South Plains College
Department of Mathematics & Engineering
MATH 0314/1314 – College Algebra with Support
Course Syllabus – Fall 2019

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Office Hours:

Monday	Tuesday	Wednesday	Thursday	Friday
10:15 - 11:00	8:15 - 9:00	10:15 - 11:00	8:15 - 9:00	10:00 - 12:00
1:45 - 2:30	1:45 - 2:30	1:45 - 2:30	1:45 - 2:30	
Or by appointment				

MATH 0314 – College Algebra Support Course:
Course Description: Background topics which are necessary for a student to successfully complete Math 1314 will be covered, with an emphasis on fractions, factoring polynomials, functions, exponents, and operating with radical and rational expressions.

Student Learning Outcomes:
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 – College Algebra:
Course Description: A standard course in college algebra covering quadratic equations, ratio and proportion, variation, binomial theorem, progressions, inequalities, complex numbers, theory of equations, determinants and matrices, linear programming, mathematical induction, permutations and combinations.

Student Learning Outcomes:
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.

General Education Core Objectives:
1. **Critical Thinking:** Students will develop habits of mind, allowing them to appreciate the processes by which scholars in various disciplines organize and evaluate data and use the methodologies of each discipline to understand the human experience.

2. **Communication Skills:** Students will communicate ideas, express feelings and support conclusions effectively in written, oral and visual formats.

3. **Empirical and Quantitative Skills:** Students will develop quantitative and empirical skills to understand, analyze and explain natural, physical and social realms.

Course Objectives: Successful completion of this course should reflect mastery of the following objectives. Chapter and section numbers are indicated in parentheses.

1. Solve and graph problems involving linear, quadratic, exponential, and logarithmic functions
2. Solve and graph linear, quadratic, and rational inequalities
3. Identify and simplify complex numbers
4. Apply midpoint, distance, and circle formulas
5. Analyze and graph polynomial functions
6. Analyze and graph rational functions
7. Create and solve systems of equations with algebraic techniques, with matrix techniques, and with determinants
8. Apply the Binomial Theorem to expand binomials of higher degree.

Textbook: No textbook is required for this class. However, the assignments and lectures for this course are derived from an OER (Open Educational Resource) college algebra textbook published by OpenStax. A free online copy can be viewed or downloaded from the following link:
https://openstax.org/details/books/college-algebra

Attendance Policy: Class attendance is expected, not optional. Class attendance may be taken at any time during the class period. You will be counted absent if you are not present at the time attendance is taken or if you leave class early. You may be dropped from this course with a grade of X or F if you are absent four consecutive classes or if you exceed eight absences (**for any reason**).

Homework and Quizzes: Homework assignments will be administered through Knewton, a company that provides online assessment along with adaptive instruction and resources. See attached sheet for instructions for logging into Knewton for this course. Working to achieve a mastery level of accomplishment on the homework assignments will help prepare you for quizzes and exams. Periodic quizzes will be given at any undisclosed time during the semester. To do well on the quizzes, you need to be consistently completing the homework. **There is NO makeup for in-class quizzes and a grade of zero will be assigned.** The average of homework and quiz grades will account for 20% of your final grade.

Exams: There will be seven unit exams though out the semester and a comprehensive final exam at the end of the semester. The lowest grade of the seven unit exams will be dropped at the end of the semester. Each of the seven unit exams will account for 10% of your final grade. Make up exams are very rare and are only given at the discretion of the instructor. If you know that you are going to miss an exam you should notify the instructor before the date of the exam. The final comprehensive exam is required and will account for 20% of your final grade. There is no make up or early testing opportunity for the final exam.

Grading Formula: Enrollment in this course does not guarantee advancement to the next course level. The final responsibility for learning lies with the student. The final letter grade for this course will be based on the following:

Homework / Quizzes 20%
6 of 7 Unit Exams (10% each) 60%
Final Exam 20%

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

Supplies: You will need a scientific calculator; such as a TI-30X IIS. Graphing calculators or calculators on cell phones or any other electronic devices are not allowed in class quizzes or exams. You will also need pencils, lined paper, and graph paper.

Resources:

- Blackboard! The course syllabus, handouts for notes, homework, quiz keys, and reviews will be available on Blackboard.
- TutorMe – instant online tutoring made available through Blackboard.
- Free tutoring is available in M116 on the Levelland campus. Hours for the tutors will be posted by there.

Student Conduct: You are expected to be respectful to others in the classroom. Please 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.

Use of Student Email: The College provides a free, official email account to all students to ensure efficient and secure communications between you and the College and your instructors. Students will be required to use their college-issued email address to communicate with their instructors and all other college personnel, so it is easy to distinguish a student's email from spam. The College expects that students will utilize their college email addresses to send and receive communications with college personnel and will read email on a frequent and consistent basis.

Disabilities 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.

Non-Discrimination Statement

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.

Campus Concealed Carry Statement

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 and Frequently Asked Questions, please refer to the Campus Carry page at: https://www.southplainscollege.edu/campuscarry.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.

Disclaimer: The instructor reserves the right to alter any class policies/dates as deemed necessary by the instructor, and will announce any changes in class.

Math 0314/1314 Tentative Course Schedule Fall 2019

Week	Date	Assignment
1	Mon, Aug 26	
	Tue, Aug 27	0314.3 Order of Operations and Simplifying Expressions
		0314.5 Adding and Subtracting Integers
		0314.6 Multiplying and Dividing Integers
	Wed, Aug 28	0314.9 Multiplying and Dividing Fractions
		0314.10 Adding and Subtracting Fractions
	Thu, Aug 29	0314.15 The Distributive Property
		Solve Linear Equations in One Variable
2	**Mon, Sep 02**	**Labor Day Holiday**
	Tue, Sep 03	0314.1 Application Problems and the Subtraction and Addition Properties of Equality
		0314.2 Application Problems and the Division and Multiplication Properties of Equality
	Wed, Sep 04	Distance, Rate, and Time and Literal Equations
		Word Problems with Linear Equations
	Thu, Sep 05	0314.4 Introduction to Integers and Absolute Value
		0314.31 Inequalities, the Number Line, and Interval Notation
3	Mon, Sep 09	**Exam 1**
	Tue, Sep 10	Absolute Value Equations and Inequalities
		Relations and Functions
		Domain and Range of Functions
	Wed, Sep 11	Combinations of Functions
		0314.7 Reading Graphs and the Rectangular Coordinate System
		0314.8 Graphing Linear Equations
	Thu, Sep 12	Cartesian Coordinates and Distances
		0314.11 Intercepts on the Coordinate Plane
4	Mon, Sep 16	0314.12 Understanding Slope
		0314.13 The Slope Formula
		0314.14 Parallel and Perpendicular Lines
	Tue, Sep 17	Interpretations of Linear Functions
		Application of Linear Functions
	Wed, Sep 18	Identify Slopes and Intercepts
		Find Linear Equations
	Thu, Sep 19	0314.22 Order of Operations and Simplifying Expressions
		0314.23 The Greatest Common Factor and Factoring by Grouping
5	Mon, Sep 23	**Exam 2**
	Tue, Sep 24	0314.24 Factoring Trinomials with a Leading Coefficient of 1
		0314.25 Factoring Trinomials with a Leading Coefficient Other than 1
	Wed, Sep 25	0314.26 Factoring Special Products

	Thu, Sep 26	0314.26.1 Choosing a Factoring Strategy
6	Mon, Sep 30	Solve Quadratic Equations by Factoring
	Tue, Oct 01	Complete the Square
		Quadratic Formula
	Wed, Oct 02	Solving Systems of Linear Equations
	Thu, Oct 03	0314.16 Domain of Rational Expressions and Simplifying Rational Expressions
		0314.17 Multiplying and Dividing Rational Expressions
7	**Mon, Oct 07**	**Exam 3**
	Tue, Oct 08	0314.18 Adding and Subtracting Rational Expressions with a Common Denominator
		0314.19 Adding and Subtracting Rational Expressions with Unlike Denominators
	Wed, Oct 09	Solve Rational Equations
	Thu, Oct 10	0314.20 Square Roots and the Real Number System
		Solve Radical Equations
8	Mon, Oct 14	Basics of Complex Numbers
		Operations on Complex Numbers
	Tue, Oct 15	Piecewise Functions
		Graphical Properties of Functions
	Wed, Oct 16	Transformations of Functions
	Thu, Oct 17	0314.27 Parabolas and Their Properties
		0314.28 Graphing Quadratic Equations
9	**Mon, Oct 21**	**Exam 4**
	Tue, Oct 22	Characteristics of Parabolas
		Graphs of Quadratic Functions
	Wed, Oct 23	Graphs of Circles
	Thu, Oct 24	0314 Adding and Subtracting Polynomials
		0314.29 Multiplying Polynomials
10	Mon, Oct 28	End Behavior of Polynomial Functions
		Local Behavior of Polynomial Functions
		Write and Graph Polynomial Functions
	Tue, Oct 29	Long Division of Polynomials
		Synthetic Division and Remainder Theorem
	Wed, Oct 30	0314.30 Domain of Rational Expressions and Simplifying Rational Expressions
		Asymptotic Behavior of Rational Functions
	Thu, Oct 31	Graphs and Applications of Rational Functions
11	**Mon, Nov 04**	**Exam 5**
	Tue, Nov 05	0314.32 Solving One-Step Linear Inequalities
		Rational and Quadratic Inequalities
	Wed, Nov 06	Combinations of Functions

		Evaluate Composite Functions
	Thu, Nov 07	Properties of Composite Functions
12	Mon, Nov 11	Inverse Function Values
		Find Inverse Functions
	Tue, Nov 12	0314.33 Product Properties of Exponents
	Wed, Nov 13	Evaluate and Write Exponential Functions
	Thu, Nov 14	Applications of Exponential Functions and Base e
13	**Mon, Nov 18**	**Exam 6**
	Tue, Nov 19	Exponential Function Graphs
		Relate Logarithms and Exponents
		Evaluate Logarithmic Expressions
	Wed, Nov 20	Logarithmic Function Graphs
		0314.35 Quotient Properties of Exponents and Dividing Monomials
		Basic Properties of Logarithms
	Thu, Nov 21	Rewrite Logarithmic Expressions Using Properties
		Solve Exponential Equations
		Solve Logarithmic Equations
14	Mon, Nov 25	Applications of Exponential and Logarithmic Functions
		Systems of Linear Equations in Three Variables
		Systems of Two Nonlinear Equations
	Tue, Nov 26	**Exam 7**
	Wed, Nov 27	**Thanksgiving Break**
	Thu, Nov 28	**Thanksgiving Break**
15	Mon, Dec 02	Linear Inequalities in Two Variables
		Graphing Nonlinear Inequalities and Systems of Inequalities
	Tue, Dec 03	Introduction to Matrices
		Matrix Multiplication
		Solving Systems with Gaussian Eliminations
	Wed, Dec 04	Finding Determinants of Matrices
		Solving Systems with Cramer's Rule
	Thu, Dec 05	**Review for Final Exam**
16	Mon, Dec 09	Final Exam: 10:15 - 12:15