South Plains College
Mathematics Department
College Algebra – MATH 1314
Course Syllabus
Spring 2019

Instructor: Jay Driver   **Office Hours:** MW 1:30-2:30pm
 Office: M114 (mathematics building)   TR 1:30-3:00pm
 Telephone: (806) 716-2780   F 9:00am-12:00pm
 Email: jdriver@southplainscollege.edu   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:
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.

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

Textbook: The textbook for this course may be any of the following:

Beecher, J. A., Penna, J. A., Johnson, B. L., & Bittinger, M. L. (2017). College Algebra with Intermediate Algebra: A Blended Course. Boston: Pearson. ISBN 0134555260.

Blitzer, R. (2018). College Algebra, 7th ed. New Jersey: Pearson Prentice Hall. ISBN 978-0-134-46916-4.

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

Blitzer, R. (2010). College Algebra, 5th 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.
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.

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 <u>three</u> consecutive classes or if you exceed five 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. <u>No late assignments will be accepted.</u> 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%).

> <u>Format for submitting all assignments:</u>
> 1. Write the problem on your own paper.
> 2. Show all necessary work.
> 3. Clearly mark your answer.
> 4. Check your answers on Blackboard to make certain you are practicing correctly.

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 https://southplainscollege.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 is available in room M116 at the Levelland campus or in Building 2 at the Reese Center. Check Blackboard often for the latest tutoring schedule and course supplements (handouts, online practice quizzes, additional notes, sample problems for practice, etc.).

Questions regarding Blackboard support may be emailed to blackboard@southplainscollege.edu or by telephone to 806-716-2180.

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 <u>not</u> be allowed during testing without permission from the instructor.

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.

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.

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 Office) 806-716-2577, Reese Center (Building 8) & Lubbock Center 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

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, 806-894-9611.

College Algebra Tentative Course Outline
MATH 1314.003 (MW 11:00am – 12:45pm)
Spring 2019

Week	Day	Date	Lesson / Tentative Assignment
1	Mon	Jan 14	Assignment 1: Linear & Rational Equations
	Wed	Jan 16	Assignment 2: Linear Applications
2	Mon	Jan 21	*Martin Luther King Jr. Holiday*
	Wed	Jan 23	Assignment 3: Complex Numbers; Quadratic Equations Part 1 of 2
3	Mon	Jan 28	Assignment 4: Quadratic Equations Part 2 of 2
	Wed	Jan 30	Assignment 5: Other Types of Equations
4	Mon	Feb 4	Assignment 6: Linear & Absolute Value Inequalities
	Wed	Feb 6	**Exam 1 (15%)**
5	Mon	Feb 11	Assignment 7: Functions and Their Graphs
	Wed	Feb 13	Assignment 8: Linear Functions and Slope
6	Mon	Feb 18	Assignment 9: Distance, Midpoint, Circles, and Combinations of Functions
	Wed	Feb 20	Assignment 10: Composite Functions and Inverse Functions
7	Mon	Feb 25	Assignment 11: Quadratic Functions and Synthetic Division
	Wed	Feb 27	**Exam 2 (15%)**
8	Mon	Mar 4	Assignment 12: Polynomial Functions & Their Graphs; Roots of Polynomials
	Wed	Mar 6	Assignment 13: Rational Functions & Their Graphs
	Mon-Fri	Mar 11-15	*SPC Spring Break (all offices closed)*
9	Mon	Mar 18	Assignment 14: Polynomial & Rational Inequalities
	Wed	Mar 20	Assignment 15: Exponential Functions and Logarithmic Functions
10	Mon	Mar 25	Assignment 16: Properties of Logarithms
	Wed	Mar 27	Assignment 17: Exponential & Logarithmic Equations
11	Mon	Apr 1	**Exam 3 (15%)**
	Wed	Apr 3	Assignment 18: 2x2 Systems and 3x3 Systems
12	Mon	Apr 8	Assignment 19: Matrix Solutions to Systems
	Wed	Apr 10	Assignment 20: Partial Fractions
13	Mon	Apr 15	Assignment 21: Nonlinear Systems and Systems of Inequalities
	Wed	Apr 17	Assignment 22: Determinants & Cramer's Rule
14	Mon	Apr 22	*Easter holiday*
	Wed	Apr 24	**Exam 4 (15%)**
	Thur	Apr 25	*Last day to drop a class at SPC*
15	Mon	Apr 29	Assignment 23: The Binomial Theorem
	Wed	May 1	Assignment 24: Arithmetic Sequences, Geometric Sequences and Series
16	Mon	May 6	**Final Exam (20%) from 10:15am-12:15pm**