

Sul Ross State University
Course Syllabus
MATH 1314 : College Algebra
Fall 2024

Instructor: Mr. Santos

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Office Hours: 3:05-4:20

Time and Place of Class Meetings: EPHS A112

Prerequisites: Completion of MATH 0314 (A,B, or C) or passing TSI or Concurrent Enrollment

Description of Course Content: Quadratic and higher order polynomial equations and inequalities solved algebraically, graphically and numerically; graphs and operations on relations and functions; real and complex zeros of polynomials and rational functions; exponential and logarithmic functions; systems of linear equations; matrices.

Required Textbooks: Algebra and Trigonometry, 1st edition. Hawkes. You will need access to the online textbook and homework. You should be able to buy an access code through our bookstore or the link for the instructions is under the Start Here link on Blackboard.

Other Equipment Needed: Paper and pencils. Computer access.

Mathematics Program Learning Objectives: The graduating student should be able to:

The student will be able to demonstrate content knowledge of basic mathematical principles.

- The student will be proficient in logic, able to negate statements, provide counterexamples to false statements, and determine the validity of arguments.

The student will be able to communicate mathematical content clearly and with valid reasoning.

Student Learning Outcomes:

- Students will develop critical thinking skills to include creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.

- Students will develop communication skills to include effective development, interpretation, and expression of ideas

through written, oral, and visual communication.

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Marketable Skills-Mathematics BS:

- Students Demonstrate Logical and Analytical Skills.
- Students Demonstrate Problem-Solving Using Analytic and Algebraic Methods.
- Students Use Technology in Problem-Solving and Presentation.
- Students Use Communication and Pedagogical Skills.

EC-6 Teaching Competencies

Competency 013 (Mathematics Instruction) The teacher understands how students learn mathematical skills and uses that knowledge to plan, organize, and implement instruction and assess learning.

Competency 014 (Number Concepts and Operation) The teacher understands concepts related to numbers, operations and algorithms and the properties of numbers.

Competency 015 (Patterns and Algebra) The teacher understands concepts related to patterns, relations, functions and algebraic reasoning.

Competency 016 (Geometry and Measurement) The teacher understands concepts and principles of geometry and measurement.

Competency 017 (Probability and Statistics) The teacher understands concepts related to probability and statistics and their applications.

Competency 018 (Mathematical Processes) The teacher understands mathematical processes and knows how to reason mathematically, solve mathematical problems and make mathematical connections within and outside of mathematics.

Course Objectives:

- The student will be able to solve linear, quadratic, rational and radical equations and inequalities using various methods.
- The student will be able to graph functions by plotting points and performing transformations on certain parent

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functions.

- The student will be able to graph polynomial functions by finding roots using synthetic or long division and distinguish the end behavior of graphs.
- The student will be able to model growth and decay problems using exponential functions.
- The student will be able to solve systems of equations in two and three variables.

Grading Scale: 90-100 A, 80-89 B, 70-79 C, 60-69 D, 59-Below F

Grading Policy: The grade weighting will be as follows:

Homework 10%

Quizzes: 20%

Exams: 30%

Projects 15%

Final Exam: 25%

Homework: Homework will be assigned daily through the online homework system. Homework is graded on mastery. All homework along with due dates will be posted on the Hawkes Learning System. You can attempt a homework assignment until you complete it, but you will be forced to go back to the practice mode if you miss too many problems. There will be a graduated point exemption for late assignments, but if unforeseen circumstances come up, please talk to me.

Quizzes: You will have quizzes over material covered. These quizzes will be graded out of 100 points and are designed to only take 10-15 minutes. These could also contain questions concerning the material you have to read to prepare for class.

Exams: No make-up exams will be given. If an exam is missed with a valid excuse, the grade on the final can replace this exam. Any exams missed beyond one will be an automatic zero. Exams will be closed notes, closed book, and no calculator will be allowed unless otherwise stated by your instructor. Once you start an exam, you have to finish it.

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General Policies: You are expected to bring all necessary materials and take notes and participate. You are expected to turn-off and not to access any electronic, non-task oriented device such as cell/smart phones/ipads and i-phones unless your textbook is on such a device. Again, a cell phone cannot be used as a calculator. Devices for recording the lecture are permitted; either audio or video. Any personal business must be conducted during office hours or by appointment. I will only discuss grades and attendance **issues** in my office or a zoom meeting during office hours. Classroom time is for the entire class.

Attendance Policy: Students are expected to attend every class. You are expected to check your Sul Ross email account. Absences due to school functions should be discussed with your instructor ahead of time.

It is policy of the university to drop a student with a grade of "F" if 9 hours or more of class are missed. This would be 3 weeks of missing completing or at least attempting assignments.

Americans With Disabilities Act: SRSU Disability Services. Sul Ross State University (SRSU) is committed to equal access in compliance with 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. Alpine students seeking accessibility/accommodations services must contact Mary Schwartze Grisham, M.Ed., LPC, SRSU's Accessibility Services Coordinator at 432-837-8203 (please leave a message and we'll get back to you as soon as we can during working hours), or email mschwartze@sulross.edu Our office is located on the first floor of Ferguson Hall (Suite 112), and our mailing address is P.O. Box C-122, SUI Ross State University, Alpine. Texas, 79832.

Counseling: 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](https://www.timelycare.com/sulross). 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.

Library Services: 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 LoboID 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.

New for Fall 2023: 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.

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Distance Education Statement:

Students enrolled in distance education courses have equal access to the university's academic support services, such as Smarthinking, 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 secure login information to verify students' identities and to protect students' information. The procedures for filing a student complaint are included in the student handbook. 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.

Academic Integrity: Students in this class are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. A scholar is expected to be punctual, prepared, and focused; meaningful and pertinent participation is appreciated. Examples of academic dishonesty include but are not limited to: Turning in work as original that was used in whole or part for another course and/or professor; turning in another person's work as one's own; copying from professional works or internet sites without citation; collaborating on a course assignment, examination, or quiz when collaboration is forbidden.

Classroom Climate of Respect: Importantly, this class will foster free expression, critical investigation, and the open discussion of ideas. This means that all of us must help create and sustain an atmosphere of tolerance, civility, and respect for the viewpoints of others. Similarly, we must all learn how to probe, oppose and disagree without resorting to tactics of intimidation, harassment, or personal attack. No one is entitled to harass, belittle, or discriminate against another on the basis of race, religion, ethnicity, age, gender, national origin, or sexual preference. Still, we will not be silenced by the difficulty of fruitfully discussing politically sensitive issues.

Supportive Statement: I am to create a learning environment for my students that supports various perspectives and experiences. I understand that the recent pandemic, economic disparity, and health concerns, or even unexpected life events may impact the conditions necessary for you to succeed. My commitment is to be there for you and help you meet the learning objectives of this course. I do this to demonstrate my commitment to you and to the mission of Sul Ross State University to create a supportive environment and care for the whole student as part of the Sul Ross Familia. If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. I want to be a resource for you.

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August 12	First Day of Classes
August 29	Last Day for Late Registration and Schedule Changes
September 11	12th Class Day, Last day to drop a course without creating an academic record
November 8 Grade	Last Day to Withdrawal from University or Drop Classes with a of "W" (by 4 pm)
November 25-29	Thanksgiving Break
December 4	Last Day of Classes before finals
December 5	Dead Day
December 6, 9-11	Final Exams

Week	Topics	Assignments
Week 1 Aug. 12-16	Introduction, Real Numbers, Algebraic Expressions, Exponents (Sections 1.1-1.3)	Quizzes 1.1-1.2; 1.3-1.4
Week 2 Aug. 19-23	Factoring Rational Expression, Complex Numbers (Sections 1.6-1.8)	Quizzes 1.5-1.6; 1.7-1.8 Chapter 1 Exam
Week 3 Aug 26-30	Linear Equations & Inequality, Quadratic & Polynomial Equations in 1 variable (Sections 2.1-2.4)	Quizzes 2.1-2.6; 2.3-2.4
Week 4 Sept 2-6	Rational & Radical Equations (Sections 2.5-2.6)	Quizzes 2.5-2.6 Chapter 2 Exam
Week 5 Sept 9-13	Coordinate System, Circles, Linear Eqtn in 2 variables, Slope, Forms of Linear Eqtn, Parallel & Perpendicular Lines (Sections 3.1-3.5)	Quizzes 3.1-3.2; 3.3-3.4
Week 6 Sept 16-20	Linear Inequalities in 2 Variables, Linear & Quadratic Functions (Section 3.6-Section 4.3)	Quizzes 3.5-3.6; 4.1-4.2 Chapter 3 Exam
Week 7 Sept 23-27	Other Common Functions, Variation, Mathematical Models (Sections 4.4-4.6)	Quizzes 4.3-4.4; 4.5-4.6

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Week 8 Sept 30- Oct 4	Transformations and Properties of Functions (Sections 5.1-5.2)	Quiz 5.1 Chapter 4 Exam
Week 9 Oct 7-11	Combining Functions, Inverses of Functions, Polynomial Functions (Sections 5.3-5.4, Section 6.1)	Quiz 5.2-5.4
Week 10 Oct 14-18	Polynomial Inequalities, Polynomial Division, Zeros of Polynomial Func, Polynomial Thm of Algebra (Sections 6.1-6.4)	Quizzes 6.1; 6.2-6.4 Chapter 5 Exam
Week 11 Oct 21-25	Rational Function, Rational Inequalities (Section 6.5)	Quiz 6.5 Chapter 6 Exam
Week 12 Oct 28- Nov 1	Exponential Func: Graphs and Models, Logarithmic Functions and their Graphs (sections 7.1-7.3)	Quiz 7.1-7.2
Week 13 Nov 4-8	Log Properties & Models, Expo & Log Eqtns (Sections 7.3-7.5)	Quizzes 7.3-7.4; 7.5 Chapter 7 Exam
Week 14 Nov 11-15	System of Linear Equations, Matrix Notation & Determinants (Sections 12.1-12.3)	Quiz 12.1-12.4
Week 15 Nov 18-22	Basics Matrix Operations, Inverses of Matrices, Particle Fraction Decomposition (Sections 12.4-12.6)	Quizzes 12.3-12.4; 12.5-12.6
Week 16 Dec 2-6	System of Linear Inequalities, System of nonlinear Equations (Sections 12.7-12.8)	Quizzes 12.7-12.8 Chapter 12 Exam
Week 17	Final Exam Review	Final Exam (comprehensive)
Week 18	System of Nonlinear inequalities (Section 12.8)	