College Algebra – MATH 1314

Course Syllabus-spring 2017

Instructor: Benoit (Ben) Ahanda
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	M W (Reese)	T R (Levelland)	F (Levelland)
Office Hours	• 1:00pm-2:00pm M (room-214-1st floor) • 8:15pm-9:00pm M W (RC266) • Or by appointment	• 12:55pm-2:25pm T R • 4:15pm-5:00pm T R • Or by appointment	• 8:15am-11:15pm • Or 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 will 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 will be assigned at each class meeting. Generally, homework will be collected each Wednesday/Thursday for grading. Late homework is not accepted except with a valid excuse. Note that homework assignments will be posted in blackboard. Quizzes may be administered at any time. No late assignments will be accepted.
You are required to keep all class materials (syllabus, notes, handouts, homework, quizzes, and exams) organized in a notebook (3-ring binder). These materials are subject to be turned in prior to each midterm exam for extra credit opportunity.

Homeworks and quizzes will count for 20% of the final grade, while all exams count for 80% of the final grade. Expect three major exams (20% each) throughout the course and a cumulative final exam (20%) at the end of the course.

Note: There may be a chance to earn extra points on certain assignments and class participation.

Grade Distribution: the following scale will determine your letter grade:

- 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.

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. Students are responsible for establishing accommodations through South Plains College and students must notify their instructor and Academic Advisor that accommodations have been 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 strive 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 -TR Spring 2017		
Day	Date	**Lesson**
Tuesday	January 17	Syllabus, Assessment,
Thursday	January 19	[1.2] Linear & Rational Equations
Tuesday	January 24	[1.3] Linear Applications
Thursday	January 26	[1.4] Complex Numbers; [1.5] Quadratic Equations Part 2 of 2
Tuesday	January 31	[1.5] Quadratic Equations Part 2 of 2; [1.6] Other Types of Equations
Thursday	February 2	[1.7] Linear & Absolute Value Inequalities
Tuesday	February 7	[2.1 & 2.2] Functions and Their Graphs
Thursday	February 9	**Exam1 Review**
Tuesday	February 14	**Exam 1**
Thursday	February 16	[2.3 & 2.4] Linear Functions and Slope
Tuesday	February 21	[2.6] Combinations of Functions; [2.8] Distance, Midpoint, & Circles
Thursday	February 23	[2.8] Distance, Midpoint, & Circles; [3.1] Quadratic Functions
Tuesday	February 28	[3.1] Quadratic Functions; [3.3] Synthetic Division; [3.2] Polynomial Functions & Their Graphs;
Thursday	March 2	[3.2] Polynomial Functions & Their Graphs; [3.4] Roots of Polynomials;
Tuesday	March 7	[3.5] Rational Functions & Their Graphs
Thursday	March 9	[3.5] Rational Functions & Their Graphs; [4.1] Exponential Functions
Tuesday	March14	**Spring Break**
Thursday	March16	**Spring Break**
Tuesday	March 21	**Exam2 Review**
Thursday	March 23	**Exam2**
Tuesday	March 28	[4.1] Exponential Functions, [4.2] Logarithmic Functions
Thursday	March 30	[4.3] Properties of Logarithms
Tuesday	April 4	[4.4] Exponential & Logarithmic Equations
Thursday	April 6	[5.1] 2x2 Systems; [5.2] 3x3 Systems
Tuesday	April 11	[5.2] 3x3 Systems; [5.4] Nonlinear Systems
Thursday	April 13	[5.4] Nonlinear Systems; [5.5] Systems of Inequalities
Tuesday	April 18	[6.1] Matrix Solutions to Systems; **Exam3 Review**
Thursday	April 20	**Exam3**
Tuesday	April 25	[6.1] Matrix Solutions to Systems; [6.5] Determinants & Cramer's Rule
Thursday	April 27	[6.5] Determinants & Cramer's Rule; [8.5] The Binomial Theorem;
Tuesday	May 2	[8.5] The Binomial Theorem; **Review for Final Exam : Part1**
Thursday	May 4	**Review for Final Exam : Part2**
Tuesday	May 9	**Final Exam** : 10:15am-12:15pm (For the 11am class)
Tuesday	May 9	**Final Exam** : 1:00pm-3:00pm (For 2:30pm class)

Note that this calendar is subject to change. If the date of an exam has to be changed, the instructor will notify you about it as soon as possible.

College Algebra Tentative Course Outline

MATH 1314 -MW Spring 2017		
Day	Date	**Lesson**
Wednesday	January 18	Syllabus, Assessment,
Monday	January 23	[1.2] Linear & Rational Equations
Wednesday	January 25	[1.3] Linear Applications
Monday	January 30	[1.4] Complex Numbers; [1.5] Quadratic Equations Part 2 of 2
Wednesday	February1	[1.5] Quadratic Equations Part 2 of 2; [1.6] Other Types of Equations
Monday	February 6	[1.7] Linear & Absolute Value Inequalities
Wednesday	February 8	[2.1 & 2.2] Functions and Their Graphs
Monday	February 13	**Exam1 Review**
Wednesday	February 15	**Exam 1**
Monday	February 20	[2.3 & 2.4] Linear Functions and Slope
Wednesday	February 22	[2.6] Combinations of Functions; [2.8] Distance, Midpoint, & Circles
Monday	February 27	[2.8] Distance, Midpoint, & Circles; [3.1] Quadratic Functions
Wednesday	March 1	[3.1] Quadratic Functions; [3.3] Synthetic Division; [3.2] Polynomial Functions & Their Graphs;
Monday	March 6	[3.2] Polynomial Functions & Their Graphs; [3.4] Roots of Polynomials;
Wednesday	March 8	[3.5] Rational Functions & Their Graphs
Monday	March13	**Spring Break**
Wednesday	March15	**Spring Break**
Monday	March 20	[3.5] Rational Functions & Their Graphs; **Exam2 Review**
Wednesday	March 22	**Exam2**
Monday	March 27	[3.5] Rational Functions & Their Graphs; [4.1] Exponential Functions
Wednesday	March 29	[4.1] Exponential Functions, [4.2] Logarithmic Functions
Monday	April 3	[4.3] Properties of Logarithms; [4.4] Exponential & Logarithmic Equations
Wednesday	April 5	[5.1] 2x2 Systems; [5.2] 3x3 Systems
Monday	April 10	[5.2] 3x3 Systems; [5.4] Nonlinear Systems
Wednesday	April 12	[5.5] Systems of Inequalities; [6.1] Matrix Solutions to Systems;
Wednesday	April 19	[6.1] Matrix Solutions to Systems; **Exam3 Review**
Monday	April 24	**Exam3**
Wednesday	April 26	[6.5] Determinants & Cramer's Rule; [8.5] The Binomial Theorem;
Monday	May1	[8.5] The Binomial Theorem; **Review for Final Exam**
Wednesday	May3	**Review for Final Exam : Part2**
Wednesday	May 10	**Final Exam** : 5:30pm-7:30pm

Note that this calendar is subject to change. If the date of an exam has to be changed, the instructor will notify you about it as soon as possible.