

MATH 3210: THE FOUNDATIONS OF ANALYSIS

Instructor: Yael Algom Kfir, JWB 128, yael@math.utah.edu

Office hours: Every day except Thursday at 2pm.

Course Website: <http://www.math.utah.edu/~yael/3210public/m3210.html>

Important dates:

Class begins	6/9
Class ends	8/1
Last day to drop	6/18
Last day to withdraw	7/2
No class	7/4
Midterm	6/30
Final	8/1

Text: We will be following Professor Joseph Taylor's notes which can be downloaded from:

www.math.utah.edu/~taylor/foundations.html

From time to time I might digress from this text, as I see fit (especially in the beginning of the course). Other texts you might find useful:

- Steven R. Lay - Analysis with an introduction to proof
- William R. Wade - Introduction to analysis

These give a “user-friendly” introduction to proofs but after a while they get a bit tiresome. There are copies of these books on reserve in the Math Library.

Course Description: The purpose of this course is twofold; the rigorous development of the calculus of one variable and to develop the student's ability to read and write (rigorous) proofs.

Homework: Proof literacy is a bit like playing the piano - you can't learn it by watching someone else do it. If you wish to obtain any kind of proficiency in writing and understanding proofs you have to work hard throughout the semester. Waking up a couple of weeks before the final is tantamount to learning to read notes a day before the grand recital - it won't work!!

I'll assign homework on the course website roughly twice a week. Late submissions will not be accepted. However, I do not wish to waste time and energy enforcing the rules. Technically homework will not be mandatory, but I expect you to have the self discipline and motivation to do it for two reasons. One is that otherwise you can't possibly succeed in this class. And secondly, your homework grades will only have a positive influence on your final grade (the more homework you hand in the more they can save you if you botch an exam).

Grading: The final grade will be a number between 0 – 100 which will later be converted to a letter grade. It will be made up of the following components:

- Exams - There will be a midterm worth 30%, and a comprehensive final worth 70% of the exam grade. The formula for the exam component is

$$\text{exam_gr} = 0.3 \cdot \text{midterm} + 0.7 \cdot \text{final}$$

- Homework component - I will assign approximately 14 homework assignments. The weight of the homework component will depend on the number assignments which receive a better grade than your exam component. If k of them are better than exam_gr then the homework will be worth $k * 3\%$ of the final grade (and the rest will be the exam component).

For example: If 10 of your assignments are better than the exams then your final grade will be 30% homework and 70% exams. If only two assignments are better than the exams the final grade will be 6% homework grade and 94% exams. The formula for the final grade is:

hw = the average of homework grades better than exam_gr

k = the number of homework grades better than exam_gr

w = weight of homework grade = $0.03 \cdot k$

$$\text{final grade} = w \cdot \text{hw} + (1 - w) \cdot \text{exam_gr}$$

ADA Statement: The American with Disabilities Act requires that reasonable accommodations be provided for students with physical, sensory, cognitive, systemic, learning, and psychiatric disabilities. Please contact me at the beginning of the semester to discuss any such accommodations for the course.

I reserve the right to make reasonable changes in class policy as I see fit. Any such changes will be announced in class and posted on the website.