MATH 351-015 Engineering Mathematics I
MWF 9:05–9:55, EWG 203 Fall 2013
Web Page: http://www.math.udel.edu/~edwards/download/m351/f13home.html

Instructor: Prof. D. A. Edwards Office Hours: T 9:30–10:30, R 11–12, or by appointment
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Introduction

Welcome to Engineering Mathematics I! In this class we will use an integrated approach to learn differential equations and linear algebra together. Since the course is designed for engineering majors, many of the examples in class presentations and homework assignments will be from the areas of circuit theory and mechanical oscillators.

The text for this course is *Advanced Engineering Mathematics*, 5th ed., by Zill. **The text is required**, since you will be assigned both reading and homework problems from the book. 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.**

Please silence cellular phones before entering the classroom. 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. Important announcements (corrections to typographical errors, etc.) will be handled by e-mail. 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 at the beginning of class 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 own[1], 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 351-015—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.

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[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: Sections 1.1, 1.2, 2.3
August 29: Homework 1 distributed
September 2: Labor Day (no school)
September 4–6: Sections 2.3, 2.8, 3.1
September 6: Homework 1 due; homework 2 distributed
week of September 9: Sections 3.1, 3.3
September 13: Homework 2 due; homework 3 distributed
week of September 16: Sections 3.2–3.4, 3.8
September 20: Homework 3 due; homework 4 distributed
week of September 23: Sections 3.4, 3.5, 3.8, 8.2
September 27: Homework 4 due; homework 5 distributed
September 30: Exam I (covers chapters 1, 2, sections 3.1–3.4, 3.8)
October 2–4: Section 8.2
week of October 7: Sections 8.1, 8.2, 8.6
October 11: Homework 5 due; homework 6 distributed
week of October 14: Sections 8.4–8.6, 8.13
October 18: Homework 6 due; homework 7 distributed
week of October 21: Sections 7.6, 8.5, 8.7
October 25: Homework 7 due; homework 8 distributed
October 28: Exam II (covers sections 3.5, 3.8, 8.1, 8.2, 8.4, 8.6, 8.13)
October 30–November 1: Section 7.6
week of November 4: Sections 7.6, 8.3, 8.8
November 8: Homework 8 due; homework 9 distributed
week of November 11: Sections 8.8, 8.12, 10.1
November 15: Homework 9 due; homework 10 distributed
November 18–20: Sections 10.1, 10.2
November 22: Exam III (covers chapter 7, sections 8.3, 8.7, 8.8, 8.12)
November 25: Sections 10.2, 10.3
November 27–29: Thanksgiving Recess
December 2: Section 10.3
December 4: Formal review session
December 4: Homework 10 due; supplemental study problems distributed
TBA: Final Exam (covers entire class, but especially chapter 10)