MATH 246, SPRING 2010

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Office hours: Tu-Th 10-10:50 (in Math 3311).

Teaching Assistant’s office hours, (all in Math 3301):
Travis Andrews, E-mail tandrews@math.umd.edu (sections 0212, 0222, 0231, 0241) Mondays 3-4
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Please feel free to come to any of these office hours.

The final grade will be based on Homework (20%) three in-class (Tu-Th) exams (15% each), and a uniform final exam (35%).

Students with less than 50% of the maximum possible will receive an F.

Make-up policy: There will be no make-ups for in-class exams. In the case of an absence due to illness, religious observance, participation in a University activity at the request of University authorities, or other compelling circumstances, your blank grade will be replaced by the average of your other in-class exams. Also, your 5 lowest homework grades will be dropped. This is meant to accommodate all excused absences, and no late homework will be accepted. Note that pen-and-paper and Matlab homeworks will be recoded as different assignments.

Computer assignments (from MATLAB) should be printed neatly so both input and output show, and should be handed to your TA (not to the professor) on Fridays. Collaboration on computer homeworks is allowed and encouraged.

Pen and paper assignments (from Boyce-DiPrima) are of two types: Those in bold face are to be turned in to your TA on Fridays. The others will not be collected or graded, but are highly recommended, and some of them will appear on exams.
Assignments:
Problem set 1, due January 29:
BdP 1.1: 1, 2, 7, 9
BdP 1.2: 1 a, b
BdP 1.3: 1, 4

Problem sets 2 and 3, due February 5:
BdP 2.1: 1, 13, 15, 28 (requires cleverness!)
BdP 2.2: 3, 7, 8, 9
BdP 2.3: 1, 9
MATLAB: Read Chapters 1-4 in enough detail so you can solve and turn in A 2, 3a, 5, 6a, 6c, 8

Problem sets 4 and 5, due February 12.
BdP 2.4: 1;
BdP 2.5: 3, 4, 10, 12;
BdP 2.6: 1, 2, 3
MATLAB: Read Chapters 5, 6. Stability, on p. 58 is an important theoretical topic. Turn in B, 5, 10(a, b, c), 17 (a), 19

Problem set 6, due February 19. Hand in the following problem (a, b, c are pen-and-paper problems):
Consider the equation $y' = t^2 + y^2$, $y(0) = 1$. Find the approximate value of $y(0.2)$ in 4 different ways:
a) Euler method in one step
b) Euler method in 2 steps
c) Improved Euler method in one step
d) Euler method in 100 steps (use Matlab to set up the iteration)

Problem set 7, due Friday February 26.
Read pages 88-91 and 99-102 from the Matlab textbook.
Solve and turn in Problem C6 (a, c) and also
Problem set 8
BdP: 3.1: 1 , 2; 3.2:2, 4
3.3: 5, 9; 3.4: 1, 11, 23;
The first exam will be on Tuesday, March 2, on BdP Ch1, Ch2.1-2.6

For Friday, March 5: Read pages 141-142 of the Matlab book on how to solve second order equations exactly or numerically using Matlab. Turn in Problem set 9: MATLAB D 4 AND ALSO (continued on the next page)
Problem set 10:
BdP 3.5: 1, 6, 8
BdP 3.6: 2, 13;

Problem set 11, due Friday, March 12
3.7: 6, 7; 3.8: 5, 7 (c)

The second exam will be on Thursday March 25 on Chapters 8.1-8.2, 3.1-3.8 in BdP.
Assignments for the rest of the course will be distributed later.

No homework for Friday March 26.

For Friday, April 2:
Problem set 12:
6.1: 6, 13;
6.2: 1, 2, 3, 9, 11, 24

For Friday Apr. 9:
Problem set 13:
6.3: 1, 3, 7;
6.4: 1a, 9a;
and also:
Problem set 14: MATLAB E 13 (a), (b).
If your version of Matlab does not recognize heaviside functions, solve
$y'' + y' + y = \sin(t), \ y(0) = 1, \ y'(0) = 2$ using Matlab and the Laplace transform.

For April 16:
Problem set 15:
7.3: 15, 16, 17;
7.5: 1, 2, 6, 24.

For Friday April 23:
Problem set 16:
7.6: 1, 2, 3
Added:
7.8: 1
7.9: 1
and also Problem set 17: MATLAB F1 (first matrix only)
To solve this problem, read pages 212-219 of the Matlab textbook.
For due Friday April 30:
Problem set 18:
9.1: 13;
9.2: 17;
9.3: 5, 6 parts a-c only
and also problem set 19: MATLAB F6 (a, b, c)
Exam 3: Tuesday, May 4
The uniform final will be on Thursday May 13 from 1:30 to 3:30 at a location to be announced later.