Instructor: Tom Johnson   **Email**: tjohnson@southplainscollege.edu
Office: SPC Plainview, PC101G   **Office Hours:** Please make an appointment
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Course Description: The College Algebra Support Course (MATH 0314) is the study of the basic algebraic concepts necessary for success in MATH 1314, to include order of operations, graphing, polynomials, factoring, exponent rules, radical and rational expressions, and the solution of equations and inequalities. This course is not applicable toward any degree. Prerequisites: Math level 6, Reading level 7. Co-requisite: MATH 1314 (3:3:1)

College Algebra (MATH 1314) is the study and application of common algebraic functions, including polynomial, exponential, logarithmic, and rational problems are addressed. Matrices and systems of equations & inequalities are also addressed. A grade of C (or better) is required from MATH 0314, MATH 0324, or MATH 0320. (3:3:1). *However, the instructor reserves the right to award an "E" for the 0314 portion of the CoReq course due to the nature and progression of the blended program.*

Textbook: The textbook needed for this course: (Online version through Pearson Education)
- Beecher, J.; Penna, J.; Johnson, B.; Bittinger, M. (2017). <u>College Algebra with Intermediate Algebra, a Blended Course.</u> Boston: Pearson. ISBN 0134555260.

Attendance: Attendance and effort are the most important activities for success in this course. Class attendance may be taken at any time during the class period, so please do not be late or leave early. You may be dropped from this course with a grade of X or F if you are absent five (5) consecutive class days or if you exceed six (6) absences throughout the semester.

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

MATH 0314
Upon successful completion of this course, the student will be able to:
1. Perform order of operations of real numbers.
2. Perform operations using integer and rational exponents.
3. Factor and perform operations with polynomials.
4. Simplify and perform operations with rational expressions.
5. Simplify and perform operations with radical expressions.
6. Solve linear equations and equalities of a single variable.
7. Solve quadratic equations by factoring and quadratic formula.
8. Solve systems of two linear equations in two variables.
9. Graph linear and quadratic functions.

MATH 1314
 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.
6. Solve inequalities.

Course Objectives: Successful completion of this course should reflect mastery of the preceding competencies.

Core Objectives:
Communication Skills: Effective development, interpretation, and expression of ideas through written, oral, and visual communication.
Critical Thinking: Creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.
Empirical and Quantitative Competency Skills: The manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Assignments & Grading: Homework assignments are posted in My Math Lab. Please make certain all materials accompany you to each class meeting. Daily work (home work)will count for 40%, unit tests count for 40%, and the Final Exam will count for 20% of the Final Grade. 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%)

Supplies: You will need a TI 83+ or TI 84+ graphing calculator*, graph paper, and a 3-ring binder.
Calculators on cell phones, TI-89, TI-92, or TI-Inspire calculators, or any other electronic devices will NOT be allowed during testing without permission from the instructor.

Supplementary Course Information: Blackboard is the online course management system that will be utilized for this course. This course syllabus, as well as any class handouts can be accessed through Blackboard. Login at http://spc.blackboard.com. The user name and password should be the same as the MySPC and SPC email.
User name: first initial, last name, and last 4 digits of the Student ID
Password: Original CampusConnect Pin No. (found on SPC acceptance letter)

Student Conduct: The Student "Code of Conduct" will be followed in this course. You are expected to be respectful to others in the classroom. Please SILENCE phones before entering class and assist in maintaining a classroom environment conducive to learning. Any student disrupting the learning environment will be asked to leave and may be dropped from the course.

Disability: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request ADA Sec. 504 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. For more information, call or visit the Disability Services Office in the Student Health & Wellness Office, 806-716-2577.

Equal Opportunity: South Plains College strives to accommodate the individual needs of all students in order to enhance their opportunities for success in the context of a comprehensive community college setting. It is the policy of South Plains College to offer all educational and employment opportunities without regard to race, color, national origin, religion, gender, disability or age.

Diversity: 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.

Campus Concealed Carry - Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to the SPC policy at: (http://www.southplainscollege.edu/human_resources/policy_procedure/hhc.php).

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

Week #	Mo	Day		Lesson / Tentative Assignment
Week 1	01	14, 16		R.1 Set of Real Numbers; R.2 Operations with Real Numbers R.3 Exponential Notation & the Order of Operations R.4 Intro to Algebraic Expressions
Week 2	01	21, 23		R.5 Equivalent Algebraic Expressions R.6 Simplifying Algebraic Expressions R.7 Properties of Exponents & Scientific Notation TEST #1
Week 3	01	28, 30		1.1 Solving Equations 1.2 Formulas & Applications 1.3 Applications & Problem Solving 1.4 Sets, inequalities, & Interval Notation 1.5 Intersections, Unions, & Compound Inequalities 1.6 Absolute-Value Equations & Inequalities TEST #2
Week 4	02	04, 06		2.1 Graphs of Equations 2.2 Functions & Graphs 2.3 Finding Domain & Range 2.4 The Algebra of Functions
Week 5	02	11, 13		2.5 Linear Functions: Graphs & Slope 2.6 More on Graphing Linear Equations 2.7 Finding Equations of Lines TEST #3
Week 6	02	18, 20		3.1 Systems of Equations in 2 Variables 3.2 Solving by Substitution 3.3 Solving by Elimination 3.4 Solving Applied Problems; 2 Equations 3.5 Systems of Equations in 3 Variables 3.6 Solving Applied Problems; 3 Variables 3.7 Systems of Inequalities
Week 7	02	25, 27		4.1 Intro to Polynomials & Polynomial Functions 4.2 Multiplying Polynomials 4.3 Intro Factoring polynomials 4.4 & 4.5 Factoring Trinomials 4.6 Factoring Special Trinomials TEST#4
Week 8	03	03, 05		5.1 Rational Expressions & Functions: *, /, & simplify 5.2 LCMs, LCDs, Addition, & Subtraction 5.5 Solving Rational Equations 5.6 Applications & Proportions
Week 9	03	10, 12		6.1 Radical Expressions & Functions 6.2 Rational Numbers as Exponents 6.3 Simplifying Radical Equations 6.4 Addition, Subtraction, & More Multiplications 6.5 Division of Radical Expressions 6.6 Solving Radical Equations 6.7 Applications Involving Powers & Roots TEST #5
Week 10	03	24, 26		7.1 Symmetry 7.2 Transformations 7.3 The Complex Numbers 7.4 Quadratic Equations, Functions, Zeros, & Models 7.5 Analyzing Quadratic Functions

Week 11	03 04	31, 02	8.1 Polynomial Functions & Models 8.2 Graphing polynomial Functions 5.3 Division of Polynomials 5.4 Complex Rational Expressions 8.3 Polynomial Division; Remainder Theorem; Factor Theorem 8.4 Zeros of Polynomial Functions 8.5 Rational Polynomial Functions TEST #6
Week 12	04	07, 09	9.1 Composite Functions 9.2 Inverse Functions 9.3 Exponential Functions & Their Graphs 9.4 Logarithmic Functions & Graphs
Week 13	04	14, 16	9.5 Properties of Logarithmic Functions 9.6 Solving Exponential & Logarithmic Equations 9.7 Applications: Growth & Decay; Compound Interest TEST #7
Week 14	04	21, 23	10.1 Matrices & System of Equations 10.2 Matrix Operations 10.4 Determinants & Cramer's Rule
Week 15	04	28, 30	12.1 Sequences & Series 12.2 Arithmetic Sequences & Series 12.3 Geometric Sequences & Series 12.7 Binomial Theorem
Week 16	05	04-07	Final Exam To Be Announced.