Course Syllabus
Ordinary differential equations
MATH 266, Class # 24841
Fall 2013
Instructor: Prof. Alexey Kuznetsov

- TIME AND PLACE:
  Lectures: TIME: Monday and Wednesday from 6:00 PM to 7:15 PM; PLACE: IT 162.

- HOW TO CONTACT ME:
  Office: LD 224 T, 402 N. Blackford St.
  Phone: (317) 278-7460
  E-mail: (please, use you university computer account to e-mail me)
  Web Page: http://www.math.iupui.edu/~alexey/266/Fall13
  Office Hours: Monday and Wednesday from 2:15 PM to 3:15 PM.
  You are encouraged to write/come with any questions you may have.

- COURSE PREREQUISITES:
  A student registering for this class must satisfy the following conditions:
  - Completed MATH 16600, and MATH 17100 (MATH 26100 recommended) with minimum grade C- within past two academic years;

- WITHDRAWAL DATES:
  August 26 - last day to withdraw, course deleted from records, no grade assigned (Advisor signature IS NOT required).
  October 11 - last day to withdraw with automatic grade of W (Advisor signature IS required).
  November 12 - last day to withdraw with grade of W or F (Advisor and instructor signatures ARE required).
  The Associate Dean for Academic Program will not endorse a withdrawal after this date unless a serious and documentary excuse is established

- TEXT:
  Paul Blanchard, Robert L. Devaney, Glen R. Hall
  Differential Equations. Fourth Edition
  The class includes the following topics
  - first and second-order differential equations
  - systems of first-order differential equations
  - qualitative analysis of solutions for differential equations
  - the Laplace transform,
  - numerical methods
  - discrete dynamical systems

  We will cover Chapters 1– 4 and 6 of the textbook. Chapters 5, 7 and 8 will be covered if time permits.
  Some sections may be skipped or covered in a different order than in the textbook.

- CONTENT
  The study of differential equations is a beautiful application of the ideas and techniques of calculus to everyday life. The textbook focuses on the formulation of differential equations and the general interpretations of their solutions, eliminating most of the specialized techniques. Two approaches are combined for each equation to obtain an understanding of the solutions: qualitative and analytic. Overall, the class teaches how to identify and work effectively with the mathematics in everyday life and how to express the fundamental principles that govern many phenomena in the language of differential equations.

- STRUCTURE OF THE COURSE:
  LECTURES: Attendance is required. In each class, I will go over the key concepts that you need to understand with an emphasis on examples and problems similar to those that you will be expected to do. Most students find trying to learn a material by themselves much more difficult and time consuming. The lectures will be interactive, so, if you do not understand something, you are encouraged to ask.
  HOMEWORK: In each lecture, I will give a homework assignment. After each class, it is strongly recommended that you do the assigned problems. First, try to solve each problem on your own. If you have difficulty solving a problem, refer back to some of the examples that I did in class. If you still have difficulty, then you should seek help as soon as possible from the WAYS TO GET HELP, listed below. Homework assignments will not be collected, however, quiz and exam problems will be similar to the homework problems.
  QUIZZES AND EXAMS: There will be a quiz or an exam every week. The quizzes are going to be at the beginning of each Monday lecture and take 15-20 minutes. The quiz problems will be similar to the in-class and homework problems assigned in the last two lectures. Doing the homework problems will be the best way to do well on the quizzes. Exam
Assignments are devised to test your understanding of the material rather than just the ability to do problems exactly similar to those you have been previously asked. The best way to prepare for exams is to make sure that you have understood the conceptual ideas behind the problems, rather than just memorizing how to do them.

**WAYS TO GET HELP:**
- Work with other students from the class on solving problems.
- Come to my office during office hours (or make an appointment).
- Ask for help at Mathematics Assistance Center at IUPUI
  - Web: [http://mac.iupui.edu/](http://mac.iupui.edu/)
  - Phone: (317) 274-7898
  - Email: Mathmac@iupui.edu
  - Address: University College Building, UC 102; 815 West Michigan Street; Indianapolis, IN 46202

**EXAMINATIONS:**
There will be two midterm in-class exams during regular lecture times. Its tentative date for the first midterm is **October 9th**. The tentative date of the second exam is **November 25th**. These dates may change, and, if this occurs, I will announce the new dates as soon as possible. Attendance is required at all exams. This course also has a required **Final Exam**, which is scheduled for **Wednesday, December 11 from 6:00 to 8:00 PM**. To receive credit for this course, you must take the final exam on the assigned date, at the assigned time, and in the assigned room. Plan your schedule accordingly.

**QUIZ AND EXAM POLICY**
The quizzes and exams are closed books and no "help" sheets will be allowed. Graphing calculators will not be permitted during quizzes and exams. No cell phones are allowed out during quizzes and exams. Any student caught with their phone or graphing calculator out will receive an automatic "0" on that quiz or exam. Remember that both your answer and reasoning must be correct. Show all of your work to receive maximum credit. You may receive partial credit even if you haven't completed an assignment. By contrast, even if you have a correct answer, you don't receive full credit if you don't show how you get it. Please write your solution in well-organized manner and indicate a final answer clearly. Extra time to finish a quiz or exam will not be given for those arriving late. If you miss an exam or quiz you will receive a zero for that exam or quiz. **No make-up quizzes and exams** will be given. Exceptions of this are possible only in circumstances of serious medical problems or family emergencies. In these circumstances the problem must be completely documentable and I must be informed of it as quickly as possible. If I authorize a make-up exam or quiz, it will be both different from and more difficult than the original exam or quiz since it would be presumed that you had the benefit of seeing the original exam or quiz and having additional time to study for it.

**GRADES:**
The following scores will contribute to your final grade: quiz average (20%), two midterm exams (25% each), and the final exam (30%). The grading scale is the following: A > 90 > B > 80 > C > 65 > D > 50 > F.