

South Plains College  
Mathematics Department  
**College Algebra – MATH 1314**  
Course Syllabus  
Fall 2016

**Instructor:** Jay Driver

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**Office Hours:** MW 10:40-11:30am.

TR 10:40am-12:30pm.

F 9:00am-12:00pm.

And by appointment!

**Course Description:** MATH 1314. COLLEGE ALGEBRA. (3:3:1) Prerequisite: Two units of high school algebra or MATH 0320. 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. (copied from the current SPC catalog)

**Core Objectives:**

*Communication Skills:* Effective development, interpretation, and expression of ideas through written, oral, and visual communication.

- Develop, interpret, and express ideas through written communication.
- Develop, interpret, and express ideas through oral communication.
- Develop, interpret, and express ideas through visual communication.

*Critical Thinking:* Creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.

- Generate and communicate ideas by combining, changing, and reapplying existing information.
- Gather and assess information relevant to a question.
- Analyze, evaluate, and synthesize information.

*Empirical and Quantitative Competency Skills:* The manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

- Manipulate and analyze numerical data and arrive at an informed conclusion.
- Manipulate and analyze observable facts and arrive at an informed conclusion.

**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.*

**Textbook:** The textbook required for this course may be either of the following:

Blitzer, R. (2007). College Algebra, 6<sup>th</sup> ed. New Jersey: Pearson Prentice Hall. ISBN 978-0-321-78228-1.

Blitzer, R. (2010). College Algebra, 5<sup>th</sup> ed. New Jersey: Pearson Prentice Hall. ISBN 0-321-55983-5.

**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)

**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 consecutive classes or if you exceed six absences throughout the semester. Be on time and turn off any cell phones or pagers before entering the classroom.

**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. No late assignments will be accepted. Daily work (homework, quizzes, notebook) will count for 20% of the final grade, while all exams count for 80% of the final grade. Expect four major exams (15% each) throughout the course and a cumulative final exam (20%) 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 & Tutoring:** 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)

Free tutoring and video tapes are available in room M116 or in Building 2 at the Reese Center. Digital versions of these tutorial videos can be viewed on your personal computer at the Blackboard address given above. Check Blackboard often for the latest tutoring schedule and course supplements (handouts, online practice quizzes, additional notes, sample problems for practice, etc.).

**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.

**Disability:** 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 Center 806-716-2577, Reese Center (also covers ATC) Building 8: 806-716-4675, Plainview Center Main Office: 806-716-4302 or 806-296-9611, or the Health and Wellness main number at 806-716-2529.

**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.

## College Algebra Tentative Course Outline

MATH 1314.009 (MW 2:30 – 4:15pm)

Fall 2016

Week	Day	Date	Lesson / Tentative Assignment
1	Monday	August 29	Assignment 1: [1.2] Linear & Rational Equations
	Wednesday	August 31	Assignment 2: [1.3] Linear Applications
2	Monday	September 5	<i>Labor Day Holiday</i>
	Wednesday	September 7	Assignment 3: [1.4] Complex Numbers; [1.5] Quadratic Equations Part 1 of 2
3	Monday	September 12	Assignment 4: [1.5] Quadratic Equations Part 2 of 2
	Wednesday	September 14	Assignment 5: [1.6] Other Types of Equations
4	Monday	September 19	Assignment 6: [1.7] Linear & Absolute Value Inequalities
	Wednesday	September 21	<b>Exam 1 (15%)</b>
5	Monday	September 26	Assignment 7: [2.1 & 2.2] Functions and Their Graphs
	Wednesday	September 28	Assignment 8: [2.3 & 2.4] Linear Functions and Slope
6	Monday	October 3	Assignment 9: [2.8] Distance, Midpoint, & Circles; [2.6] Combinations of Functions
	Wednesday	October 5	Assignment 10: [2.6] Composite Functions, [2.7] Inverse Functions
7	Monday	October 10	Assignment 11: [3.1] Quadratic Functions, [3.3] Synthetic Division
	Wednesday	October 12	<b>Exam 2 (15%)</b>
	Friday	October 14	<i>SPC Fall Break (all offices closed)</i>
8	Monday	October 17	Assignment 12: [3.2] Polynomial Functions & Their Graphs; [3.4] Roots of Polynomials
	Wednesday	October 19	Assignment 13: [3.5] Rational Functions & Their Graphs
9	Monday	October 24	Assignment 14: [3.6] Polynomial & Rational Inequalities
	Wednesday	October 26	Assignment 15: [4.1] Exponential Functions, [4.2] Logarithmic Functions
10	Monday	October 31	Assignment 16: [4.3] Properties of Logarithms
	Wednesday	November 2	Assignment 17: [4.4] Exponential & Logarithmic Equations
11	Monday	November 7	Assignment 18: [Chapters 3 and 4]
	Wednesday	November 9	<b>Exam 3 (15%)</b>
	Thursday	November 10	<i>Online Registration for Spring Semester Opens at 8:00am</i>
12	Monday	November 14	Assignment 19: [5.1] 2x2 Systems; [5.2] 3x3 Systems
	Wednesday	November 16	Assignment 20: [5.4] Nonlinear Systems; [5.5] Systems of Inequalities
	Thursday	November 17	<i>Last Day to Drop Fall Semester Courses</i>
13	Monday	November 21	Assignment 21: [6.1] Matrix Solutions to Systems
	Wednesday	November 23	<i>Thanksgiving break November 23-25</i>
14	Monday	November 28	Assignment 22: [6.5] Determinants & Cramer's Rule
	Wednesday	November 30	<b>Exam 4 (15%)</b>
15	Monday	December 5	Assignment 23: [8.5] The Binomial Theorem
	Wednesday	December 7	Assignment 24: Review for comprehensive final exam
16	Wednesday	December 14	<b>Final Exam (20%)</b> from 3:15-5:15pm