

Math 3310.002 Course Syllabus for Spring 2022

COVID-19 Guidelines and Resources

The following guidelines and resources outline expectations for students and instructors of record during the Spring 2022 semester.

Classroom Safety and COVID-19

To help preserve the University's in-person learning environment, UT Dallas recommends the following: Adhere to the University's CDC Updated Guidelines issued on July 30, 2021. All Comets are strongly encouraged to wear face coverings indoors regardless of vaccination status.

Accommodations for Students Who Miss Class for Reasons Unrelated to COVID-19

Individual faculty maintain their discretion on whether and how to accommodate student absences unrelated to COVID-19.

Accommodations for Students Who Must Isolate or Quarantine Due to COVID-19

To keep the UT Dallas community as safe as possible, the University requires students who test positive for COVID-19 or who are close contacts as determined by the campus contact tracing program to isolate or quarantine as applicable. Faculty will be notified by the Dean of Students' Office if a student in their class has been required to isolate (positive case) or quarantine (exposed). Faculty must make lectures available for those students during the period the students must isolate or quarantine. Faculty who need assistance with providing these students access to course content can contact the eLearning Team at elarning@utdallas.edu. Faculty have the discretion to set an attendance policy for their in-person meetings, but the absences due to COVID-19 cannot be counted against an isolated or quarantined student.

Verifying COVID-19 Isolations or Quarantines

Students need to self-report COVID-19 positive results or exposures via an online form so that university campus tracers can verify, record, and take necessary campus precautions. When faculty are notified by students rather than by the Dean of Students' Office that the students are isolating or quarantining, the faculty should remind students to self-report via the form; students should not attend class until cleared by campus tracers.

Vaccinations are widely available, free and not billed to health insurance. The vaccine will help protect against the transmission of the virus to others and reduce serious symptoms in those who are vaccinated. You are encouraged to get a Covid-19 vaccine and register your vaccination status through the voluntary vaccine report form.

Proactive Community Testing remains an important part of the university's efforts to protect our community. Tests are fast and free. Please check the Comets United webpage for additional information.

Student Safety remains an important part of the UT Dallas' efforts to protect our community. All students will adhere to the Comet Commitment. Unvaccinated Comets will be expected to complete the mandatory Required Daily Health Screening. Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action under the Student Code of Conduct – UTSP5003. All students are encouraged to read the Recommendations for Students Returning to Campus issued on August 2, 2021.

Visit Comets United webpage to obtain the latest information on the University's guidance and resources for campus health and safety.

Previous Campus Communications: a list of university announcements made in 2020-2022.

Registrar's Intranet: Please log in with your UTD NetID and password to access this site. Information that faculty need about grading, scheduling, and other essential aspects of our responsibilities related to teaching are made available and updated regularly in the Registrar's Intranet. This source of information can only be accessed by logging in with your UTD NetID and password. Many important faculty questions are answered here, and this is information that faculty members are expected to know and understand.

FERPA Guidelines: you will be asked to log in before you access the FERPA Guidelines webpage on the Registrar's Intranet. If faculty have additional questions about FERPA guidance, please contact the Office of the Registrar at records@utdallas.edu for the proper student consent forms and further instructions.

Honorlock: Online proctoring tool will be available for fully online courses and for classes with enrolled international students who are not yet in the United States.

UT System Resources for Creating Accessible Course Content: designed to assist faculty with developing course content

Student Resources

Students who have tested positive for COVID-19 or may have been exposed should not attend class in person and should instead follow required disclosure notifications as posted on the university's website (see "What should I do if I become sick?")

COVID-19 Resources

Comets United webpage: Check frequently

FAQ: Check out the FAQs and reach out to your instructor or academic advisor if answers are not included
Student Resources: A variety of resources are available to help students to obtain counseling, health care, and academic support.

Course Information

Course Prefix, Number, Section: MATH 3310.002

Date and Time: MW, 11:30AM - 12:45PM, SCI 2.225

Course Title: THEORETICAL CONCEPTS OF CALCULUS

Term: SPRING 2022

Professor Contact Information

Instructor: DR. MALGORZATA DABKOWSKI

Office: FO 2.604C

Office hours: MTWR 1:00PM - 2:00PM, in office or on eLearning

E-mail: madab@utdallas.edu

Phone: (972) 883 6592

Teaching Assistant Contact Information

Grader: TBA

Office: TBA

Office hours: TBA

Phone: TBA

E-mail: TBA

Course Pre-requisites, Co-requisites, and/or Other Restrictions

A grade of at least a C- in either MATH 2415 or in MATH 2419 or equivalent.

Course description

MATH 3310 Theoretical Concepts of Calculus (3 semester credit hours) is a course designed to help students make a transition from "calculus-style" mathematics into abstract mathematics by learning the language of advanced mathematics and using it to write valid proofs. Topics covered include basic notions in logic and set theory, foundations of mathematical theory behind calculus and more generally, mathematical analysis.

Student Learning Objectives/Outcomes

1. Students will learn the formal language of mathematics, strategies to determine truth value of mathematical statements, and basic proof techniques.
 1. Students will be introduced to basic notions of the theory of sets, for instance, set operations, relations, and functions.
 2. Students will be able to articulate basic definitions and theorems of mathematical analysis, for instance, limits, continuity, and differentiability of real-valued functions.
 3. Students will apply definitions and theorems to verify continuity, differentiability, and integrability of real-valued functions of a real variable.
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Required Textbooks and Materials

Steven R. Lay, *Analysis With an Introduction to Proof*, 5th edition, Pearson Education.

Additional Course Materials Lecture notes and reviews for tests will be posted on eLearning.

Textbooks and some other bookstore materials can be ordered online through Off-Campus Books or the UT Dallas Bookstore. They are also available in stock at both bookstores.

Course Content The course will cover the following chapters from the textbook *Analysis With an Introduction to Proof* by Steven R. Lay.

1. Logic and Proof: logical connectives, quantifiers, techniques of proof.
2. Sets and Functions: set operations, relations, functions, cardinality.
3. The Real Numbers: natural numbers and induction, ordered fields, the completeness axiom, topology of the real numbers, compact sets.
4. Sequences: convergence, limit theorems, monotone sequences and Cauchy sequences.
5. Limits and Continuity: limits of functions, properties of continuous functions, uniform continuity.
6. Differentiation: the derivative, the mean value theorem, L'Hopital's rule, Taylor's theorem.
7. Integration: definition and properties of the Riemann integral, the fundamental theorem of calculus.

Assignments & Academic Calendar

Important Dates

Monday, January 17, Martin Luther King Day

Tuesday, January 18: Classes begin

Wednesday, February 2: Last day to drop a class without a "W"

Monday, March 14 – Sunday, March 20: Spring break

Thursday, March 31: Last day to drop a class with a "WL"

Thursday, May 5: Last Day of Classes (Not including final exams)

Friday, May 6: Reading Days

Saturday, May 7 – Friday, May 13: Final Exams

For all details see: Official Academic Calendar Spring 2022

Exam Dates

Exam I: Friday, March 4, on eLearning

Exam II: Friday, April 22, on eLearning

Final Exam: TBA, on eLearning

Grading Policy

Federal Laws protecting student privacy prevents discussing grades over unsecured email or telephone.

The course grade will be based on the following assignments/tests:

Three exams (Exam I, Exam II, Final Exam): 20% each

Homework assignments: 20%

Quizzes: 15%

Class participation: 5%

Homework Assignments Homework assignments will be posted on eLearning on a bi-weekly basis and they need to be completed independently by every student. Each assignment is due within one week (on Friday) unless otherwise indicated and it will be graded as soon as possible. Students are strongly encouraged to work more problems than these assigned for homework.

Quizzes Quizzes will be given every other week (on Friday) unless otherwise indicated and they need to be completed by the announced deadline. Quizzes will be posted on eLearning. Each quiz needs to be completed within a 24-hour window and it will have a time limit (usually 30 minutes plus 15 minutes for submission).

Class Participation Your class participation score will be determined based on a timely completion of the mandatory *Participation Quizzes* posted after each lecture on eLearning. The quizzes will be posted after every class meeting and they need to be completed within a 48-hour window and will have a time limit of 15 minutes. As these short quizzes are meant to assess the material covered in the corresponding lectures, if you did not attend the class meeting, it is crucial that you read lecture notes and/or the assigned sections from the textbook, and watch the recorded lecture, if it is available, before taking a quiz.

Exams The exams will be posted on eLearning on the dates mentioned above. Each one needs to be completed during a 72-hour window and within the specified time limit (usually 3 hours with submission time included) unless otherwise indicated. Since unsupported answers receive little or no credit, please show all details of your work.

Grade Scale

[98.0, 100] → A+	[93.3, 98.0] → A	[90, 93.3] → A–
[86.6, 90) → B+	[83.3, 86.6) → B	[80, 83.3) → B–
[76.6, 80) → C+	[73.3, 76.6) → C	[70, 73.3) → C–
[66.6, 70) → D+	[63.3, 66.6) → D	[60, 63.3) → D–
[0, 60) → F		

Course & Instructor Policies

Make-up exams and quizzes No make-up exams will be allowed unless exceptional circumstances occur. Examples of such are sickness, special family or job-related situations. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations. If an emergency precludes advance notice, please notify me as soon as possible. If you are ill or injured, please submit a note from a health care professional excusing you from work or school. It is your responsibility to schedule a make-up exam, which can only be given if written evidence of an excused absence is provided in a timely manner.

Late Work No late assignment will be accepted unless extraordinary circumstances occur for the student (see the rules for Make-up exams and quizzes).

Special Assignments The instructor may decide to give an extra assignment occasionally. The due date and the credit for such assignments will be announced separately.

Classroom Citizenship Students are required to be involved in all class activities and need to be respectful for their classmates and the instructor. A disruptive behavior is not serving to a good learning environment. UT Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the Student Code of Conduct. See also Student Conduct and Discipline, Academic Integrity, Copyright Notice on UT Dallas Syllabus Policies and Procedures section of this syllabus.

Class Materials

The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Classroom Conduct Requirements Related to Public Health Measures

UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Fall 2021 semester to the extent allowed by state governance. Texas Governor Greg Abbott's Executive Order GA-38 prohibits us from mandating vaccines and face coverings for UT Dallas employees, students, and members of the public on campus. However, we strongly encourage

all Comets to get vaccinated and wear face coverings as recommended by the CDC. Check the Comets United: Latest Updates webpage for the latest guidance on the University's public health measures. Comets are expected to carry out Student Safety protocols in adherence to the Comet Commitment. Unvaccinated Comets will be expected to complete the Required Daily Health Screening. Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action under the Student Code of Conduct – UTSP5003.

Class Attendance

The University's attendance policy requirement is that individual faculty set their course attendance requirements. Regular and punctual class attendance is expected regardless of modality. Students who fail to attend class regularly are inviting scholastic difficulty. In some courses, instructors may have special attendance requirements; these should be made known to students during the first week of classes. These attendance requirements will not be used as part of grading (see Class Participation below for grading information).

In-person participation records may be used to assist the University or local public health authorities in performing COVID-19 occurrence monitoring. Please note – in-person attendance requires consistently adhering to University requirements, including wearing a face covering and other public safety requirements related to COVID-19, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Participation

Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Recordings

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

Academic Support Resources

The information contained in the following link lists the University’s academic support resources for all students. Please go to Academic Support Resources webpage for more information.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus. Please go to UT Dallas Syllabus Policies webpage for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the instructor.