

# M427K Spring 2012

## Unique Nos. 55620, 55630

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**Rules:** Don't miss class. Don't be late. Don't buy plane tickets which conflict with exams. Don't pack up early. Don't be rude.

**Text:** (Required) *Elementary DEs and BVPs* 9th Ed., Boyce and DiPrima.

**Students with disabilities:** The University of Texas at Austin provides, upon request, appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY

<b>Grading:</b> 12 Quizzes:	30%
2 Midterm exams	40%
<u>Final Exam:</u>	30%
Total:	100%

We will be using the +/- grading system: 90% is at least an A, 86.7% is at least an A-, 83.3% is at least a B+, 80% is at least a B, etc.

**Exams and Quiz Dates:** Nearly chiseled in stone, the dates for the midterms are: Wed. Feb. 29 and Fri. Apr. 20. Most of the quizzes will be given in discussion section, usually on Thursday. There are no make-up exams or quizzes. If you miss an exam, it's not automatically a zero (but it might be a zero.) At the end of the course, I'll make a rough guess as to what your score would have been, and you'll have to live with it. Your lowest quiz score will be changed to the maximum score at the end of the term. The dates for the final exams are, for the 9:00 section, Sat. May 12 from 9 to 12 a.m., and for the 10:00 section, Mon. May 14 from 2 to 5 p.m., locations to be announced. Exams and quizzes will be closed-book, closed-notes, and no-calculator.

**Homework** Assignments on are on the next page and are subject to change. Which assignments you should do will be announced in class. Homework will not be collected, so don't bother doing it, unless you want to learn the material. To help you, the quizzes will ordinarily be two problems based closely on the homework.

**Dropping** If you drop a class on or before February 1, the class will not show up on your transcript. If you drop a class after that date, the course will show up on the transcript with a Q grade. After April 2, it is not possible to drop a course except for extenuating (usually non-academic) circumstances.

**Overview** A differential equation is an equation relating the derivatives of an unknown function to each other. The goal of this course is to learn various techniques for finding such unknown functions and using these techniques to solve physical problems. After studying first and second-order equations, we look at the Laplace transform methods, then eigenvector methods for solving systems of linear DE's, and then at Fourier series techniques for partial differential equations.

**Assignments:**

Work the following problems at the appropriate time, as announced in class. Numbers in parens are 8th edition equivalents. (I think.)

Day	Section	Exercises
1	1.1	2, 3, 4, 11, 14, 21, 23, 33
2	1.2	1, 2ac, 7, 8, 9, 12, 14, 16, 18
3	1.3	2, 4, 9, 12, 14, 17, 18, 20, 25
4	2.1	2, 14, 15, 16, 18, 19, 28
5	2.2	2, 3, 6, 8, 11, 14, 15, 20, 24, 31ab, 36ab
6	2.3	1, 2, 3, 13, 16, 20, 21, 22, 23
7	2.4	1, 2, 3, 7, 8, 14, 18, 25, 28
8	2.5	3, 8, 9, 10, 12, 13
9	2.6	2, 3, 4, 6, 8, 12, 13, 14, 19, 25, 27, 28
10	2.7	2, 11a, 12a
11	2.8	3, 4, 7, 14
12	3.1	3, 4, 5, 6, 7, 10, 11, 12, 16, 20
13	3.2	3, 6, 7, 11, 12, 13, 22, 26(25), 42(29), 43(30)
14	3.3(3.3/3.4)	2, 3, 5, 8, 9, 12, 17, 20, 23, 35(3.4.39), 36(3.4.40)
15	3.4(3.5)	5, 6, 8, 12, 14, 23, 24, 26, 27, 28, 41
16	3.5(3.6)	1, 3, 4, 6, 8, 13, 14, 18, 22a, 24a
17	3.6(3.7)	2, 5, 6, 7, 10, 13, 15, 16, 17
18	3.7(3.8)	3, 4, 5, 6, 11, 17
19	Exam 1	
20	3.8(3.9)	2, 3, 5, 7, 10
21	5.1	1, 5, 7, 9, 14, 16, 21, 22, 24
22	5.2	1abd, 3abd, 5abd, 6abd, 11abd, 12abd, 15, 18
23	5.3	1, 2, 3, 6, 7, 11, 14
24	5.4(5.4/5.5)	2, 3, 4, 5, 6, 8, 13, 16(5.5.2, 3, 4, 5, 6, 8, 13, 16), 19(3), 21(5), 22(6), 26(10), 30(14), 33(18)
25	5.5(5.6)	3, 4, 6, 7, 8, 9
26	6.1	2, 4, 5, 6, 8, 9, 15, 16, 18, 19, 26, 27
27	6.2	1, 3, 4, 7, 9, 11, 12, 16, 24, 29, 30, 33
28	6.3	1, 2, 4, 11(X), 13(7), 15(9), 18(12), 20(14), 21(15), 24(18), 27(21), 33(27), 37(31)
29	6.4	1, 3, 5, 7, 10
30	6.5	1, 2, 3, 5, 7, 9
31	10.1	1, 2, 3, 4, 7, 10, 12, 14, 16, 18, 19
32	10.2	4, 7, 9, 12, 13, 14, 18, 20, 21
33	10.4	2, 3, 4, 5, 7, 14, 15, 17, 18, 25
34	10.5	1, 2, 3, 5, 7, 8, 10, 15, 18
	*10.7	1, 4, 5, 8, 10
35	7.1	3, 4, 5, 15, 23
36	7.2	2, 4, 10, 22, 23
37	7.3	14(13), 16(15), 17(16), 19(18), 21(20)
38	Exam 2	
39	7.4	5, 6, 7
40	7.5	1, 2, 3, 4, 8, 9, 15
41	7.6	1, 2, 6, 9, 10, 12abc
42	7.8	1, 2, 4, 7, 8, 9, 10