MATH 3308: Foundations of Elementary Mathematics I

Sul Ross State University
Spring 2024

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Course Description	MTH 3308 is intended as an introduction to numeration systems, foundations of arithmetic, fractions and decimal numbers, measurement concepts, and problem solving.
TEKS	Information on the Texas Essential Knowledge and Skills can be found on the TEA website: http://www.tea.state.tx.us
Class Time	Monday and Wednesday, 12:30 – 1:45
Class Location	Uvalde B113; online
Required Text	Long, DeTemple, & Millman, *Mathematical Reasoning for Elementary Teachers*, Seventh Edition, ISBN 0321900995
Office Hours	Tuesday / Thursday 2:00 – 3:00 and Monday / Wednesday 10:00 – 2:00; or by appointment; or basically whenever I'm not busy

Course Policies

Attendance Policy

Attendance is mandatory. If you are registered for the online section then you will need to be logged in with your camera turned on for attendance credit. You will be held responsible for all material covered in class or in the reading assignments. If you have to miss a class, it is your responsibility to obtain all notes, assignments, and announcements from someone else in the class. Make-up exams will be given only in the event of an emergency, in which case written justification and/or documentation must be provided and approved.

Communication

I will post course documents, reminders, announcements, and assignments on the Blackboard system. You will also submit homework on Blackboard. I may also occasionally send announcements via e-mail. You should make sure you know how to access and use these tools. You are welcome to e-mail, telephone, or text me. However you chose to contact me, please make sure to state your name at the beginning of any message.

You are welcome to stop by my office if you wish to speak about the content or your progress in the course. Sometimes meetings come up, so it's best to contact me ahead of time if you intend to travel to Uvalde to see me in person.

I am here to help you! Ask questions in class, call me, e-mail me, text me, or come to my office. If you don't communicate with me, then I can't help you.

Grading Policy

Your grades will be weighted as follows:

Participation	10%
Midterm Exam	35%
Final Exam	55%

A student who averages at least 90% will receive an A; at least 80% will receive at least a B; at least 70% will receive at least a C; at least 60% will receive at least a D.

Participation

Your participation grade will be assigned depending on your class attendance and participation in class activities. Simply put, if you always come to class, seem like you're trying to pay attention and take notes, and take part in class activities, then you will get full credit.

Homework

Homework will be assigned for each section that we cover in the text. Although the homework will not be collected and graded, you should regard it as the most essential component of the course. It is very important that you complete each homework assignment before the next class period. This will allow you to make the most of our time together. If you have a question, ask about it. If you don't understand the homework, you are not ready to take the exam.

In order to achieve success in this course, you must work all the homework assignments in a timely manner! The amount of work for any college class is generally calculated as 3 hours of outside work for each hour in class. **That means you should expect to spend as much as 9 hours each week on outside work in this course.**

We will always discuss the homework in class. You should come to class prepared: make sure to have your textbook and suitable writing materials with you.

Exams

There will be one midterm exam. Its tentative date is Wednesday, March 6. This is subject to change. You will be notified of a change at least one week in advance. Make-up exams will be given only in the event of an emergency, in which case written justification and/or documentation must be provided and approved.

The comprehensive final exam will take place at the time scheduled by the university, during the final exam period at the end of the semester. Official time and date to be announced once the university publishes the final exam schedule.

Subject Outline

Below is a tentative outline of the subjects we will cover in this course. Next to each topic section is the corresponding section from the textbook.

I. Sets and whole numbers

1. Sets (§2.1): *basic concepts – notation – set operations and relations*
2. The whole numbers (§2.2): *the history and psychology of counting – one-to-one correspondence – counting and cardinality – the less-than relation*
3. Addition and subtraction of whole numbers (§2.3): *addition of whole numbers – models for addition – properties of addition – subtraction of whole numbers – models for subtraction*
4. Multiplication and division of whole numbers (§2.4): *multiplication of whole numbers – models for multiplication – properties of multiplication – division of whole numbers – models for division – division with remainders*

II. Divisibility of whole numbers

1. Divisibility (§4.1): *divisors and multiples – odd and even – prime numbers – factor trees – prime power representations – applications – two questions about primes – the Sieve of Eratosthenes*
2. Greatest common divisors (§4.3): *the greatest common divisor – the listing method – the prime factorization method – the Euclidean algorithm – the least common multiple – methods*

III. Numeration and computation

1. Numeration systems (§3.1): *primitive systems – the Egyptian system – the Roman system – the Babylonian system – the Mayan system – the Indo-Arabic system*
2. Nondecimal positional systems (§3.4): *positional systems and manipulatives – converting between systems*
3. Algorithms for adding and subtracting whole numbers (§3.2): *addition with representations and manipulatives – subtraction with representations and manipulatives*
4. Algorithms for multiplying and dividing whole numbers (§3.3): *multiplication with representations and manipulatives – the lattice method – multiplication in nondecimal systems – division with representations and manipulatives*

IV. Integers

1. Representations of integers (§5.1): *the integers – what we want in a representation – colored counters – mail-time (money) stories – number-line representations*
2. Addition and subtraction of integers (§5.2): *addition with representations and manipulatives – properties of addition – subtraction with representations and manipulatives – ordering the integers*
3. Multiplication and division of integers (§5.3): *multiplication with representations and manipulatives – properties of multiplication – division of integers*

V. Fractions and rational numbers

1. Fractions (§6.1): *basic concepts – representations and manipulatives – equivalent fractions – fractions in simplest form – common denominators – ordering*
2. Addition and subtraction of fractions (§6.2): *addition of fractions – addition with manipulatives – proper fractions and mixed numbers – subtraction of fractions – subtraction with manipulatives*
3. Multiplication and division of fractions (§6.3): *multiplication of fractions – multiplication as an operator – the area model – division of fractions – division with pictures – the invert-and-multiply rule*
4. Rational numbers (§§6.1,4): *the rational number system – properties of arithmetic – the density property – applications*

Schedule

This schedule is tentative only. The unit numbers refer to the above outline.

Unit I	January 17 – February 14
Unit II	February 14 – March 6
Midterm Exam	**March 6**
Unit III	March 18 – April 3
Unit IV	April 3 – 10
Unit V	April 10 – May 1
Final Exam	**May X**

University Statements

Distance Education Statement. *Students enrolled in distance education courses have equal access to the university's academic support services, such as library resources, online databases, and instructional technology support. For more information about accessing these resources, visit the SRSU website.*

Students should correspond using Sul Ross email accounts and submit online assignments through Blackboard, which requires a secure login. Students enrolled in distance education courses at Sul Ross are expected to adhere to all policies pertaining to academic honesty and appropriate student conduct, as described in the student handbook. Students in web-based courses must maintain appropriate equipment and software, according to the needs and requirements of the course, as outlined on the SRSU website. Directions for filing a student complaint are located in the student handbook.

SRSU Accessibility Services. *Sul Ross State University (SRSU) is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is SRSU policy to provide*

reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class. Students seeking accessibility/accommodations services must contact Mrs. Mary Schwartze Grisham, LPC, SRSU's Accessibility Services Director at 432-837-8203 or email mschwartze@sulross.edu. Our office is located on the first floor of Ferguson Hall, room 112, and our mailing address is P.O. Box C122, Sul Ross State University, Alpine. Texas, 79832.

Counseling Services. *Sul Ross has partnered with TimelyCare where all SR students will have access to nine free counseling sessions. You can learn more about this 24/7/356 support by visiting Timelycare/SRSU. The SR Counseling and Accessibility Services office will continue to offer in-person counseling in Ferguson Hall room 112 (Alpine campus), and telehealth Zoom sessions for remote students and RGC students.*

Libraries. *The Bryan Wildenthal Memorial Library in Alpine offers FREE resources and services to the entire SRSU community. Access and borrow books, articles, and more by visiting the library's website, library.sulross.edu. Off-campus access requires logging in with your LobolD and password. Librarians are a tremendous resource for your coursework and can be reached in person, by email (srsulibrary@sulross.edu), or by phone (432-837-8123).*

No matter where you are based, public libraries and many academic and special libraries welcome the general public into their spaces for study. SRSU TexShare Cardholders can access additional services and resources at various libraries across Texas. Learn more about the TexShare program by visiting library.sulross.edu/find-and-borrow/texshare or ask a librarian by emailing srsulibrary@sulross.edu.

Mike Fernandez, SRSU Librarian, is based in Eagle Pass (Building D-129) to offer specialized library services to students, faculty, and staff. Utilize free services such as InterLibrary Loan (ILL) and ScanIt to get materials delivered to you at home or via email.