

South Plains College
Course Syllabus: College Algebra (MATH 1314)
Fall 2022 – Spring 2023

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Department: Mathematics, Engineering, and Computer Science

Discipline: Mathematics

Course Number: MATH 1314

Course Title: College Algebra

Course Description: In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included.

Prerequisite: Minimum score of 350 on the TSIA1, minimum score of 950 on the TSIA2, a diagnostic score of 6 on the TSIA2, TSI-exempt status, a successful completion with a grade of 'C' or better in MATH 0320 (Intermediate Algebra), or successful completion of NCBM 0114.

Textbook: To reduce cost for the student, we will utilize a free online textbook for reference and homework problems. The textbook we will use is titled *College Algebra* from OpenStax, Print ISBN 1938168380, Digital ISBN 1947172123, www.openstax.org/details/college-algebra . The student will need to download this textbook to their assigned ChromeBook, or save it as a bookmark in the web browser

Supplies: Each student will need:

- Two spiral notebooks (college rule or wide rule, whichever you prefer)
- Pen or pencil to take notes with
- **One folder to keep graded assignments and tests in**

Google Classroom: Each student will be given access to the Google Classroom for this section where the instructor will upload lecture notes and any other helpful resources throughout the year. Because students will be enrolled in this class at SPC in the Fall semester, students will have access to Blackboard, but we will not use Blackboard for this class. Google Classroom will be used for the entire year.

Technology: According to South Plains College Math Department's rules, graphing calculators will not be allowed in this class. However, if the student would like to use a four-function calculator, those will be allowed in class and on exams. The instructor will check all calculators before exams.

This course partially satisfies a Core Curriculum Requirement: Mathematics Foundational Component Area (020)

Core Curriculum Objectives addressed:

- **Communications skills**—to include effective written, oral and visual communication
- **Critical thinking skills**—to include creative thinking, innovation, inquiry, and analysis,

- evaluation and synthesis of information
- **Empirical and quantitative competency skills**—to manipulate and analyze numerical data or observable facts resulting in informed conclusion

Student Learning Outcomes: Upon completion of this course and receiving a passing grade, the student will be able to:

1. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions, and inverses.
2. Recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations.
3. Apply graphing techniques.
4. Evaluate all roots of higher degree polynomial and rational functions.
5. Recognize, solve and apply systems of linear equations using matrices.

Grades: Students taking this course at Levelland High School will have two final grades for the course: one grade that goes on the LHS transcript and will affect the high school GPA, and one that goes on the SPC transcript.

Grades for **LHS** will be recorded in Skyward and will be weighted as follows:

- Daily bell ringers - weight of 1
- Weekly Homework - weight of 2
- 3 Exams - weight of 5
- 1 Final exam - weight of 7

Grades for the **SPC** transcript will be recorded in Blackboard and calculated as follows:

- Homework/Bellringers = 25%
- Exam 1 = 15%
- Exam 2 = 15%
- Exam 3 = 15%
- Final Exam (comprehensive) = 30%.

Your final average in the course will determine the letter grade posted on your transcript. This grade is determined by the following scale:

A (90-100%), B (80-89%), C (70-79%), D (60-69%), F (0-59%).

Tentative Course Schedule:

Spring semester - College Algebra textbook

Date	Topics
Dec 5-9	2.1 Distance, Midpoint, and Circles
Dec 12-16	3.3 Behavior of Graphs
19: Jan 2-6	(No school Monday - student holiday) 3.5 Transformations of Graphs 3.4 Composition of Functions
20: Jan 9-13	3.7 Inverse Functions 5.1 Quadratic Functions
21: Jan 16-20	(No school Monday - student holiday) 5.3 Polynomial Graphs 5.4 Dividing Polynomials

22: Jan 23-27	5.5 Zeros of Polynomials
23: Jan 30 - Feb 3	5.6 Rational Functions and Graphs 5.7 Polynomials and Rational Inequalities
24: Feb 6-10	Review for Exam 1 (5) Exam 1 6.1 Exponential Functions
25: Feb 13-17	6.2 Logarithmic Functions 6.3 Properties of Logarithms (No school Friday - student holiday)
26: Feb 20-24	(No school Monday) 6.4 Exponential and Log Equations
27: Feb 27 - Mar 3	6.5 Modeling Exponential Growth and Decay Review for Exam 2 (6) Exam 2
28: Mar 6-10	7.1 Systems of Equations 7.2 Systems of Equations in Three Variables
29: Mar 13-17	No school - Spring Break
30: Mar 20-24	7.3 Systems of Nonlinear Equations and Inequalities 7.4 Partial Fractions
31: Mar 27-31	7.4b Linear Programming 7.5 Matrices and Matrix Operations
32: Apr 3-7	7.6 Solving Systems with Gaussian Elimination 7.7 Solving Systems with Inverses (No school Friday - student holiday)
33: Apr 10-14	(No school Monday) 7.8 Solving Systems with Cramer's Rule Review for Exam 3 (7) Exam 3
34: Apr 17-21	8.1 The Ellipse 8.2 The Hyperbola
35: Apr 24-28	8.3 The Parabola 8.4 Rotation of Axes
36: May 1-5	8.5 Conic Sections in Polar Coordinates Review for Final Exam
37: May 8-12	Review for Final Exam Final Exam
39: May 15-19	Grades due May 15

***Note that this syllabus is subject to change. Any changes made by the instructor will be reflected in the syllabus uploaded in Google Classroom.**

Diversity Statement: In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

Disability Statement: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

Nondiscrimination Policy: South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

Title IX Pregnancy Accommodations Statement: If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To activate accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact the Director of Health and Wellness at 806-716-2362 or email cgilster@southplainscollege.edu for assistance.