Differential Equations and Linear Algebra
Tentative Due Dates and Lectures Spring 2012
2250-1 7:30am in JTB 140

Midterm 1 [16 Feb, 23 Feb]   Av1= ☐

Midterm 2 [22 Mar, 29 Mar]   Av2= ☐

Midterm 3 [12 Apr, 19 Apr]   Av3= ☐

Final Exam [27 Apr]   AvFin= ☐

Average of 152 dailies including maple labs: AvDaily= ☐

Final Grade: $\dfrac{70}{100}\left(\dfrac{\text{Av1+Av2+Av3+AvFin+AvFin}}{5}\right)+\dfrac{30}{100}\text{AvDaily}=$ ☐

Questions: 801-581-6879, Office: 113 JWB. Email **ggustaf@math.utah.edu**

Week 1, Jan 9 to 13. Lecture 1.1, 1.2, 1.3, 1.4.

09 Jan, Intro, GB Gustafson, nothing due.
10 Jan, Nothing due.
11 Jan, Submit Page 16, 1.2-2 for quick review.
12 Jan, Intro, Thu. assistants
13 Jan, Begin maple lab 1.

Week 2, Jan 16 to 20. Lecture 1.5, 2.1, 2.2.

16 Jan, No class, Martin Luther King
19 Jan, LCB115: Time TBA, First maple intro lecture.
19 Jan, Thu TA: Quadratics and maple lab 1.
 Exam 1 review. Drill, Q&A ch1.
Homework package week 2, 6 problems
20 Jan, Page 17, 1.2: 2, 4, 6, 10
20 Jan, Page 27, 1.3: 8, 14
20 Jan, LCB115: Time TBA, Repeat maple intro lecture.

Week 3, Jan 23 to 27. Lecture 2.3, 2.4, 2.5, 2.6.

24 Jan, LCB115: Time TBA. Repeat maple intro.
26 Jan, Thu TA: Discuss maple L2.1. Exam 1 review. Drill, Q&A ch1.
Homework package week 3, 9 problems
27 Jan, Page 43, 1.4: 6, 12, 18, 22, 26
27 Jan, Page 56, 1.5: 8, 18, 20, 34

Week 4, Jan 30 to Feb 3. Lecture 3.1, 3.2, 3.3.

01 Feb, Thu TA Exam 1 review. Discuss maple L2.
Homework package week 4, 6 problems
03 Feb, Page 87, 2.1: 8, 16
03 Feb, Page 98, 2.2:   10, 14
03 Feb, Page 108, 2.3: 10, 20

Chapter 1 and 2 Review Problems [Do not submit].
 Page 17, 1.2: 29,35,41; Page 27, 1.3: 10,25,26,33;
 Page 43: 1.4-51,59; Page 56: 1.5-21,23,33,39;
 Page 78: 1, 2, 5, 6, 7, 10, 13, 15, 19, 20, 21,
 24, 25, 28. Solve one way: 31, 32, 36;
 Page 87: 2.1-4,22,32,37; Page 98: 2.2-7,8,15,17;
 Page 108: 9,19,24; Page 121: 2.4-5,17;
 Page 132: 2.5-5; Page 142: 2.6-5,29.

Week 5, Feb 6 to 10. Lecture 3.4, 3.5, 3.6.

06 Feb, Submit Exam Review problems ER-1, ER-2 [web site]
06 Feb, Submit maple L2.1 copy for quick feedback [not graded].
07 Feb, Submit Maple lab 1: L1.1, L1.2, L1.3, L1.4
09 Feb, Thu TA: Exam 1 review. Discuss maple Lab 2.
Homework package week 5, 8 problems
12 Feb, Page 155, 3.1: 6, 16, 26
12 Feb, Page 165, 3.2: 10, 14, 24
12 Feb, Page 174, 3.3: 10, 20

Week 6, Feb 13 to 17. Lecture 4.1, 4.2, 4.3, 4.4.

16 Feb, Midterm 1, Part 1, Three of Five problems ch1 and ch2
Homework package week 6, 7 problems
17 Feb, Page 186, 3.4: 20, 30, 34, 40
17 Feb, Page 199, 3.5: 16, 26, 44

Week 7, Feb 20 to 24. Lecture 4.4, 4.5, 4.6, 4.7.

20 Feb, No class, President's Day
23 Feb, Midterm 1, Part 2, Last Two of Five problems ch1 and ch2
Homework package week 7, 11 problems
24 Feb, Page 216, 3.6: 6, 20, 32, 40, 60
24 Feb, Page 237, 4.1: 16, 20, 32
24 Feb, Page 244, 4.2: 4, 18, 28

Week 8, Feb 27 to Mar 2. Lecture 5.1, 5.2, 5.3, 5.4.

29 Feb, Submit maple lab 2: L2.1, L2.2, L2.3, L2.4
01 Mar, Thu TA: Exam 2 review. Discuss numerical maple L3, L4.
Homework package week 8, 4 problems
02 Mar, Page 252, 4.3: 18, 24
02 Mar, Page 259, 4.4: 6, 24

Week 9, Mar 5 to 9. Lecture 10.1, 10.2, 10.3, 10.4.

Homework package week 9, 7 problems
07 Mar, Page 268, 4.5: 6, 24, 28
07 Mar, Page 276, 4.6: 2
07 Mar, Page 284, 4.7: 10, 20, 26
08 Mar, Thu TA: Exam 2 review. Discuss maple L3, L4.
09 Mar, Nothing due.

Chapter 3 and 4 Review Problems [Do not submit].
 Page 155: 3.1-7,9,17,27; Page 165: 3.2-9,15,21,25;
 Page 174: 3.3-11,19,35; Page 186: 3.4-11,13,21,33,35,39;
 Page 199: 3.5-17,25,33,43; Page 216: 3.6-5,11,17,29,37,51,53;
 Page 237: 4.1-23,27,33-36; Page 244: 4.2-3,7,11,17,21,27,29;
 Page 252: 4.3-11,17,25; Page 259: 4.4-5,21,31;
 Page 268: 4.5-9,15,19,23; Page 276: 4.6-3,5; Page 284: 7,11,19,25;

Spring Break: Mar 12-16. Happy Holiday!

12-16 Mar, Traveling? Nothing due from Mar 8-18. Substantial
amounts of dailies, including maple projects, are due after the
break.

Week 10, Mar 19 to 23. Lecture 10.5, EPbvp7.6, 5.5

22 Mar, Midterm 2, First Three of Five problems ch3, ch4, ch5.1-5.3
Homework package week 10, 15 problems
23 Mar, Page 299, 5.1: 34, 36, 38, 40, 42, 46, 48 [done in 20 min]
23 Mar, Page 311, 5.2: 18, 22
23 Mar, Page 323, 5.3: 8, 10, 16, 32
23 Mar, Page 335, 5.4: 20, 34

Week 11, Mar 26 to 30. Lecture 5.6, EPbvp3.7, 6.1, 6.2

27 Mar, Submit numerical maple L3: L3.1, L3.2, L3.3
27 Mar, Submit numerical maple L4: L4.1, L4.2, L4.3
29 Mar, Midterm 2, Last Two of Five problems ch3, ch4, ch5.1-5.3
Homework package week 11, 11 problems
30 Mar, Page 585, 10.1: 18, 28
30 Mar, Page 598, 10.2: 10, 16, 24
30 Mar, Page 608, 10.3: 6, 18
30 Mar, Page 617, 10.4: 22
30 Mar, Page 625, 10.5: 4, 22, 28

Week 12, Apr 2 to 6. Lecture 7.1, 7.2, 7.3, 7.4.

05 Apr, Thu TA: Exam 3 review. Discuss maple labs L5, L6.
Homework package week 12, 12 problems
06 Apr, Page 351, 5.5: 54, 58, 6, 12, 22
06 Apr, Page 362, 5.6: 4, 8, 18
06 Apr, Page 510 in EPbvp 7.6: 8, 22
06 Apr, Page 227 in EPbvp 3.7: 4, 12

Chapter 5 and 10 Review Problems [Do not submit].
 Page 299, 5.1: 33,35,37,39,41,43,53; Page 311, 5.2: 19,23;
 Page 323, 5.3: 7,9,17,31,37; Page 335, 5.4: 11,17,19,33;
 Page 351, 5.5: 5,11,19,25,27,39,47,51,59; Page 362, 5.6: 3,9,15;
 Page 585, 10.1: 9,11,13,15,17,27,29,31,40;
 Page 598, 10.2: 7,9,15,17,19,21,23,35,37;
 page 608, 10.3: 3,5,7,9,11,13,15,17,21,29,31,35;
 Page 617, 10.4: 3,9,13,17,23,27,29,37;
 Page 625, 10.5: 3,9,13,21,25,27,29,33,37;
Supplements EPbvp Review Problems [Do not submit].
 7.6 and 3.7: Solve 4 more problems from each.

Week 13, Apr 9 to 13. Lecture 7.4, 7.5 /w Laplace, 8.1, 8.2.

10 Apr, Submit linear algebra maple lab5: L5.1, L5.2, L5.3
10 Apr, Submit differential equations maple lab6: L6.1, L6.2, L6.3
12 Apr, Midterm 3, First two of Five problems ch5, ch10, ch6
Homework package week 13, 7 problems
13 Apr, Page 374, 6.1: 12, 20, 32, 36
13 Apr, Page 379, 6.2: 6, 18, 28
13 Apr, All Semester extra credit chapters 1,2,3,4,5,6 due. No
extension.

Week 14, Apr 16 to 20. Lecture 9.1, 9.2, 9.3.

17 Apr, Submit maple lab7: L7.1, L7.2, L7.3, L7.4, L7.5
19 Apr, Midterm 3, Last Three of Five problems ch5, ch10, ch6
Homework package week 14, 9 problems

End of Semester Deadlines

Exam Period, 27 Apr to 4 May
Final exam for the 7:30am class is Fri April 27, 2012 at 8am.

Extra Credit: Under the door, 113jwb.
30 Apr, Ch9, 9.4: 4, 8. Two problems.
30 Apr, Ch7 Extra Credit. About 9 problems on the ch7 extra credit page.
30 Apr, Ch8 Extra Credit. About 5 problems on the ch8 extra credit page.
30 Apr, Ch9 Extra Credit. About 11 problems on the ch9 extra credit page.
30 Apr, Ch10X Extra Credit. At least 10 challenging Laplace problems
  appear on the ch10X extra credit page.
30 Apr, Maple Optional Lab 8: Earthquake L8.1, L8.2, L8.3, L8.4, L8.5
30 Apr, Maple Optional Lab 9: Tacoma Narrows L9.1, L9.2
30 Apr, Maple Optional Lab 10: Brine/Glucose L10.1, L10.2, L10.3, L10.4
Extra credit records locked at 6pm on 30 Apr. Ch7, Ch8, Ch9, Ch10X and
maple 8,9,10 credits apply to the semester dailies total.

Policies on Dailies and Exams

Policy on Dailies: The highest 146 dailies will be counted. The lowest 7 of the 153 dailies will be dropped. Any record with less than 60 dailies earns a grade of **E**, regardless of midterm and final exam scores. Deadlines set at web site www.math.utah.edu/~gustafso/. Work not in the stack sent to the assistant earns a grade of zero. Extra credit exercises can correct these zeros.

Policy on Exams: The final exam is doubled before determining the exam average, to count like two midterms. The effect can be imagined as five midterm scores, averaged to obtain the semester exam score average.

Policy on Rank-in-Class: The class ranking is determined only by the exams. Rank 1 is the best, determined by sorting on the exam average (mid1+mid2+mid3+final+final)/5. There is no influence on class standing from dailies.

Dailies and Letter Grade: The dailies affect only the final letter grade assigned. A grade of E is assigned for less than 60 dailies. Otherwise, dailies contribute 30% towards the letter grade. In extreme cases, the influence is $\pm$ one letter grade, e.g., $B-$ on exams changes from $C-$ to $A-$.

Grading Scale: The internally-used scale is uses GPA increments, which step $1/3$ from $0.0 = E$ to $4.0 = A$. Briefly, $A = 95$, $B = 82$, $C = 67$, $D = 52$. In detail:

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A  = 95-100, A- = 90-94, B+ = 85-89, B  = 80-84,
B- =  75-79, C+ = 70-74, C  = 65-69, C- = 60-64,
D+ =  55-59, D  = 50-54, D- = 45-49, E  = 0-44.
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