

MATH 3100 - INTRODUCTION TO ANALYSIS - SPRING 2021

Instructor: Professor Jesse Peterson

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Office: Zoom meeting ID: 712 106 4339

Office Hours:

Mondays 3:50 pm - 5:20 pm

Wednesdays 11:00 am - 12:00 noon

Course:

Introduction to Analysis is the study of the foundations of Calculus and is designed to bridge the gap between the intuitive calculus normally offered at the undergraduate level and the sophisticated analysis courses the student encounters at the senior or first-year-graduate level. This course is an introduction to the theory of the real number system, sequences and limits, continuity of function, derivatives, and the Riemann integral. Much of the course material will be familiar from calculus, but the focus here is on understanding and writing mathematical proofs.

This course is good preparation for graduate study in mathematics, and is a good course for secondary mathematics teachers and actuaries who wish to have a solid understanding of calculus.

Prerequisites: The calculus sequence (Math 1200, 1201, 2300).

Schedule: MWF 1:50-2:40. All lectures will be held on-line.

Book: Introduction to Analysis, Fifth Edition by Edward D. Gaughan. ISBN-13: 978-0821847879.

Website: <https://math.vanderbilt.edu/peters10/teaching/spring2021/math3100.html>

Homework:

Homework assignments will be due by the end of each Wednesday (excluding the first week and reading days February 24 and April 7). For each assignment the class will be split into groups of about 4 students each, and each group will be responsible for jointly completing the assignment. The groups will be chosen by the instructor and may change for each assignment. Solutions to the assignments must be composed using LaTeX, and only the .tex file should be submitted to be graded.

A convenient options for collaborating online with LaTeX is Circle Z. To access, go to <https://tex.rossprogram.org/> and start working. Youll be redirected to a web address of the form <https://tex.rossprogram.org/RanD0mStr1Ng>, and sharing this web address with your collaborators will allow you to edit the same document.

Exams:

There will be three take-home exams during the semester. They will be due by 6pm central time respectively on the following dates:

Friday, February 26th.

Friday, March 26th.

Friday, April 23rd.

The exams will be sent out at least by the morning before they are due. Students may use all available resources so long as they do not receive direct help from another person. So, for example, it is okay to use the course textbook, the course notes, and results from internet searches, but it is not okay to discuss the exam with another student, to ask a professor other than the course instructor, or to ask for help on an internet forum such as math.stackexchange.com.

The solutions for the exams may be written in LaTeX and submitted as a .tex file, or students may handwrite solutions and then submit a copy as a .pdf file.

Final exam:

The Final exam will also be a take-home exam, and the policies described above for the take-home exams will apply also to the final exam. The final exam will be due by 6pm central time on:

Monday, May 10th.

Late assignments:

Late homework and exams will be accepted with a numerical grade deduction at the rate of 1 percentage point/hour, rounded up. So if the first take-home exam is turned in on Friday February 26th at 6:30pm, there will be a 1 percentage point deduction, while a take-home exam that is turned in on Saturday February 27th at 4:15pm will have a 23 percentage point deduction.

This policy does not apply to the Final exam. The Final exam will not be accepted after Monday, May 10th.

Grades:

The usual grading scale used will be: A:93-100, A-:90-92, B+:87-89, B:83-86, B-:80-82, C+:77-79, C:73-76, C-:70-72, D+:67-69, D:63-66, D-:60-62, F:0-59. The final grade will be based on the homework (25%), tests (15% each), and final exam (30%).

Academic integrity:

You will all be held to the standards set forth in the Student Handbook:

https://www.vanderbilt.edu/student_handbook/

Make-up policy:

There will be no make-up tests or homework assignments. The attendance and make-up policy will follow the guidelines set forth by the College of Arts and Sciences.

Important information from the math department:

The last day for students to add a math course or to make other changes in YES is Friday, January 29th. Between January 30th and February 8th, any withdrawals or adjustments in level or in grading status must be completed using the Change of Course Request Form. If only the "DROP" section of the form is filled out, the instructor may "sign" the form. If a student wishes to make any change that involves filling in the ADD section of the form (whether or not it also involves filling in the DROP section), then the student must contact the DUS (John Rafter) or the Assistant DUS (Jakayla Robbins). Per Math Department policy, the only change to a math course that will be approved is a change to the level of the course (e.g. switching from Math 1301 to Math 1300 or vice versa).