MATH 342-010 Differential Equations with Linear Algebra I
MW 11:15–12:30, PRN 328 Spring 1999
Web Page: `http://www.math.udel.edu/~edwards/download/m342/s99home.html`

Instructor: Prof. D. A. Edwards Office Hours: M 10–11, T 3:30–4:30, or by appointment
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Introduction

Welcome to Differential Equations with Linear Algebra II! In this class we will use an integrated approach to learn these two subjects together. Since the course is designed for electrical and computer 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.

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. 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 Wednesdays during lecture (the first assignment is attached to this introduction), and it will be due at the beginning of class the following Wednesday. The homework will cover material up through the day 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 342-010—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.

February 10: Review; section B7.9
    February 10: Homework 1 distributed
week of February 15: Sections L4.1, 4.2
week of February 22: Sections L4.2, 4.3, B6.1, 6.2
    February 24: Homework 1 due; homework 2 distributed
week of March 1: Sections B6.2–6
    March 3: Homework 2 due; homework 3 distributed
week of March 8: Section B6.6, Chapter B5
    March 10: Homework 3 due; homework 4 distributed
    March 15: Exam I (covers chapters L4 and B6)
March 17: Chapter B5
week of March 22: Chapters B5, L5
    March 24: Homework 4 due; homework 5 distributed
week of March 29: Spring Recess
week of April 5: Chapter L5
    April 7: Homework 5 due; homework 6 distributed
week of April 12: Chapters L5, B4
    April 14: Homework 6 due; homework 7 distributed
    April 19: Exam II (covers chapters B5, L5)
April 21: Chapter B4
week of April 26: Chapter L6
    April 28: Homework 7 due; homework 8 distributed
week of May 3: Chapters B8, B9
    May 5: Homework 8 due; homework 9 distributed
May 10: Chapters B9, B11
    May 12: Exam III (covers chapters B4, B8, L6)
May 17: Chapter B11
May 19: Formal review session
    May 19: Homework 9 due; homework 10 distributed