

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

**Instructor:** Danae Burton  
**Room:** 105  
**Email:** danaeburton@levellandisd.net

**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](http://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:** Assignments will count for 20% of the final grade, while exams count for 80% of the final grade. Expect 23 assignments and 4 scheduled exams throughout the course. 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%).

- Assignments/Bellringers (homework and daily bellringers) = 25%
- Exam 1 (covering Assignments 1-6) = 15%
- Exam 2 (covering Assignments 7-11) = 15%
- Exam 3 (covering Assignments 12-17) = 15%
- Final Exam (comprehensive) = 30%.

**Tentative Course Schedule:**

Week	Topics	Homework
1: Aug 17-19	Introduction to class Begin review topics	
2: Aug 22-26	Preliminary topics (1.1 - 1.6)	1.1-1.2, 1.3-1.4, 1.5-1.6
3: Aug 29 - Sep 2	Graphs and Graphing Utilities (2.1) Linear Equations and Rational Equations (2.2) Model and Applications (2.3)	2.1 (1), 2.2, 2.3
4: Sep 5-9	<b>(No school Monday)</b> Complex Numbers (2.4) Quadratic Equations (2.5)	2.4, 2.5
5: Sep 12-16	Other Types of Equations (2.6) Linear Inequalities and Absolute Value Inequalities (2.7) Functions and Their Graphs (3.1-3.2)	2.6, 2.7, 3.1-3.2
6: Sep 19-23	Linear Functions and Slope (4.1) Transformations of Functions (3.5) Begin Review for Exam 1	4.1, 3.5

7: Sep 26-30	<b>(No school Monday - student holiday)</b> Exam 1 Combinations of Functions; Composite Functions (3.4) Inverse Functions (3.7)	3.4, 3.7
8: Oct 3-7	Distance and Midpoint Formulas; Circles (2.1) Quadratic Functions (5.1) Polynomial Functions and Their Graph (5.2-5.3)	2.1 (2), 5.1, 5.2-5.3
9: Oct 10-14	Dividing Polynomials; Remainder and Factor Theorems (5.4) Zeros of Polynomial Functions (5.5) <b>(No school Friday - Fall break)</b>	5.4, 5.5
10: Oct 17-21	<b>(No school Monday - Fall break)</b> Rational Functions and Their Graphs (5.6) Polynomial and Rational Inequalities (supplemental - not in book)	5.6, Inequality homework
11: Oct 24-28	Exponential Functions (6.1-6.2) Logarithmic Functions (6.3-6.4) Review for Exam 2	6.1-6.2, 6.3-6.4
12: Oct 31 - Nov 4	<b>(No school Monday - student holiday)</b> Exam 2 Properties of Logarithms (6.5) Exponential and Logarithmic Equations (6.6)	6.5, 6.6
13: Nov 7-11	Exponential Growth and Decay; modeling Data (6.7-6.8) Systems of Linear Equations in Two Variables (7.1) Systems of Linear Equations in Three Variables (7.2)	6.7-6.8, 7.1, 7.2
14: Nov 14-18	Systems of Nonlinear Equations in Two Variables (7.3) Systems of Inequalities (7.3) Partial Fractions (7.4)	7.3 (1), 7.3 (2), 7.4
15: Nov 21-25	No school - Thanksgiving break	
16: Nov 28 - Dec 2	<b>(No school Monday - student holiday)</b> Matrices and Matrix Operations (7.5) Solving Systems with Gaussian Elimination (7.6)	7.5, 7.6
17: Dec 5-9	Solving Systems with Cramer's Rule (7.8) The Binomial Theorem (9.6) Begin Review for Final Exam	7.8, 9.6
18: Dec 12-16	Review for Final Exam Final Exam	

**\*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](mailto:cgilster@southplainscollege.edu) for assistance.