

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

Instructor: Phyllis Cormier

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Office Hours: Monday - Thursday 10:30 a.m. – 12:00 p.m.; Friday by appointment
Monday & Tuesday 3:00 p.m. – 4:00 p.m.

Office: Reese Center, Building 2 Rm 223B Phone: (806)716-2797

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. The study and application of common algebraic functions, including quadratic, linear, polynomial, exponential, logarithmic, and rational problems are addressed. Matrices and systems of equations & inequalities are also addressed.

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. (2.2, 2.3, 2.5 – 2.7, 9.1, 9.2)
2. Recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations. (1.1 – 1.3, 1.6, 5.5, 6.6, 7.4, 9.3 – 9.6)
3. Apply graphing techniques. (2.2, 2.5, 2.6, 7.2, 8.1 – 8.6)
4. Evaluate all roots of higher degree polynomial and rational functions. (5.3, 8.1 – 8.4, 11.1)
5. Recognize, solve and apply systems of linear equations using matrices. (3.1 – 3.3, 3.5, 10.1 – 10.4, 11.4)

**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; (1.1 – 1.3, 1.6, 2.2, 2.3, 2.5 – 2.7, 5.5, 6.6, 7.4, 9.3 – 9.6, 11.1)
2. Solve and graph linear, quadratic, and rational inequalities; (1.6, 8.6, 11.4)
3. Identify and simplify complex numbers; (7.3)
4. Apply midpoint, distance, and circle formulas; (11.2)
5. Analyze and graph polynomial functions; (3.3, 8.1 – 8.4)
6. Analyze and graph rational functions; (8.5)
7. Create and solve systems of equations with algebraic techniques, with matrix techniques, and with determinants; (3.1 – 3.3, 3.5, 10.1, 10.3, 0.4, 11.4)
8. Apply the Binomial Theorem to expand binomials of higher degree. (12.7)

Textbook: The textbook referenced in this course will be the following:

- Beecher, J., Penna, J., Johnson, B., and Bittinger, M., (2017). *College Algebra with Intermediate Algebra: A Blended Course*, 1st ed. Boston: Pearson. ISBN 978-0-13-455526-3.

You may also consider referencing

- Blitzer, R. (2017). *College Algebra*, 7th ed. New Jersey: Pearson Prentice Hall. ISBN 978-0-134-46916-4. OR
- Blitzer, R. (2013). *College Algebra*, 6th ed. New Jersey: Pearson Prentice Hall. ISBN 978-0-321-78228-1.

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 silence any cell phones 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, lab work, 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 for a reduced score. Daily work (homework, quizzes, lab work, 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://southplainscollege.blackboard.com>. The user name and password should be the same as the Texan Connect and SPC email.

Free tutoring is available at the Reese Center in Building 2. 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.

Withdrawal Policy: Students starting college for the first time in Fall 2007 or after may only receive six grades of W (grade received from a course dropped after the census date) from all Texas public colleges and universities attended. Grades of W in developmental courses or courses taken while in high school will not count in the six grades of W. After six grades of W are received, students must receive grades of A, B, C, D, or F in all courses. There are other exemptions from the six-drop limit and students should consult with a Counselor/Educational Planner before they drop courses to determine these exemptions. Students receiving financial aid must get in touch with the Financial Aid Office before withdrawing from a course. It is the student's responsibility to drop. If you plan to withdraw, please consult with the instructor immediately.

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. For more information, call or visit the Disability Services Office in the Student Health & Wellness Office, 806-716-2577 or Reese Center Building 8, 806-716-4675.

Title IX Pregnancy Accommodations Statement If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To activate accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact Crystal Gilster, Director of Health and Wellness at 806-716-2362 or email cgilster@southplainscollege.edu for assistance.

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.

Sexual Misconduct: It is important for you to know that all faculty members are mandated reporters of any incidents of sexual misconduct. That means that I cannot keep information about sexual misconduct confidential if you share that information with me. Dr. Lynne Cleavinger, the Director of Health & Wellness, can advise you confidentially as can any counselor in the Health & Wellness Center. They can also help you access other resources on campus and in the local community. You can reach Dr. Cleavinger at 716-2563 or lclevinger@southplainscollege.edu or go by the Health and Wellness Center. You can schedule an appointment with a counselor by calling 716-2529.

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.

College Algebra Tentative Course Outline
MATH 1314.206 (TR 8:30 – 10:15 a.m., RC216)
Fall 2019

Week	Day	Date	Lesson / Tentative Assignment
1	Tuesday	August 27	<i>Assignment 1:</i> [1.1,1.2,5.5] Linear & Rational Equations
	Thursday	August 29	<i>Assignment 2:</i> [1.3] Linear Models and Applications
2	Tuesday	September 3	<i>Assignment 3:</i> [7.3] Complex Numbers; [7.4] Quadratic Equations Part 1 of 2, [7.5] Quadratic Functions
	Thursday	September 5	<i>Assignment 4:</i> [7.4] Quadratic Equations Part 2 of 2
3	Tuesday	September 10	<i>Assignment 5:</i> [6.6] Other Types of Equations, [1.6] Linear & Absolute Value Inequalities Part 1 of 2
	Thursday	September 12	<i>Assignment 6:</i> [1.6] Linear & Absolute Value Inequalities Part 2 of 2
4	Tuesday	September 17	Exam 1 (15%)
	Thursday	September 19	<i>Assignment 7:</i> [2.2, 2.3, 2.4] Functions and Their Graphs, [6.8] Increasing, Decreasing & Piecewise Functions, [7.1] Symmetry
5	Tuesday	September 24	<i>Assignment 8:</i> [2.5,2.6, 2.7] Linear Functions & [12.7] The Binomial Theorem
	Thursday	September 26	<i>Assignment 9:</i> [11.1&11.2] Distance, Midpoint, & Circles; [2.4] Combinations of Functions
6	Tuesday	October 1	<i>Assignment 10:</i> [9.1] Composite Functions, [9.2] Inverse Functions
	Thursday	October 3	<i>Assignment 11:</i> [11.1] Quadratic Functions & [5.3] Synthetic Division
7	Tuesday	October 8	Exam 2 (15%)
	Thursday	October 10	<i>Assignment 12:</i> [8.1-8.4] Polynomial Functions & Their Graphs & Roots of Polynomials
8	Tuesday	October 15	<i>Assignment 13:</i> [8.5] Rational Functions & Their Graphs, [7.2] Transformations of Functions
	Thursday	October 17	<i>Assignment 14:</i> [8.6] Polynomial & Rational Inequalities
9	Tuesday	October 22	<i>Assignment 15:</i> [9.3] Exponential Functions, [9.4] Logarithmic Functions, [9.7] Models: Exponential Growth and Decay
	Thursday	October 24	<i>Assignment 16:</i> [9.5] Properties of Logarithms
10	Tuesday	October 29	<i>Assignment 17:</i> [9.6] Exponential & Logarithmic Equations
	Thursday	October 31	<i>Assignment 18:</i> [Review of Chapters 8 and 9]
11	Tuesday	November 5	Exam 3 (15%)
	Thursday	November 7	<i>Assignment 19:</i> [3.1-3.3 & 3.5] 2x2 Systems & 3x3 Systems
12	Monday	November 11	<i>Online registration opens for the Winter Interim and Spring 2020 at 8:00am</i>
	Tuesday	November 12	<i>Assignment 20:</i> [10.1] Matrix Solutions to Systems
	Thursday	November 14	<i>Last day to drop a class at SPC</i> <i>Assignment 21:</i> [10.4] Determinants & Cramer's Rule
13	Tuesday	November 19	<i>Assignment 22:</i> [10.2 & 10.3] Matrix Operations & Inverses
	Thursday	November 21	<i>Assignment 23:</i> [11.4] Nonlinear Systems; Systems of Inequalities
14	Tuesday	November 26	Exam 4 (15%)
	Thursday	November 28	<i>Thanksgiving Holiday</i>
15	Tuesday	December 3	<i>Assignment 24:</i> [Appendix] Partial Fractions; [12.2] Arithmetic Sequences and [12.3] Geometric Series
	Wednesday	December 5	<i>Assignment 25:</i> Review for comprehensive final exam
16	Tuesday	December 10	Final Exam (20%) 8:00 a.m. – 10:00 a.m.