

MATH 3310: Introduction to Mathematical Reasoning and Proof
Section 003, MWF 11:00–11:50 MATH 110

Course Information:

Instructor: Chris Monico
 Email: c.monico@ttu.edu
 Office: MA-252
 Office Hours: MWF 9:30–10:30, Tues. 11:00–12:00, or by appt.
 Required Text: *Mathematical Proofs: A Transition to Advanced Mathematics*, 3rd Ed.,
 Chartrand, Polimeni, and Zhang.

Course outline/Important Dates:

Prerequisite: MATH 2450.

About the course: This course will teach students how to construct and organize their mathematical reasoning and develop skill for writing mathematical proofs. This is a writing intensive course.

Below is my best approximation of what we will cover and when we will cover it, as well as a list of important dates.

1.1–1.6	5 hours
2.1–2.8	6 hours
3.1–3.4	5 hours
5.1,5.2,5.4	3 hours
6.1,6.2,6.4	3 hours
8.1–8.6	5 hours
10.1–10.4	4 hours
12.1–12.2	3 hours

Labor Day, no class	Mon. 9/1.
Exam 1	Wednesday, 9/24
Exam 2	Wednesday, 10/22.
Last day to drop	Mon. 10/27.
Thanksgiving break	Wed. 11/26– Sun. 11/30.
Last day of classes	Wed. 12/3.
Final Exam	Friday 12/5, 1:30pm–4:00pm.

Attendance: Class attendance is *mandatory*. It is assumed that you will attend, so I will not waste your time by taking attendance. However, keep in mind that it will be decidedly difficult for you to pass this course if you do not attend. If you arrive late to class, enter quietly. If you miss a class, it is your responsibility to find out what you missed (assignments, notes,...); either ask a fellow student or come by my office to find out. If you are absent for an exam, you will be permitted to make it up *if and only if* you are absent for one of the following reasons:

- You are out of town performing duties on behalf of the university (i.e., athletics). Advance notification is required.
- Religious holiday (see below).
- **Severe** illness, documented by a physician.
- Death in the family.
- Other extenuating circumstances, at the instructor’s discretion (I am *not* very generous with this).

Expected Learning Outcomes

- Students are expected to understand the following concepts and use them to solve various problems: Sets, cardinality, subsets, elements, union, intersection, functions (including the meaning of injectivity, surjectivity and bijectivity), equivalence relations/classes, as well as an introduction to modular arithmetic.
- Students are expected to become proficient in *reading and writing proofs*.

Assessment of learning outcomes The expected learning outcomes for the course will be assessed through scheduled exams and homework assignments. Your final grade in this course will be determined by the weighted components and grading scale below.

Grade components		Grade Scale	
Homework:	25%	90–100%	A
Exam 1:	25%	80–89%	B
Exam 2:	25%	65–79%	C
Final Exam:	25%	55–64%	D
		0–54%	F

ADA Accommodation: Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as possible to make necessary arrangements. Students must present appropriate verification from Student Disability Services during the instructor's office hours. Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact Student Disability Services office in 335 West Hall or call 806-742-2405.

Religious Holy Day Observance (OP 34.19)

1. "Religious holy day" means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code §11.20.
2. A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.
3. A student who is excused under Section 2 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

Academic Integrity

I expect all assignments to be completed without assistance from the Internet, except when I explicitly allow it. Looking up a solution online is like asking someone else to exercise for you - there's no value in it whatsoever for you. The point of an exercise is to think about it, struggle with it, and gain problem solving experience. If the only point of a given exercise was simply learn some small fact, I would simply hand you the small fact. You should expect to work hard solving the problems. If you don't enjoy working hard on a math problem, you've chosen the wrong major. That said, you are always *very welcome* to come talk to me. I will be happy to provide hints or suggestions, short of actually solving a problem for you. But if you do go against my wishes and use outside resources to complete an assignment, **you must cite your sources**. I take academic integrity very seriously, and a failure to cite your sources constitutes plagiarism, which may result in a grade of F in the course, or worse, at my discretion. If you use an outside source for assistance, that means there was something hard that you couldn't figure out for yourself, while someone else did figure it out. As such, it constitutes an important part of the process you used to arrive at a solution, and you are obliged to give credit where it's due and not claim it as your own.