

South Plains College
Common Course Syllabus: MATH 1314
Revised August 2023

Department: Mathematics, Engineering, and Computer Science

Discipline: Mathematics

Course Number: MATH 1314

Course Title: Year-Long College Algebra

Available Formats: conventional (on campus at Springlake-Earth High School)

Campuses: Springlake-Earth High School Dual Credit

Instructor: Gwen Parish

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, or successful completion of NCBM-0114.

Credit: 3 (**Lecture:** 3, **Lab:** 1)

Textbook: *College Algebra*, Blitzer, 2014, 6th Edition, Pearson Education.

SEISD owns this textbook. You will check it out from the bookroom instead of purchasing your own copy.

Supplies: 3" binder, 12 dividers, TI-30XIIS calculator (see Mrs. Parish), notebook paper, pens, pencils, highlighters

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 conclusions.

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.

Student Learning Outcomes Assessment: A set of pre- and post-test questions will be used to determine the extent of improvement that the students have gained during the semester.

Course Evaluation: There will be departmental final exam questions given by all instructors.

Attendance/Student Engagement Policy: Attendance and engagement are the most critical activities for success in this course. The instructor maintains records of the student's attendance and submission of assignments throughout the semester. The student is expected to attend at least eighty percent (80%) of the **total** class meetings **and** submit at least eighty percent (80%) of the **total** class assignments to have the best chance of success. If the student fails to meet these minimum requirements, the instructor may remove the student from the class with an X, upon their discretion, to help the student from harming their GPA. If the student cannot receive an X, the instructor will assign an F.

Plagiarism violations include, but are not limited to, the following:

1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:

1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
4. Entering an office or building to obtain an unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another's work during an examination or on a homework assignment;
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect from the student and the instructor. Neither the instructor nor the student should be subject to others' rude, disruptive, intimidating, aggressive, or demeaning behavior. Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.

For information regarding official South Plains College statements about intellectual exchange, disabilities, non-discrimination, Title IX Pregnancy Accommodations, CARE Team, and

Campus Concealed Carry, please visit
<https://www.southplainscollege.edu/syllabusstatements/>.

South Plains College policies, return to campus plan, and protocols regarding COVID-19 can be found here: <https://www.southplainscollege.edu/emergency/covid19-faq.php>.

SPC Bookstore Price Match Guarantee Policy: If you find a lower price on a textbook, the South Plains College bookstore will match that price. The difference will be given to the student on a bookstore gift certificate! The gift certificate can be spent on anything in the store.

If students have already purchased textbooks and then find a better price later, the South Plains College bookstore will price match through the first week of the semester. The student must have a copy of the receipt and the book must be in stock at the competition at the time of the price match.

The South Plains College bookstore will happily price match BN.com & books on Amazon noted as *ships from and sold by Amazon.com*. Online marketplaces such as *Other Sellers* on Amazon, Amazon's Warehouse Deals, *fulfilled by Amazon*, BN.com Marketplace, and peer-to-peer pricing are not eligible. They will price match the exact textbook, in the same edition and format, including all accompanying materials, like workbooks and CDs.

A textbook is only eligible for price match if it is in stock on a competitor's website at time of the price match request. Additional membership discounts and offers cannot be applied to the student's refund.

Price matching is only available on in-store purchases. Digital books, access codes sold via publisher sites, rentals and special orders are not eligible. Only one price match per title per customer is allowed.

Note: The instructor reserves the right to modify the course syllabus and policies, as well as notify students of any changes, at any point during the semester.

Grades

- The grade for this course will be derived from grades from the Fall 2023 semester and the Spring 2024 semester.
- Students will only receive a course grade from SPC for the Spring 2024 semester.
- Grades from the Fall 2023 semester will be used to compute the SPC Spring 2024 grade. Consequently, your high school transcript grade and your college transcript grade may be different.

Course Schedule

Fall Semester			
Week #	No Calculator Allowed or Non-Graphing Calculator Allowed (Recommended TI-30XIIS)	Topics	Notes and Assignment Number
		<p>These are split up based off of three total class hours per week. This could be:</p> <p>I. Four 45-minute classes per week.</p> <p>II. Two 90-minute classes per week.</p> <p><i>**Note: Students will need to study and work on assignments outside of scheduled class time. **</i></p>	
1	No Calculator	Course Intro and Expectations Operations with Integers	1.1
	No Calculator	Intro to Fractions; Multiplying and Dividing Fractions	1.2
	No Calculator	Adding and Subtracting Fractions; Mixed Numbers	1.3
	No Calculator	Exponents and Order of Operations	1.4
2	No Calculator	Evaluating Absolute Value; Mixed Practice	1.5
	No Calculator	Evaluating Expressions	1.6
	No Calculator	Solving One-Step and Two Step Linear Equations (include single fraction)	1.7
	No Calculator	Solving Multi-Step Linear Equations	1.8
3	No Calculator	Solving Formulas; Solving Abs Value Equations	1.9
	No Calculator	Solving Linear Inequalities	1.10
	No Calculator	Solving Compound Inequalities	1.11
	No Calculator	Solving Absolute Value Inequalities	1.12
4	No Calculator	Unit 1 Review	U1 Review
	No Calculator	Unit 1 Review Continued	U1 Review
	No Calculator	Unit 1 Exam	U1 Exam
	Non-Graphing Calculator	Rules of Exponents (all rules of exp)	2.1

5	Non-Graphing Calculator	More with Rules of Exponents	2.2
	Non-Graphing Calculator	Intro to Polynomials; Add, Subtract, Multiply Polynomials (including 2 variables)	2.3
	Non-Graphing Calculator	Intro to Factoring (GCF, Factor by Grouping)	2.4
	Non-Graphing Calculator	Factoring Trinomials	2.5
6	Non-Graphing Calculator	Factoring (Diff of Squares, Sum and Diff of Cubes)	2.6
	Non-Graphing Calculator	Factoring (Everything)	2.7
	Non-Graphing Calculator	Solving Polynomials with Factoring	2.8
	Non-Graphing Calculator	Simplifying Rational Expressions; Multiplying and Dividing Rational Expressions	2.9
7	Non-Graphing Calculator	Adding and Subtracting Rational Expressions	2.10
	Non-Graphing Calculator	More with Operations with Rational Expressions	2.11
	Non-Graphing Calculator	Complex Fractions	2.12
	Non-Graphing Calculator	Solving Rational Equations	2.13
8	Non-Graphing Calculator	Unit 2 Review	U2 Review
	Non-Graphing Calculator	Unit 2 Review Continued	U2 Review
	Non-Graphing Calculator	Unit 2 Exam	U2 Exam
	Could Include both Calculator and Non-Calculator Parts	Radicals and Rational Exponents (numbers only)	3.1
9	Could Include both Calculator and Non-Calculator Parts	Radicals and Rational Exponents (including variables)	3.2
	Non-Graphing Calculator	Adding and Subtracting Radicals	3.3
	Non-Graphing Calculator	Properties of Radicals and Multiplying Radicals	3.4
	Non-Graphing Calculator	Dividing Radicals by Rationalizing Denominators	3.5
10	Non-Graphing Calculator	Complex Numbers; Adding and Subtracting Complex Numbers	3.6

	Non-Graphing Calculator	Multiplying Complex Numbers (including higher powers with the imaginary base)	3.7
	Non-Graphing Calculator	Dividing/Rationalizing Complex Numbers	3.8
	Non-Graphing Calculator	Solving Equations with Radicals and Rational Exponents	3.9
11	Non-Graphing Calculator	Solving Equations with Multiple Radicals	3.10
	Could Include both Calculator and Non-Calculator Parts	Unit 3 Review	U3 Review
	Could Include both Calculator and Non-Calculator Parts	Unit 3 Review Continued	U3 Review
	Could Include both Calculator and Non-Calculator Parts	Unit 3 Exam	U3 Exam
12	Non-Graphing Calculator	Relations and Functions	4.1
	Non-Graphing Calculator	Finding Information from Graphs (increasing, decreasing, intercepts, even, odd, etc.)	4.2
	Non-Graphing Calculator	Function Notation	4.3
	Non-Graphing Calculator	Operations with Functions	4.4
13	Non-Graphing Calculator	Inverse Functions	4.5
	Non-Graphing Calculator	Intro to Lines and Slope	4.6
	Non-Graphing Calculator	Graphing Linear Equations	4.7
	Non-Graphing Calculator	Equations of Lines; Parallel and Perpendicular Lines	4.8
14	Non-Graphing Calculator	Linear Inequalities in Two Variables	4.9
	Non-Graphing Calculator	Unit 4 Review	U4 Review
	Non-Graphing Calculator	Unit 4 Review Continued	U4 Review
	Non-Graphing Calculator	Unit 4 Exam	U4 Exam
15	Could Include both Calculator and Non-Calculator Parts	Fall Final Exam Review	Fall Final Review

	Could Include both Calculator and Non-Calculator Parts	Fall Final Exam Review	Fall Final Review
	Could Include both Calculator and Non-Calculator Parts	Fall Final Exam Review	Fall Final Review
	Could Include both Calculator and Non-Calculator Parts	Fall Final Exam (SPC fall semester ends 12/14/2023)	Fall Final Exam

Note: This schedule is tentative and may be altered as deemed necessary by the instructor.

Spring Semester			
Week #	No Calculator Allowed or Non-Graphing Calculator Allowed (Recommended TI-30XIIS)	Topics	Assignment
		<p>These are split up based off of three total class hours per week. This could be:</p> <p>I. Four 45-minute classes per week.</p> <p>II. Two 90-minute classes per week.</p> <p><i>**Note: Students will need to study and work on assignments outside of scheduled class time. **</i></p>	
1	Non-Graphing Calculator	Review of class policies and expectations Solving Quadratics by Factoring	5.1
	Non-Graphing Calculator	Solving Quadratics by the Square Root Method	5.2
	Non-Graphing Calculator	Solving Quadratics by Completing the Square	5.3
	Non-Graphing Calculator	Solving Quadratics by the Quadratic Formula	5.4
2	Non-Graphing Calculator	Mixed Solving for Quadratics	5.5
	Non-Graphing Calculator	Solving Quadratic-Like Equations	5.6
	Non-Graphing Calculator	Spring Cushion Day	
	Non-Graphing Calculator	Graphing Quadratics in Vertex Form	5.7
3	Non-Graphing Calculator	Graphing Quadratics in Standard Form (Completing the Square)	5.8
	Non-Graphing Calculator	Graphing Quadratics in Standard Form (Using the Formula)	5.9
	Non-Graphing Calculator	Spring Cushion Day	
	Non-Graphing Calculator	Distance and Midpoint	5.10
4	Non-Graphing Calculator	Circles	5.11
	Non-Graphing Calculator	Unit 5 Review	U5 Review
	Non-Graphing Calculator	Unit 5 Review Continued	U5 Review

	Non-Graphing Calculator	Unit 5 Exam	U5 Exam
5	Non-Graphing Calculator	Long Division of Polynomials	6.1
	Non-Graphing Calculator	Synthetic Division of Polynomials	6.2
	Non-Graphing Calculator	Roots of Polynomials	6.3
	Non-Graphing Calculator	Finding Roots with the Rational Zero Theorem Part I	6.4
6	Non-Graphing Calculator	Finding Roots with the Rational Zero Theorem Part II	6.5
	Non-Graphing Calculator	Spring Cushion Day	
	Non-Graphing Calculator	Graphing Polynomials in Factored Form	6.6
	Non-Graphing Calculator	Graphing Polynomials in Standard Form Part I	6.7
7	Non-Graphing Calculator	Graphing Polynomials in Standard Form Part II	6.8
	Non-Graphing Calculator	Spring Cushion Day	
	Non-Graphing Calculator	Graphing Rational Functions Part I	6.9
	Non-Graphing Calculator	Graphing Rational Functions Part II	6.10
8	Non-Graphing Calculator	Solving Polynomial Inequalities	6.11
	Non-Graphing Calculator	Solving Rational Inequalities	6.12
	Non-Graphing Calculator	Unit 6 Review	U6 Review
	Non-Graphing Calculator	Unit 6 Review Continued	U6 Review
9	Non-Graphing Calculator	Spring Cushion Day	
	Non-Graphing Calculator	Unit 6 Exam	U6 Exam
	Could Include both Calculator and Non-Calculator Parts	Exponential Equations and Functions	7.1
	Could Include both Calculator and Non-Calculator Parts	Logarithmic Functions	7.2
10	Could Include both Calculator and Non-Calculator Parts	Properties of Logs	7.3

	Could Include both Calculator and Non-Calculator Parts	Solving Exponential Equations	7.4
	Could Include both Calculator and Non-Calculator Parts	Spring Cushion Day	
	Could Include both Calculator and Non-Calculator Parts	Solving Logarithmic Equations	7.5
11	Could Include both Calculator and Non-Calculator Parts	More Practice with Solving Logs and Exponentials	7.6
	Non-Graphing Calculator	Applications of Exponential Equations	7.7
	Could Include both Calculator and Non-Calculator Parts	Unit 7 Review	U7 Review
	Could Include both Calculator and Non-Calculator Parts	Unit 7 Review Continued	U7 Review
12	Could Include both Calculator and Non-Calculator Parts	Unit 7 Exam	U7 Exam
	Non-Graphing Calculator	Solving Systems of Linear Equations in Two Variables (Graphing and Substitution)	8.1
	Non-Graphing Calculator	Solving Systems of Linear Equations in Two Variables (Addition/Elimination)	8.2
	Non-Graphing Calculator	Solving Systems of Linear Equations in Three Variables (Addition)	8.3
13	Non-Graphing Calculator	Gauss-Jordan Elimination	8.4
	Non-Graphing Calculator	Gauss-Jordan Elimination	8.5
	Non-Graphing Calculator	Spring Cushion Day	
	Non-Graphing Calculator	Cramer's Rule (diagonals)	8.6
14	Non-Graphing Calculator	Nonlinear Systems of Equations	8.7
	Non-Graphing Calculator	Systems of Inequalities (Linear and Nonlinear)	8.8

	Non-Graphing Calculator	Unit 8 Review	U8 Review
	Could Include both Calculator and Non-Calculator Parts	Unit 8 Exam	U8 Exam
15	Could Include both Calculator and Non-Calculator Parts	Final Exam Review	Final Review
	Could Include both Calculator and Non-Calculator Parts	Final Exam Review	Final Review
	Could Include both Calculator and Non-Calculator Parts	Final Exam Review	Final Review
	Could Include both Calculator and Non-Calculator Parts	Final Exam (SPC spring semester ends 5/9/2024. Grades are due by 5/10/2024.)	Final Exam

***Note:** This schedule is tentative and may be altered as deemed necessary by the instructor.*

Grades

- The grade for this course will be derived from grades from the Fall 2023 semester and the Spring 2024 semester.
- Students will only receive a course grade from SPC for the Spring 2024 semester.
- Grades from the unit exams and final exam from the Fall 2023 semester will carry over into the Spring 2024 semester.
- **Fall 2023**
 - Daily Grades 25%
 - Not all assignments will be graded. Daily grades may come from assignments and/or homework quizzes. Extra credit TBD.
 - Exams 75%
 - 4 unit exams and one final exam
- **Spring 2024**
 - Daily Grades 25%
 - Not all assignments will be graded. Daily grades may come from assignments and/or homework quizzes. Extra credit TBD.
 - Exams 75%
 - 4 unit exams and one final exam