

MATH 342-010
MWF 12:20–1:10, PRN 325

Differential Equations with Linear Algebra II
Fall 2013

Web Page: <http://www.math.udel.edu/~edwards/download/m342/f13home.html>

Instructor: Prof. D. A. Edwards
EWG 511

Office Hours: T 1–2, R 9:30–10:30, 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

- E) Edwards, C. Henry, and Penney, David E. *Differential Equations and Boundary Value Problems: Computing and Modeling*, 4th ed. Upper Saddle River: Pearson, 2007.
- L) Leon, Steven J. *Linear Algebra with Applications*, 8th ed. Upper Saddle River: Prentice-Hall, 2009.

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 at the Web page listed above.**

There will be no makeup classes for snow days unless mandated by the University.

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. For more information on how to use electronic resources, contact the Help Center (x6000).

Homework

The most effective way to succeed in this course is to do all the homework assignments. I select the problems carefully to illustrate the most important topics in the course. Even if you are registered as a listener, I recommend doing the homework, and I will review it.

In most cases, homework will be distributed every Friday during lecture, and it will be due the following Friday. (The first homework assignment is attached to this sheet.) 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 own¹, 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 your grade may be written 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.

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

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.

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 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. (In the past, it has been my experience that 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.

Tentative Schedule

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

August 28–30: M341 Review (Sections E5.1–5.3, 6.1), Section E5.6

August 29: Homework 1 distributed

September 2: Labor Day (no school)

September 4–6: Section E5.6, E6.2, E6.4

September 6: Homework 1 due; homework 2 distributed

week of September 9: Sections E6.2, L4.1, L4.2

September 13: Homework 2 due; homework 3 distributed

week of September 16: Sections L4.2, L4.3, E7.1

September 20: Homework 3 due; homework 4 distributed

September 23–25: Sections E7.2, E7.3, E7.5

September 27: Exam I (covers chapters E5, sections E6.2, E6.4, and L4)

week of September 30: Sections E7.4–8.1

October 4: Homework 4 due; homework 5 distributed

week of October 7: Sections E8.1–8.3

October 11: Homework 5 due; homework 6 distributed

week of October 14: Sections E8.3–8.5, L5.1, L5.4

October 18: Homework 6 due; homework 7 distributed

week of October 21: Sections L5.2, L5.4

October 23: Exam II (covers chapter E7, E8)

week of October 28: Sections L5.2, L5.3

November 1: Homework 7 due; homework 8 distributed

week of November 4: Sections L5.3, 5.5, L5.6, L6.6

November 8: Homework 8 due; homework 9 distributed

week of November 11: Sections L6.6, L6.7, E9.1, E9.2, E9.4

November 15: Homework 9 due; homework 10 distributed

November 18–20: Sections E9.1–9.4

November 22: Exam III (covers chapters L5, L6)

November 25: Section E9.3, E6.5

November 27–29: Thanksgiving Recess

December 2: Section E6.5

December 4: Formal review session

December 4: Homework 10 due; supplemental study problems distributed

TBA: Final Exam (covers entire class, but especially section E6.5, chapter E9)