Course Syllabus

Syllabus for MATH 3220-002 Spring 2021

Foundations of Analysis 2

(preliminary version, subject to change)

This course will be delivered in two modes:

In-Person Mode: Course will take place **in the classroom CSC 208**

IVC Mode: (IVC stands for Interactive Video Conferencing) Course will take place on Canvas using Zoom technology

Dates	Modes
01/19/2021 - 03/01/2021	In Person
03/02/2021 - 03/12/2021	IVC
03/15/2021 - 04/27/2021	In Person

Course Description

Instructor: Henryk Hecht, JWB 329

email: hecht@math.utah.edu

Days/time: MTWF 10:45 am-11:35 am

Office Hours: to be decided later

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

Additional Resources: there will be supplementary notes and videos posted. You may use Internet resources at your own risk. Quoting or using theorems, results, etc. from internet or other sources is not acceptable in homework and tests.

General Goals: The main goal of this course is to provide students with a rigorous approach to the theory of several variables' calculus. This is the second 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 the students' ability

to understand and explain concepts in a logical and complete manner and refine their skill at proofs and mathematical arguments. Students who finish both semesters of the sequence should have the mathematical knowledge and sophistication necessary to do well in 4000 and 5000 level mathematics courses.

Course Content:

The course covers the following chapter-topics in the textbook. Some of the material (especially in Chapter 7) will be presented differently. Supplementary notes will be provided.

Chapter 7: Convergence in Euclidean Spaces

Chapter 8: Functions on Euclidean Spaces

Chapter 9: Differentiation in Several Variables

Chapter 10: Integration In Several Variables

Assignments:

Homework: Homework will be assigned roughly on a weekly basis.

Tests: There will be four in class tests, Date of tests are given in the table below.

02/23/2021	Test 1
03/19/2021	Test 2
04/12/2021	Test 3
04/27/2021	Test 4

Grading:

Grading is based on homework and tests. 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.

Optional Quizzes (Extra Credit) add up to 10% toward the final grade,

The lowest three homework scores and the lowest test score are dropped.

Typically letter grades are assigned as: **A:** 93%+, **A-:** 89%-92%, **B+:** 84%-89%, **B**: 79%-84%, **B-:** 74% - 78%, **C+:** 68%-73%, **C:** 61%-67%, **C-:** 55%-60%, **D+:** 50%-54%, **D:** 45%-49% **D-:** 40%-44%, **E:** < 40%.

Let me emphasize that grades will be computed using the formula above. I don't grade on a curve. Although all scores will be recorded and visible to you in Canvas, Canvas will not be used to determine the grade.

Barring Covid emergencies, all tests and the final will be administered in the classroom. Therefore all electronic devices, earphones, etc. will have to be turned off. More details will be provided later.

*******Cheating will not be tolerated*******

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

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

Course Delivery Technical Details

Both IVC and In-Person Modes: All the information about the course will be provided on Canvas. Students should log in into their Canvas account at least once a day.

During lectures we will introduce new material and do multiple problems. Questions are strongly encouraged. Notes of the lectures will be posted on Canvas.

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 homework pdf, write directly on that, and then re-upload it to Canvas. Otherwise, if you have a printer you can print out the exam, write on that, and then scan and upload the write-up. 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. All pages have to be submitted in a correct order.

In-Person Mode: We will meet in **CSC 208**. This is a big room, so there will be no problem self – distancing. The class will be delivered using an Ipad and projections screens, whiteboard . If feasible, the class will be recorded, and the video will be put on Canvas so if you need to miss a lecture you can always watch it later. Class recordings will not be made available to the general public and will be deleted at the end of the semester but be aware that a recording will exist for a few months. Because of this, please refrain from giving out any sensitive personal information during class time, such as grade information, ID numbers, housing details, etc. Tests will be held in class during the regular class meeting time. Attendance in class is encouraged by not mandatory, except, of course, for tests (see however the information at https//:coronavirus.utah.edu).

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IVC mode: We will meet via the Zoom video conferencing software. If you don't have Zoom you can download it for free from zoom.us/download. It is strongly suggested that you have a webcam and microphone to fully participate in class, but you should not need anything else. It is also possible to dial in to hear the audio with just a phone.

The Zoom meeting details (Meeting ID and Passwords) will be provided later.

I will lecture using Ipad, which integrates nicely with Zoom as a shared screen.

During class time I ask that everyone keep their microphones muted to eliminate background noise. You may also turn off your video if you so desire. If you would like to ask a question, feel free to unmute yourself and interrupt me. If you are speaking please do turn on your video, if possible. It's also helpful if you identify yourself verbally so that I know who is speaking.

Classes will be recorded and made available on Canvas, so if you need to miss a lecture you can always watch it later. Class recordings will not be made available to the general public and will be deleted at the end of the semester but be aware that a recording will exist for a few months. Because of this, please refrain from giving out any sensitive personal information during class time, such as grade information, ID numbers, housing details, etc.

More complete, and current version of the syllabus is posted on Canvas.