This is an incomplete version of the syllabus, which addresses only the academic aspects of the course. Additional files as well as subsequent updates are posted on Canvas

Syllabus for MATH 3210-001 Fall 2021

Foundations of Analysis I

Course Description (preliminary version, subject to change)

Instructor: Henryk Hecht, JWB 329

email: hecht@math.utah.edu

Days/time: MTWF 9:40 am-10:30 am in CSC 208.

Office Hours: to be decided later

Textbook: Joseph L. Taylor, Foundations of Analysis, American Mathematical Society, Providence 2012. ISBN 978-0-8218-8984-8

General Goals: The main goal of this course is to provide students with a rigorous approach to the theory behind calculus. This is the first course of the MATH 3210–3220 sequence of *Foundations of Analysis*, a sequence designed to develop the mathematical sophistication of students, while giving them a much deeper understanding of calculus and its foundations than can be provided in the standard courses (MATH 1210, 1220, and 2210). The emphasis is on improving student's ability to understand and explain concepts in a logical and complete manner and refine their skill at proofs and mathematical arguments.

Course Content:

The course covers the following chapter-topics in the textbook. Some of the material (especially in Chapter 1) will be presented differently.

Supplementary notes will be provided.

Chapter 1: Real Numbers

Chapter 2: Sequences

Chapter 3: Continuous Functions

Chapter 4: The Derivative

Chapter 5: The Integral

Chapter 6: Infinite Series

Assignments and Grading:

Grading is based on homework and three midterms. Homework is assigned on a (roughly) weekly basis. Many of the homework exercises involve proving theorems or providing examples that illustrate the course material.

Final grade is assigned using the following evaluation method:

Weekly homework assignments, count 40% toward the final grade.

Tests, count 60% toward the final grade.

The lowest three homework scores are dropped.

Typically letter grades are assigned as: **A:** 94%+, **A-:** 89%-93%, **B+:** 84%-88%, **B:** 80%-84%, **B-:** 74% - 79%, **C+:** 68%-73%, **C:** 61%-67%, **C-:** 55%-60%, **D:** 50%-54%, **E:** < 50%

Test Dates:

10/06/2021	Wednesday	Test 1
11/03/2021	Wednesday	Test 2
12/13/2021	Monday	Final Exam

Both tests will be held In Person in our room during the regular meeting time.

The final exam will be held In Person in our room from 8:00am to 10:00am.

The course starts on Monday 08/23/2021 and ends on Wednesday 12/08/2021.

More about Homework. You may consult with your colleagues on homework. However, your final work and write-up has to be your own.

More about Tests. Tests are open textbook (our textbook). They are also open notes. However, the notes must be based entirely on the textbook and material presented in class. You cannot use results from other sources. In particular, you cannot use results from internet. You cannot communicate with anybody during the test. All electronic devices, earphones, etc. must be turned off.

Students are encouraged to review the Student Code for the University of Utah:

https://regulations.utah.edu/academics/6-400.php/

Course Delivery Technical Details

All the information about the course will be provided on Canvas. Students should log in into their Canvas account at least once a day.

I will post notes relevant to the lectures. I will teach in class using iPad and possibly the glass boards installed in the room. Aside from introducing concepts and proofs we will work on multiple problems. Questions are strongly encouraged.

Homework will be posted on Canvas as a dated assignment and must be returned on Canvas by the due date.

If you have a tablet or a similar computerized writing surface, the simplest method is usually to download the exam or homework pdf, write directly on that, and then reupload it to Canvas. Otherwise, if you have a printer you can print out the exam, write on that, and then scan and upload the writeup. If you do not have a printer you can simply write your solutions on a blank piece of paper, clearly indicating which problem you are solving. If you do not have a scanner there are many apps that convert your smartphone into a scanner. Please make sure you have an app that can convert the files into pdf format.

Please only upload one file per homework. All files should be converted into pdf format so that I can mark them up online for you to receive comments.

We will meet in CSC 208. This is a huge room, so there will be no problem self – distancing, which I encourage. The class will be delivered using iPad and possibly the installed glass boards.