

Math 3309

Survey of Basic Math Theory II

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Office Hours
M: 12:30-2:00 PM
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F: 12:30-4:00 PM

Catalog description: Geometric concepts, probability, statistics, estimation, problem solving, and other related topics.

Pre-requisites, co-requisites, and other requirements: Math 3308

Text: Mathematical Reasoning for Elementary Teachers, 7th Edition, Long, DeTemple and Millman.

Readings and Lecture Topics will include the following

CHAPTER 6 – FRACTIONS AND RATIONAL NUMBERS

- 6.1 The Basic Concepts of Fractions and Rational Numbers
- 6.2 Addition and Subtraction of Fractions
- 6.3 Multiplication and Division of Fractions
- 6.4 The Rational Number System

CHAPTER 7 – DECIMALS, REAL NUMBERS, AND PROPORTIONAL REASONING

- 7.1 Decimals and Real Numbers
- 7.2 Computation with Decimals
- 7.3 Proportional Reasoning
- 7.4 Percent

CHAPTER 8 –ALGEBRAIC REASONING, GRAPHING, AND CONNECTIONS WITH GEOMETRY

- 8.1 Variables, Algebraic Expressions, and Functions
- 8.2 Graphing Lines, Points, and Elementary Functions
- 8.3 Connections with Geometry

CHAPTER 9 – GEOMETRIC FIGURES

- 9.1 Figures in the Plane
- 9.2 Curves and Polygons in the Plane

CHAPTER 10 – MEASUREMENT: LENGTH, AREA, AND VOLUME

- 10.1 The Measurement Process
- 10.2 Area and Perimeter
- 10.3 The Pythagorean Theorem
- 10.4 Volume

CHAPTER 11 – TRANSFORMATIONS AND SYMMETRIES

- 11.1 Rigid Motions and Similarity Transformations
- 11.2 Patterns and Symmetry

CHAPTER 12 – CONGRUENCE AND SIMILARITY

- 12.1 Congruent Triangles
- 12.3 Similar Triangles

CHAPTER 13 – STATISTICS: THE INTERPRETATION OF DATA

- 13.1 Organizing and Representing Data
- 13.2 Measuring the Center and Variation of Data
- 13.3 Statistical Inference

CHAPTER 14 – PROBABILITY

- 14.1 The Basics of Probability

Course requirements and policies:

A. Grade Requirements

Grading Procedure:	4 Tests (lowest score dropped) Homework Final Exam (Comprehensive)	60% 20% 20%
Test Schedule	Test 1 (Chapters 6 and 7) Test 2 (Chapters 8 and 9) Test 3 (Chapters 10, 11, and 12) Test 4 (Chapters 13 and 14) STAAR Test for Extra Credit Final Exam	February 18 March 11 April 10 April 29 May 8 May 15
Make-up Policy:	Makeup exams will be granted only in cases of medical and legal obligations. Student must provide a medical or legal document. A student may request to take a test early. It is at the discretion of the instructor whether to grant the request. Otherwise, a missed test will be dropped as your lowest test grade.	
Extra Credit	An optional extra credit exam made up STAAR math questions for grades 3, 4, 5, and 6 will be administered on November 28. If you choose to take the test, the score will replace your second lowest test grade.	
Homework	The homework grade is based on the number of points earned on homework worksheets. A worksheet for each section covered in class will be posted on Blackboard. Keep your worksheets organized and in a folder. Turn in your homework folder with each test.	
Section Registration Policy	Students must take each exam at the site in which they are registered.	
Grade Determination:	<u>Final Average</u>	<u>Letter Grade</u>
	90-100	A
	80-89	B
	70-79	C
	60-69	D
	0-59	F

B. Policies:

Technology Requirement: Calculators can be used in class and on all homework assignments. But calculators will not be allowed on the tests or the final exam.

ADA Statement: “As per Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, if accommodation is needed notify me as soon as possible. Sul Ross State University is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is the student’s responsibility to initiate a request for accessibility services. Students seeking accessibility services must contact Mary Schwartz, M. Ed., L.P.C., in Counseling and Accessibility Services, Ferguson Hall, Room 112. The mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas 79832. Telephone: 432-837-8691. E-mail: mschwartz@sulross.edu .

Academic Dishonesty: Students may be subject to disciplinary proceedings resulting in an academic penalty or disciplinary penalty for academic dishonesty. Academic Dishonesty includes, but is not limited to, cheating on a test, plagiarism and collusion.

Electronic Devices: Students are required to silence all electronic devices (cellular phones, etc.) when in classrooms, laboratories and the library.

Attendance: A student absent for any reason is responsible for all work missed.

PowerPoint Lecture Notes: PowerPoint Lecture notes will be made available through Blackboard. A copy of the syllabus is also available via Blackboard.

C. Student Learning Outcomes

1. Student Learning Outcomes- See Department of Education outcomes- The preservice teacher understands how students learn mathematical skills and uses that knowledge to plan, organize and implement instruction and assess learning. The preservice teacher understands concepts related to numbers, operations and algorithms and the properties of numbers. The preservice teacher understands concepts related to patterns, relations, functions and algebraic reasoning. The preservice teacher understands concepts and principles of geometry and measurement. The preservice teacher understands concepts related to probability and statistics and their applications. The preservice teacher understands mathematical processes and knows how to reason mathematically, solve mathematical problems and make mathematical connections within and outside of mathematics.
2. Course Competencies—See TExES Competencies for Math EC-6 on the following pages