Class Homepage: Math 441 B13, D13

Differential Equations

Instructor:

Vadim Zharnitsky

- **Meetings:** by Zoom on Moodle : B13 MWF 10-10:50am, D13 MWF 11-11:50am
- **Office:** 310 Altgeld Hall
- **Phone number:** (217)244-5032
- **Office hours:** MW 9-10am or by appointment
- **E-mail:** vzh@illinois.edu
- **Website:** http://www.math.uiuc.edu/~vz/441.html
- **Grader:** Derek Kielty (dkielty2@illinois.edu)

Communication

The best way to reach me is by email vzh@illinois.edu. I regularly read my mail and will reply to you usually within a couple of hours. If you do not hear from me within 24 hours, please contact me again. All major course announcements will be made by email through Moodle.

Learning Management System:

This class will be fully online. All course materials will be made available on Moodle, and all assignments will be handled via Moodle. To log in to Moodle, please click here and log in using your university net-id and password, and two-factor authentication. Then go to MY COURSES and you should see this course there (you need to be registered for the course to see it).

Discussion forum

We will use campuswire for the discussion forum. More information will be provided during the first week of classes.

Textbook:

Boyce, DiPrima, "Elementary differential equations", 10th edition.

Mathematics department syllabus

math 441 syllabus

Grading:

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Homework     10%
Exam #1      25%   Monday, March 8,     (Entire class period)
Exam #2      25%   Monday, April 19,   (Entire class period)
Final Exam   40%   TBD
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Grade cutoffs:

A	B	C	D	F
90-100	80-90	70-80	60-70	< 60

Homework:

Homework assignments will become available each Monday after class (see the class schedule below)
and will be due next Monday at the **beginning of the class.** Late homework will be accepted
with 10% penalty if submitted within 24 hours after the deadline, 20% penalty if submitted within 24-48 hours after the deadline, etc.

All solutions should be submitted as a single pdf file. Please do not upload jpg files. Arrange the problems in the right order and
with the right orientation (so they do not have to be rotated). You may use the CamScanner app for more
convenient scanning. One feature that is very useful is the "Batch" feature that gives you the option of forming
a single pdf file after you take the pictures in sequence. It is compatible across devices, free, and very convenient
to use as well.

Exams:

There will be 2 exams and one three hour final exam during
the semester. Each of the exams will contain one or more problems, with
some data modified, from the homework submitted before the exam. There will

be also questions on the theory that was presented in the lectures.

Make-up policy

Make-up exams will not be given, unless your absence is approved by the emergency dean (in case of an illness, personal or family emergency).

Schedule: (updated as class progresses)

Lectures	Dates	Text	Topics	Homework Problems	HW due
1	M 1/25	1.1-1.3	Introduction	Sect 1.1: # 15-20, Sect 1.3: # 1-6, 14, 15, 16, Sect 2.1: # 13, 15, 16. Sect 2.2: # 6, 21, 30(a-e).	HW1 2/1
2	W 1/27	2.1	First order linear eqs.		
3	F 1/29	2.2	Separable eqs.		
4	M 2/1	2.6	Integrating factors and exact eqs.	Sect 2.6: ?? Sect. 2.4: 8, 9, 27, 29. Section 2.3: #2, 20.	HW2 2/8
5	W 2/3	2.4	Difference between linear and nonlinear eqs.		
6	F 2/5	2.3	Modeling with 1st order equations		
7	M 2/8	2.3	Modeling with 1st order equations	Sect	HW3 2/15
8	W 2/10	2.5	Autonomous equations and population dynamics		
9	F 2/12	2.5	Autonomous equations and population dynamics		
10	M 2/15	2.8	The Picard existence and uniqueness theorem	Sect	HW4 2/22
11	W 2/17	2.8	The Picard existence and uniqueness theorem		
12	F 2/19	2.8	The Picard existence and uniqueness theorem		