

South Plains College – Mathematics Department  
**College Algebra (Dual Credit) – MATH 1314**  
Course Syllabus – Fall Semester 2018

**Instructor:** Tom Johnson  
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**Office Hours:** MTWR 8:00 – 8:20 AM  
MTWR 10:20 – 11:40 PM  
F 8:00 AM – Noon  
(Please make an appointment)

**Course Description:** MATH 1314. COLLEGE ALGEBRA. **(3:3:1)** A standard course in college algebra. 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. Semester Hours: 3 Lecture Hours: 3 Lab Hours: 1 Pre-requisite: Two units of high school algebra or MATH 0320. (from the current SPC catalog)

**Textbook:** The textbook needed for this course: (Online version through Pearson Education)

- Blitzer, R. (2017). College Algebra, 7<sup>th</sup> ed. New Jersey: Pearson Prentice Hall. ISBN 978-0-134-46916-4.

**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 four (4) consecutive classes 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:

*(Textbook sections indicated in parentheses.)*

1. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions and inverses. (2.1-2.4, 2.7)
2. Recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations. (1.2-1.7, 3.1-3.6, 4.1-4.4)
3. Apply graphing techniques. (2.5-2.6, 3.1-3.6)
4. Evaluate all roots of higher degree polynomial and rational functions. (3.1-3.3)
5. Recognize, solve and apply systems of linear equations using matrices. (5.1-5.2, 5.4-5.5, 6.1, 6.5)

*\*Developed by the Texas Coordinating Board and the Faculty of South Plains College's Math and Engineering Department.*

**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; (1.2, 1.3, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 3.1, 4.1, 4.2, 4.3, 4.4)
2. Solve and graph linear, quadratic, and rational inequalities; (1.7, 3.6, 5.5)
3. Identify and simplify complex numbers; (1.4)
4. Apply midpoint, distance, and circle formulas; (2.8)
5. Analyze and graph polynomial functions; (3.2, 3.3, 3.4)
6. Analyze and graph rational functions; (3.5)
7. Create and solve systems of equations with algebraic techniques, with matrix techniques, and with determinants; (5.1, 5.2, 5.4, 6.1, 6.5)
8. Apply the Binomial Theorem to expand binomials of higher degree. (8.5)

**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 will be made at each class meeting. Quizzes may be administered at any time. Keep all class materials (notes, handouts, homework, quizzes, and exams) organized in a notebook (3-ring binder). These materials are subject to be turned in for grading at any time. Please make certain all materials accompany you to each class meeting. Late assignments will be accepted with a 10% penalty. Daily work (homework, quizzes, notebook) will count for 40% of the final grade, while all exams count for 60% of the final grade. Expect four major exams throughout the course and a cumulative final exam at the end of 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%).

**Supplies:** You will need a scientific or 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](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.

MATH 1314 Assignments and Tests Schedule – Fall 2018 – Mr. Johnson

Week #		M, W, R		Lesson / Tentative Assignment
Week 1		8/27 – 8/31	Assignment 1	[1.2] Linear & Rational Equations
			Assignment 2	[1.3] Linear Models and Applications
Week 2	*	9/4 – 9/7	Assignment 3	[1.4] Complex Numbers
			Assignment 4	[1.5] Quadratic Equations
Week 3		9/10 – 9/14	Assignment 5	[1.6] Other Types of Equations & [1.7] Linear & Absolute Value Inequalities
				TEST #1 (12%)
Week 4		9/17 – 9/21	Assignment 6	[2.1 & 2.2] Functions and Their Graphs
			Assignment 7	[2.3 & 2.4] Linear Functions and Slope
Week 5		9/24 – 9/28	Assignment 8	[2.6] Combinations of Functions
			Assignment 9	[2.7] Inverse Functions [2.8] Distance, Midpoint, & Circles
Week 6		10/1 – 10/5		TEST #2 (12%)
			Assignment 10	[3.1] Quadratic Functions; [3.2] Polynomial Functions & Their Graphs
Week 7		10/8 – 10/12	Assignment 11	[3.4] Roots of Polynomials
			Assignment 12	[3.3] Synthetic Division
Week 8		10/15 – 10/19	Assignment 13	[3.5] Rational Functions & Their Graphs
			Assignment 14	[3.6] Polynomial & Rational Inequalities
Week 9		10/22 – 10/26		TEST #3 (12%)
			Assignment 15	[4.1] Exponential Functions
Week 10		10/29 – 11/2	Assignment 16	[4.2] Logarithmic Functions
			Assignment 17	[4.3] Properties of Logarithms
Week 11		11/5 – 11/9	Assignment 18	[4.4] Exponential & Logarithmic Equations
				TEST #4 (12%)
Week 12		11/12 – 11/16	Assignment 19	[5.1] 2x2 Systems; [5.2] 3x3 Systems
			Assignment 20	[5.4] Nonlinear Systems
Week 13	*	11/19 – 11/20	Assignment 21	[6.1] Matrix Solutions to Systems
Week 14		11/26 – 11/30	Assignment 22	[6.5] Determinants & Cramer's Rule
			Assignment 23	[8.5] The Binomial Theorem
Week 15		12/3 – 12/7	Assignment 24	[8.2] Arithmetic Sequences and [8.3] Geometric Series
			Assignment 25	Review for comprehensive final exam
Week 16	*	12/10 – 12/13		Final Exam (12%) 10:15 AM to 12:15 PM