Math 307D Course Information

Summer Quarter 2013
Differential Equations

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<tr>
<td>Time and Place</td>
<td>MWF 1:10 – 2:10pm Denny Hall (DEN) 307</td>
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<tr>
<td>Instructor</td>
<td>Andrey Sarantsev</td>
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<td>Instructor's Office</td>
<td>Padelford Hall (PDL) C552</td>
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<tr>
<td>Instructor's email</td>
<td><a href="mailto:ansa1989@math.washington.edu">ansa1989@math.washington.edu</a></td>
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<tr>
<td>Office Hours</td>
<td>Wednesday 11am – 12pm, 2:30pm – 3:30pm in my office</td>
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**Syllabus.** This course covers first- and second-order differential equations: solutions in exact form, numerical methods, existence and uniqueness questions, applications in physics, finance and other areas.

**Prerequisites.** Math 124/5, grade 2.0, or equivalent courses from other colleges/universities. Math 126 is recommended.

**Do you need this?** This course is often chosen by future STEM (Science, Technology, Engineering and Math) majors. However, it is pretty advanced, so it is likely too hard for students of other majors, e.g. humanities, arts, business, pre-med, communications, etc. If you are in such major or do not yet have any major, think twice before registering for this course!

**Textbook.** Elementary Differential Equations and Boundary Value Problems (BVP), by William E. Boyce. Custom UW edition. The course covers Chapters 2, 3, 6 (most of them).

**Midterms.** There are two midterms, July 12, Friday, and August 2, Friday. Each of them is 1 hour long (the whole lecture) and contain five problems. The first midterm covers first-order differential equations (chapter 2). The second midterm covers second-order differential equations (chapter 3), including some applications in physics (mechanical vibrations). You are allowed a cheat sheet of standard form: 8.5x11 inches, double-sided. You do not need to submit it after the midterm. You can also use a calculator: see “Calculators” below.

**The Final Exam.** August 23, Friday. It is 1 hour long (the whole lecture) and contains five problems. The Final Exam is cumulative, which means that it covers the whole course (not just topics covered after the second midterm). You are allowed a cheat sheet of standard form: 8.5x11 inches, double-sided. You do not need to submit it after the midterm. You can also use a calculator: see “Calculators” below.

**Homework.** Homework is due on Wednesday at 5:00pm, starting from the second week: There are 6 assignments, on weeks 2, 3, 5, 6, 8, 9. You must drop your homework into the mailbox at my office. It will be hand-written (no Webassign). It will be graded by a separate grader and returned next week.
Grading Scheme. It is preliminary and is subject to change. The median will be in the range 3.0–3.3. You are allowed to drop the worst homework.

- 10% homework
- 30% midterm 1
- 30% midterm 2
- 30% final

Grading Issues. Each midterm will be handed back to you the Monday after it was given. Re-grade requests can be made during the week following this exam.

Make-Ups. Late homework will not be accepted for any reason. In case of observance of religious holidays or participation in university sponsored activities, arrangements must be made at least 1 week in advance for exams. You will be required to provide documentation for your absence. Make-up exams will not be given. If you miss an exam due to unavoidable, compelling, and well-documented circumstances, the other two exams will be weighted more heavily.

Calculators and Notes. Calculators which can do calculus (with “CALC” buttons or signs of d/dx near a button) are prohibited on quizzes and exams. This rule will be strictly enforced. Absolutely no exceptions will be made. However, it is useful to have a scientific calculator: it is recommended but not required. It must have trigonometric functions, like sin and cos, as well as logarithms and exponentials: ln and exp. In case of doubt, show your calculator to the lecturer before the first quiz, and preferably during the first week.

Respect Issues. Disrespect will not be tolerated. As with all your life, you should treat others just like you yourself would like to be treated. Come to class on time (better never than late) and do not leave class early. If you can special circumstances where you need to arrive late or leave early, please contact me ahead of time and sit close to the door so that you do not distract your classmates when you enter or exit.

Do not use electronic devices during class. If you want to listen to your iPhone, send text messages to your friends, or play on your computer, then don’t come to class. This is completely disrespectful to me and your classmates. So please put away and turn off your electronic devices before class.

Finally, please show me respect when you have a question for me or when you send me an e-mail. You are well within your right to ask about homework and exam grading, but you will get nowhere if you are argumentative or rude. I will do everything I can to help you all succeed in this course. I put in a lot of extra time and effort to help each of you in any way that I can. In fact, lecturing and having full responsibility for the whole course is not easy at all. This effort deserves and demands your respect! We should all be working together, not against one another.

Class Philosophy. There are two vital rules for success in this classroom.

1. THE HOMEWORK IS THE KEY. In mathematics, breakthroughs in learning rarely occur while reading the text or attending lecture. Mathematics is truly learned when you completely solve a problem yourself and understand the underlying concepts and tools so as to be able to apply them to related problems. The lecture, tutorial sessions, and office hours are valuable tools in guiding you towards learning and discovery, but ultimately the concepts and solutions must be absorbed, understood, and applied by you alone.
Treat each problem as an exam question and ask yourself, “Can I answer this question without any help and do I understand the underlying principles that this problem conveys?” If your answer is no to either of these question (or if you hesitate at all), then you need more studying and practice.

2. **ASK FOR HELP.** Many students will hit a wall at some point during the course. Some can’t handle the large workload, while others find difficulty with specific concepts in the course. When these times arrive remember to ask for help. Come to me, ask your classmates for help, visit the math study center and/or visit the student counseling center. If you still stumped send me an email.

You are never more than a step away from getting help. These are just a few of your options. Please, please, please find help earlier rather than later. You are all smart enough to do well in this course; the question is whether or not you are determined enough.

**Attending Office Hours.** Even if you do not have any questions, you are very welcome to attend my office hours just to chat about life, expand the material of the course, find out something about me, etc. I will have additional office hours and/or review sessions before each exam (midterms and/or the Final Exam), time TBA.

**Additional Resources.**
1. The Center for Learning and Undergraduate Enrichment (CLUE) holds drop-in tutoring sessions every weekday evening in Mary Gates Hall Commons. See [http://depts.washington.edu/clue/](http://depts.washington.edu/clue/) for more details.
2. The University of Washington is committed to providing access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodations contact the Disability Services Office at least ten days in advance at: 206-543-6450/V, 206-543-6452/TTY, 206-685-7264(FAX), or [dso@u.washington.edu](mailto:dso@u.washington.edu).
3. The Student Counseling Center provides academic skills workshop on a variety of topics including stress management, test anxiety, and time management to help you succeed at the University of Washington. If any of these is an issue for you, check out the schedule of workshops at [http://depts.washington.edu/scc/studyskills.html](http://depts.washington.edu/scc/studyskills.html).