

Math 309 A Spring 2021 Syllabus

Reed Meyerson

General Information

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Class Time: Mon/Wed/Fri 8:30-9:20

Course Website: <https://reedmeyerson.com/teaching/math-309-a-spring-2021>

Office Hours: Mondays and Wednesdays after class (9:30-10:30)

Book: *Linear Analysis* by Boyce and DiPrima (any edition) **OR** *Elementary Differential Equations and Boundary Value Problems* by Boyce and DiPrima (any edition)

Course Description

This course breaks naturally into two parts. In the first part, we cover systems of ordinary differential equations (ODEs). There is a heavy focus on linear systems, but we will also cover non-linear systems qualitatively (i.e. we would like to be able to *understand* non-linear systems without actually having to solve them).

In the second half of the course, we cover basic partial differential equations (PDEs). This includes the heat equation, the wave equation and Laplace's equation. To solve these PDEs, we will need to develop a basic understanding of Fourier series.

The two halves of the course are tied together by notions of "linearity". Thus, we will discuss vector spaces, linear transformations, inner product spaces and spectral theory.

Course Structure

All graded work (homework/quizzes/exams) will be handled through Gradescope. All course materials are available on the course website **except** anything that is privacy-sensitive, such as the Zoom link and the Zoom recordings. There will be live lectures Mon/Wed/Fri via Zoom. The lectures will be recorded, and posted to Canvas **as long as the attendance is at least 60%**. There will be about one homework assignment per week and short quizzes every other Wednesday. We will have one midterm on ODEs and one cumulative final. However, the final will skew heavily towards the material on PDEs and Fourier series. There will be weekly homeworks, and a quiz every other week. The different portions of the course are weighted according to the following table.

Homework	5%
Quizzes	10%
Midterm	40%
Final	45%

All homeworks are worth the same amount, regardless of the number of questions. An overall score of at least 60% (calculated using the table) will guarantee a passing grade of 2.0. An overall score of at least 95% will guarantee a grade of 4.0. These milestones can be changed, but only in your favor (i.e. it is possible *but definitely not guaranteed* that a score of 57% could be a 2.0, or a score of 93% could be a 4.0).

Religious Accomodations

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at Religious Accommodations Policy (<https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/>). Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form (<https://registrar.washington.edu/students/religious-accommodations-request/>).

DRS Accomodations

If you qualify for, and require DRS services for this course, please get in touch with me ASAP, and we will agree on a method for taking tests/quizzes/turning in assignments that meets your requirements.