



Mathematics 38

Differential Equations

Fall 2010

<http://www.tufts.edu/as/math/38/>

Sections

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3: Thomas Höft, E block

Text: Reprint of M.M. Guterman, Z.H. Nitecki, *Differential Equations – A First Course*, 3rd ed., Saunders (1992).

Prerequisites: Mathematics 11-13 or 17-18

Important Dates: There will be three exams, given on **Monday, October 4**; **Monday, November 1**; and **Monday, December 6**, from **12:00 noon to 1:20pm**. The final exam will be given on **Wednesday, December 15**, from **8:30am to 10:30am**. *Notify your instructor of any time conflicts with other examinations during the first week of classes.* Students who take two mathematics courses with any exams at the same time have to take these back to back and must notify *both* instructors during the first week of classes. *The exams are cumulative.*

Dropping, Adding, Withdrawing: See <http://uss.tufts.edu/stuserv/acadcal/>

Homework

Homework is due at the beginning of the next class. You are encouraged to collaborate, but you must hand in solutions written in your own hand. You receive one point if your homework contains (1) a bona fide attempt at *every* exercise (copying the statement does not suffice) and (2) the correct solution to at least 60% of the exercises (answers only are not enough). *Do not claim credit for any parts of solutions copied from the blackboard during class! This is plagiarism.* Your homework credit is $H = u_{26} (n) \cdot (n - 20)/4$, where n is the number of homework points and u is as on p. 449 of the textbook.

For information regarding Grading and Missing Examinations, please visit: <http://math.tufts.edu/?pid=10&c=14>

Cheating: DON'T Mathematics Department policy requires you to sign your exam book before handing it in. *With your signature, you are pledging that you have neither given nor received assistance on the exam.* If you question the grading on a particular problem, write a note explaining the issue (on the cover of the exam if it will fit there), and resubmit the exam booklet with the note at the end of the class when the graded booklets were returned. Submitting an examination for regarding after altering the original answers, submitting a fraudulent excuse for course work missed, cheating on an examination or bringing unauthorized materials into the room during an examination are all Level III offenses for which one can expect an F in the course and suspension for a year, or expulsion, and a permanent transcript notation. There is no appeal of grading consequences.

Learning objectives: Selectively include 1a, c, d, e; 2a; 6 in the list of Tufts Mathematics undergraduate learning objectives found at - <http://ase.tufts.edu/faculty-committees/assessment/math.htm>

Mathematics 38 Lecture and Test Schedule

	B	C	E	Sec.	Homework
1	9/7	9/7	9/8	1.1, 1.2	p. 8: 1, 3, 7, 17, 18*, 19*, 20* & p. 16: 3, 5, 15, 17, 24
2	9/9	9/8	9/10	1.3	p. 25: 1, 3, 7, 8, 12, 19, 23, 25 & p. 37: 1, 5
3	9/10	9/10	9/13	1.6	p. 8: 4 & p. 56: 1, 3, 7, 11, 17, 19, 21
4	9/14	9/14	9/15	2.A	p. 8: 5 & p. 194: 1, 3, 5, 11, 16, 17, 19, 21, 31
5	9/16	9/15	9/17	2.2	p. 91: 1, 5* & p. 102: 1, 3, 7, 9, 13, 15, 17, 21, 23, 24
6	9/17	9/17	9/20	2.3	p. 113: 1-3, 9, 13, 15, 17, 31 & p. 196: 33
7	9/21	9/21	9/22	2.4	p. 103: 25 & p. 120: 1, 5, 9, 10, 13-15, 18;
8	9/23	9/22	9/24	2.5	p. 8: 6 & p. 129: 3, 5, 9, 11, 15, 18, 19, 22, 23
9	9/24	9/24	9/27	2.6	p. 136: 1, 5, 11, 13, 15, 19, 21, 23, 25
10	9/28	9/28	9/29	2.7	p. 9: 8 & p. 145: 1-3, 5, 11, 14, 15
11	9/30	9/29	10/1	2.8	p. 155: 1, 5, 7, 9, 15, 17 & p. 196: 34
	10/1	10/1	10/4	Review	
October 4 Exam 1: 12:00-1:30. Covers 1.1 through 2.8					
12	10/5	10/5	10/6	2.9	p. 164: 1-4, 5a, 6, 8, 11 & p. 172: 3
13	10/7	10/6	10/8	5.2	p. 410: 1 & p. 421: 4, 5, 8-11, 13-15, 17, 19, 20, 22-24
14	10/8	10/8	10/11	5.3	p. 410: 5 & p. 432: 1, 3, 11, 13, 17, 19, 21 & p. 463: 11 [†] , 12 [†] , 13 [†] *
15	10/12	10/12	10/13	5.4	p. 441: 1, 5, 9, 15, 18, 27, 29, 32 & p. 463: 14 [†] , 15 [†] *, 16 [†] , 17 [†]
16	10/14	10/13	10/15	5.5	p. 452: 3, 5, 7, 15, 17, 19, 23, 29
17	10/15	10/15	10/18	5.6	p. 9: 9 & p. 462: 3, 5, 11, 15, 19, 21, 25 & p. 479: 1
18	10/19	10/19	10/20	5.7	p. 473: 1, 3, 7, 9, 13-15, 19
19	10/21	10/20	10/22	3.2	p. 203: 1 & p. 219: 1, 2cd, 5, 7, 8, 11, 13, 19, 24ab, 25, 32, 33
20	10/22	10/22	10/25	3.3	p. 103: 26 & p. 196: 35 & p. 232: 1, 7, 9, 11, 13
21	10/26	10/26	10/27	3.4	p. 121: 19 & p. 241: 1-5, 7, 8, 11-14
22	10/28	10/28	10/29	3.5	p. 9: 10 & p. 254: 1*, 4*, 5*, 6*, 9*, 11*, 13
	10/29	10/29	11/1	Review	
November 1 Exam 2: 12:00-1:20. Covers 2.9 to 3.5					
23	11/2	11/2	11/3	3.6	p. 265: 1-3, 6, 7, 9, 11, 13
24	11/4	11/3	11/5	3.6	p. 265: 20, 21, 14*, 17*, 18*, 19*
25	11/5	11/5	11/8	3.7	p. 275: 1, 4*, 5*, 7, 8, 9, 11, 13
26	11/9	11/10	11/10	3.8	p. 103: 27 & p. 196: 36 & p. 284: 1, 3*, 5, 7, 11
27	11/12	11/12	11/12	3.9	p. 9: 11 & p. 295: 1, 5*, 7, 9, 13
28	11/16	11/16	11/15	3.10	p. 308: 3, 5, 7, 9, 13 & p. 26: 9 & p. 155: 3
29	11/18	11/17	11/17	3.11	p. 71: 1 & p. 320: 1, 4, 5, 6, 7, 8, 13 & p. 194: 2 - [Recommended: p. 321: 1-14]
30	11/19	11/19	11/19	4.1	p. 71: 3-6, 8, 21 & p. 332: 1, 5, 9 - [Start review homework now!]
31	11/23	11/23	11/22	4.2	p. 348: 1-3, 7, 8, 9, 11, 13, 15, 17, 19, 20 & p. 173: 4a
32	11/30	11/30	11/29	4.3	p. 9: 12 & p. 364: 9 [‡] , 10 [‡] , 14 [‡] , 16 [‡] , 17 [‡] , 24
33	12/2	12/1	12/1	4.4	p. 377: 1, 3, 7, 9, 10, 12, 13a
	12/3	12/3	-	Review	
35	-	-	12/3	4.5	p. 8: 2 & p. 63: 1 & p. 385: 1, 2, 4, 5, 7
	-	-	12/6	Review	
December 6 Exam 3: 12:00-1:20. Covers 3.6 to 4.4					
36	12/7	12/7	-	4.5	p. 8: 2 & p. 63: 1 & p. 385: 1, 2, 4, 5, 7
37	12/9	12/8	12/8	4.6	p. 397: 1, 3, 4, 5, 8
	12/10	12/10	12/10	Review	p. 17: 21 & p. 56: 5, 18 & p. 72: 15 & p. 113: 4 & p. 121: 16 & p. 129: 17 & p. 145: 7 & p. 155: 19 & p. 222: 34 & p. 233: 12 & p. 242: 15-17 & p. 255: 22 & p. 320: 11 & p. 348: 1, 3 & p. 421: 1, 7 & p. 441: 3, 17, 31 & p. 452: 1, 13 & p. 462: 2, 13 & p. 473: 5, 11. Optional: p. 284: 5 & p. 308: 3 & p. 433: 19 & p. 452: 9

Wednesday, December 15 Final Exam: 8:30-10:30am Cumulative

* Keep your answer for later assignments.

† Only find the partial-fractions decomposition.

‡ Answer the question as posed and draw a full phase portrait.