

MATH 3210-001 – Foundation of Analysis I – Spring 2021

Time MWHF 9:40–10:30am via Zoom video conference.

Location This class will meet virtually.

Canvas The course webpage is hosted on Canvas. Official announcements, this syllabus, homework assignments, and any other information regarding the course can be found on the Canvas page: <https://utah.instructure.com/courses/657233>

Instructor Prof. Tommaso de Fernex (defernex@math.utah.edu)

Office Hours To be determined at the beginning of the semester based on polling.

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

Course Description This course focuses on the theory behind single-variable calculus. It takes a proof-based approach to the real numbers, sequences, infinite series, continuity, differentiation, and integration. The emphasis is on improving the students ability to understand and explain concepts precisely, logically, and completely, especially their ability to understand and write mathematical proofs. Math 3210 is the first course in the 3210–3220 Foundations of Analysis sequence.

We will cover chapters 1-6 of the textbook, which are:

Chapter 1: Real Numbers

Chapter 2: Sequences

Chapter 3: Continuous Functions

Chapter 4: The Derivative

Chapter 5: The Integral

Chapter 6: Infinite Series

Prerequisites C or better in ((MATH 2210 OR MATH 1260 OR MATH 1280 OR MATH 1321 OR MATH 3140) AND (MATH 2200 OR MATH 2270 OR MATH 2250)).

Overview This a synchronous online Interactive Video Conference (IVC) course which will meet via Zoom at the class meeting times. Attendance is *strongly encouraged* but not mandatory. Live class lectures will be recorded and posted to Canvas.

Homework will be assigned weekly and turned in electronically.

Exams will be administered “in-class,” meaning they will be proctored via Zoom during the class meeting time and submitted electronically.

Students are encouraged to participate in class activities and discussions, form study groups, ask/answer questions of their peers, and ask/answer Canvas discussion posts. However, the work a student turns in must be their own, reflecting their own understanding. Copying someone elses homework solutions constitutes plagiarism, and using outside resources on an exam constitutes cheating. Both are violations of the U’s honor code and will be reported to the College of Science.

Technical Requirements:

- Students are expected to be computer literate, and Canvas and Zoom navigation skills are expected. Knowledge and navigation of Canvas and Zoom is critical to access all features and resources of this course. If you don't have Zoom, you can download it for free from zoom.us/download. The Zoom link on the Canvas page is where you should go to join class meetings.
- Exams will be proctored during class time in Zoom and all students will be expected to have a working webcam and microphone. A cell phone can possibly be used for this purpose.
- Students MUST use their U-mail email account ([u-number]@utah.edu) for all student-instructor email correspondence, and must send email to the instructor using the email address listed above. Check your U-mail regularly because all official class announcements will be sent through this email.
- It is expected that students will receive Canvas messages and notifications to their email. In Canvas, go to Account > Notifications to make sure you receive Canvas messages and notifications in your email.
- The university suggests that you use Firefox, Chrome, or Safari to login to Canvas, but not Internet Explorer. For any technical help with Canvas, you should contact the UOnline Helpdesk at (801) 581-6112.

For information on borrowing a laptop from the university or about off-campus wifi access, see <https://lib.utah.edu/coronavirus/checkout-equipment.php>

Submitting Assignments

You will submit your homework and exams online via Canvas.

Each student will be responsible for creating a readable PDF file and submitting it electronically on Canvas before the deadline. Only upload one file per assignment.

How to create a PDF file? Here are some options:

- You can write your solutions on a blank piece of paper, clearly indicating which problem you are solving, then scan your solutions into a single PDF file using an app or a scanner. (Do not “take a picture,” but use a scanner app instead.)
- If you have a tablet or similar computerized writing surface, you can write your solutions on the tablet and export it as a PDF.
- Homework (but not exams!) can be typed up in LaTeX or other editors (if you use Microsoft Word, make sure to convert the file to PDF).

Please reach out if you have any questions about this.

Homework

Homework will be assigned weekly and is worth 30% of the total course grade. They will be assigned on Canvas, and will be submitted, graded, and returned via Canvas.

The two lowest scores will be dropped. Late homework will not be accepted except in extenuating circumstances such as illness. In such cases, please let me know as soon as possible that you need to submit late.

You are encouraged to discuss the homework problems with others, but you must write your own solutions, in your own words, based on your own understanding.

Exams

There will be three midterm exams and one comprehensive final exam, cumulatively worth 70% of the total course grade. Of the three midterms, the lowest score will be dropped.

These exams will be “in-class” in the sense that they will be administered during class time and proctored via Zoom. You will need a microphone, webcam, and decent internet connection to take the exam, as I will ask you to turn on your camera as I monitor the exam. If this arrangement is impossible please let me know as soon as possible.

Exam dates are:

Exam 1: Friday, February 12

Exam 2: Friday, March 12

Exam 3: Friday, April 9

Final Exam: Monday, May 3, 8:00–10:00am

Exams will be closed book and closed notes, with no calculators. Online resources and communication with others is not allowed during the exams, and all work must be the student's own. Violation of these rules will be considered academic misconduct, may result in a zero in the exam, and will be reported.

Grading The following are the grade components and the percentage each contributes to a student's final grade:

- Weakly homework (two lowest scores dropped): 30%
- Midterm exams (lowest score dropped): 40%
- Final exam: 30%

I anticipate assigning letter grades as follows:

A	A	B+	B	B-	C+	C	C-	D+	D	D-	E
100-92	91-88	87-84	83-78	77-74	73-70	69-64	63-60	59-56	55-50	49-46	45-0

COVID Specific *In the Case of a Stay-at-Home Order:* Should a stay at home order go into place, the online nature of this course means that it should be largely unaffected. In this situation, I intend to keep teaching following the same format and schedule. However, I realize that for some students a stay-at-home order may come with additional burdens; if you are in this category, please e-mail me and I will work with you individually to come up with solutions.

Protocol in the Case of Sickness: If I happen to get sick, I will arrange an alternative instructor. Should one of you happen to get sick, please let me know via e-mail, and we will work out an arrangement for future assignments and exams. A reminder that all students, faculty, and staff who are given a positive COVID diagnosis must self-report at <https://coronavirus.utah.edu>

Resources and Policies

Student Responsibilities All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, and I will do so, beginning with verbal warnings and progressing to dismissal from and class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. <http://regulations.utah.edu/academics/6-400.php>

ADA Statement The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability & Access, 162 Olpin Union Building, 801-581-5020. CDA will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability & Access.

Addressing Sexual Misconduct Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veterans status or genetic information.

If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

Student Names and Personal Pronouns Class rosters are provided to the instructor with the students legal name as well as *preferred first name* if previously entered by you in the Student Profile section of your CIS account; this can be managed online by you at any time. I will refer to you with the name and the pronoun that you prefer, in class or on assignments: please advise me of any changes or preferences. For assistance or support, please reach out to the LGBT Resource Center, <https://lgbt.utah.edu>

Diversity and Inclusivity It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally, or for others. In addition, if any of our class meetings conflict with your religious events, please let me know so that I can make alternative arrangements for you.

Undocumented Student Support Statement Immigration is a complex phenomenon with broad impact on those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles to engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center. Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence. The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families. To learn more, please contact the Dream Center at 801-213-3697 or <https://dream.utah.edu>.

Wellness Statement Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a students ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at 801-581-7776 or www.wellness.utah.edu.

Campus Safety The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS

(801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

**University
Counseling Center**

The University Counseling Center (UCC) provides developmental, preventive, and therapeutic services and programs that promote the intellectual, emotional, cultural, and social development of University of Utah students. They advocate a philosophy of acceptance, compassion, and support for those they serve, as well as for each other. They aspire to respect cultural, individual and role differences as they continually work toward creating a safe and affirming climate for individuals of all ages, cultures, ethnicities, genders, gender identities, languages, mental and physical abilities, national origins, races, religions, sexual orientations, sizes and socioeconomic statuses.

**Office of the Dean
of Students**

The Office of the Dean of Students is dedicated to being a resource to students through support, advocacy, involvement, and accountability. It serves as a support for students facing challenges to their success as students, and assists with the interpretation of University policy and regulations. Please consider reaching out to the Office of Dean of Students for any questions, issues and concerns. 200 South Central Campus Dr., Suite 270. Monday-Friday 8am–5pm.

**Student Success
Advocates**

The mission of Student Success Advocates is to support students in making the most of their University of Utah experience (ssa.utah.edu). They can assist with mentoring, resources, etc. Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact a Student Success Advocate for support (<https://asuu.utah.edu/displaced-students>).