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

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Office Hours: 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, 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. 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 two consecutive classes or if you exceed three absences throughout the summer term. Be on time and turn off any cell phones before entering the classroom.

Assignments & Grading: Homework assignments will be made at each class meeting. 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 three exams (20% 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%).

Format for submitting assignments:

1. Write the problem.
2. Show all necessary work.
3. Clearly mark your answer.
4. Check your answers on Blackboard to make certain you are practicing correctly.

Supplies: You will need a scientific (TI-30) or graphing (TI-84) 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.

Blackboard: 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 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)

Check Blackboard often for the latest announcements, tutoring schedule, and course supplements (handouts, online practice quizzes, additional notes, sample problems for practice, etc.). Free tutoring is also available at Building 2 on the Reese Campus.

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.

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College Algebra Tentative Course Outline
MATH 1314.002 (MTWR 10:00 – 11:55)
Summer I 2019
Reese Center, RC221

Week	Day	Date	Lesson Topics / Assignments / Exams
1	Monday	June 3	***Assignment 1:*** [1.2] Linear & Rational Equations and [1.3] Applications
	Tuesday	June 4	***Assignment 2:*** [1.4] Complex Numbers; [1.5] Quadratic Equations Part 1 of 2
	Wednesday	June 5	***Assignment 3:*** [1.5] Quadratic Equations Part 2 of 2 and [1.6] Other Types of Equations
	Thursday	June 6	***Assignment 4:*** [1.7] Linear & Absolute Value Inequalities
2	Monday	June 10	**Exam 1 (20%)**
	Tuesday	June 11	***Assignment 5:*** [2.1 & 2.2] Functions and Their Graphs
	Wednesday	June 12	***Assignment 6:*** [2.3 & 2.4] Linear Functions and Slope
	Thursday	June 13	***Assignment 7:*** [2.8] Distance, Midpoint, & Circles and [2.6] Composition of Functions
3	Monday	June 17	***Assignment 8:*** [2.7] Inverse Functions and [3.1] Quadratic Functions
	Tuesday	June 18	**Exam 2 (20%)**
	Wednesday	June 19	***Assignment 9:*** [3.2] Polynomial Functions & Their Graphs, [3.3] Synthetic Division, and [3.4] Roots of Polynomials
	Thursday	June 20	***Assignment 10:*** [3.5] Rational Functions & Their Graphs and [3.6] Polynomial & Rational Inequalities
4	Monday	June 24	***Assignment 11:*** [4.1] Exponential Functions, [4.2] Logarithmic Functions, and [4.3] Properties of Logarithms
	Tuesday	June 25	***Assignment 12:*** [4.4] Exponential & Logarithmic Equations
	Wednesday	June 26	**Exam 3 (20%)**
	Thursday	June 27	***Assignment 13:*** [5.1] 2x2 Systems and [5.2] 3x3 Systems
5	Monday	July 1	***Assignment 14:*** [6.1] Matrix Solutions to Systems and [6.3] Determinants and Cramer's Rule
	Tuesday	July 2	***Assignment 15:*** [5.3] Partial Fractions
	Wednesday	July 3	***Assignment 16:*** [5.4] Nonlinear Systems and [5.5] Systems of Inequalities
6	Monday	July 8	***Assignment 17:*** [8.2] Arithmetic Sequences, [8.3] Geometric Sequences and Series, and [8.5] The Binomial Theorem
	Tuesday	July 9	**Cumulative Final Exam (20%)**