

MATH 320 - Differential Equations & Linear Algebra

Fall 2015 Syllabus

MWF 9:55-10:45am in Van Vleck Hall, B239

Instructor: Saverio Spagnolie

Office: Van Vleck Hall, 505

Office hours: MW 3-4pm, F 1-2pm, or by appointment

Email: spagnolie@math.wisc.edu

Course website: http://piazza.com/wisc/fall2015/math320_003_fa15

Textbook:

Edwards and Penney, Differential Equations and Linear Algebra, Third Edition, Prentice Hall. We will cover

Course Content:

Differential equations are the fundamental tools that modern science and engineering use to model physical reality. The importance of differential equations to these disciplines cannot be overemphasized. A distinct subject in its own right, linear algebra is a part of mathematics concerned with the structure inherent in mathematical systems. We shall study these subjects together for three reasons: (1) The viewpoint of linear algebra is immensely helpful in uncovering the order underlying the topic of differential equations; it helps us understand the “why” and not just the “how” of our calculations. (2) Linear algebra is essential to the theory of differential equations. And (3) linear algebra is crucial to the computer approximations which are often the only way to solve the most challenging differential equations. Accordingly, the course will include a computational component.

Teaching Assistants:

Yang Yang, Ke Ma

Exam dates:

Three midterm exams will be held during the regularly scheduled class time. Approximate dates are: Monday Oct. 12, Monday Nov. 23, and Monday Dec. 14. Calculators are not permitted during the exams.

Homework:

Homework will be assigned weekly and due at the beginning of class (otherwise it will be considered late). Staple your homework. You are allowed (and encouraged) to work with others, but you must turn in your own assignment. Late homework will be accepted until 5pm on the due date with a 20% penalty. Finally, write clearly. I have instructed the TAs not to waste time trying to interpret poorly communicated mathematics, and instead to simply take points off.

Grading:

The final grade will be set by scores on homework and sectional quizzes (25%) and three midterm exams (25% each). The lowest homework score will be dropped. The final grades will be no less friendly than: A ($\geq 93\%$), AB (88%-92%), B (83%-87%), BC (78%-82%), C (70%-77%), D (60%-69%), F ($<60\%$).

Respect / Honor code:

By enrolling in this course you have tacitly entered into an unwritten contract with the instructors for mutual respect. Your instructors will show you respect and earn their own by working hard to deliver a well organized and thought-out learning experience for you, with the goal of making you better thinkers and workers for all your future endeavors, mathematical and otherwise. In turn, you will earn your respect and show it in return by working hard, and working honestly. (Anyone caught cheating will be subject to a failing grade in the course and also further administrative action at the university level. Don't waste my time and yours with this nonsense.)

Many people of all ages now have an exceptionally low threshold of discomfort, and this is exacerbated by the escapist and calming effect of an adult pacifier, the cell phone. A critical component to your education in mathematics and more broadly is expanding your tolerance for certain types of mental discomfort. Learning and listening intently is frequently going to be uncomfortable, but in the end you will truly be stronger for it. In addition, your instructors are disrespected when you are texting/emailing/web-surfing in class.