205.

The texts for this course are

- B) Boyce, William E., and DiPrima, Richard C. *Elementary Differential Equations and Boundary Value Problems*, 6th ed. New York: Wiley, 1997.
- L) Leon, Steven J. *Linear Algebra with Applications*, 5th ed. New York: Prentice-Hall, 1997.

The texts are required, since you will be assigned both reading and homework problems from the books. In addition, I may also be lecturing from various other sources, so class attendance and participation is necessary for successful mastery of the material.

If you have any questions, contact me during my office hours or make an appointment.
Extra copies of handouts are available outside 511 Ewing or at the Web page listed above.

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.

Announcements will also be posted to the newsgroup for the course, which is listed above. The newsgroup gives you a chance to collaborate electronically, asking questions of your fellow students, etc. If I find a question being repeatedly asked, I will try to address it in the next class session. Though the group is unmoderated, I will be checking to make sure that answers to homework assignments and other types of inappropriate material aren't being posted. No anonymous posting is allowed.

Particularly important messages may also be e-mailed to you directly. 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 45 minutes long and will take place during a regular lecture period. The final exam will be two hours long. Please be prepared to show picture identification in order to enter the examination room. 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.*

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.

Homework

Homework will be distributed on Fridays during lecture (the first assignment is attached to this introduction), and it will be due at the beginning of class the following Friday. The homework will cover material up through the Monday 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. 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 341-010—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.

Tentative Schedule

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

week of September 2: Sections B2.1, 2.2

September 2: Homework 1 distributed

September 7: Labor Day (no lecture)

September 9–11: Sections B2.2–2.4, 3.1

September 11: Homework 1 due; homework 2 distributed

week of September 14: Sections B3.1, 3.2, 3.4, 3.5, and 3.8

September 18: Homework 2 due; homework 3 distributed

week of September 21: Sections B3.6–3.8

September 25: Homework 3 due; homework 4 distributed

week of September 28: Sections B3.7, 3.9, 3.3; L1.1

October 2: Homework 4 due; homework 5 distributed

October 5: Sections L1.1–2

October 7: Exam I (covers chapter B2 and sections B3.1, 3.2, and 3.4–3.8)

October 9: Sections L1.2–3

week of October 12: Sections L1.3, 1.4

October 16: Homework 5 due; homework 6 distributed

week of October 19: Sections L1.3, 1.4, 2.1–3.2

October 23: Homework 6 due; homework 7 distributed

week of October 26: Sections L3.1–3.3

October 30: Exam II (covers Sections B3.3, 3.9; chapters L1, 2)

week of November 2: Sections L3.3–3.6

November 6: Homework 7 due; homework 8 distributed

week of November 9: Sections L3.6, 6.1, 6.3, and 6.4

November 13: Homework 8 due; homework 9 distributed

week of November 16: Sections L6.4, B7.1, 7.4, 7.5

November 20: Homework 9 due; homework 10 distributed

November 23: Exam III (covers chapters L3, 6)

November 25: Sections B7.5, 7.6

November 27: Thanksgiving Recess (no lecture)

week of November 30: Sections B7.6–7.9

December 4: Homework 10 due

December 7: Section B7.9

December 9: Formal Review Session

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December 17, 10:30–12:30: Final Exam (covers entire class, but especially chapter B7)