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

**Instructor:** Karol Albus
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**Office hours:**  Monday: 3:00-4:30, Tuesday: 10:00-11;00, Wednesday: 9:30-10:00, Thursday: 10:00-11:00, Friday: 8:00-12:00 Other times by appointment.

**Disclaimer:**  The instructor reserves the right to alter any class policies/dates as deemed necessary by the instructor, and will announce any changes in class.

***Please check your email regularly as it is they only way I have to contact you outside of class.***

**Course Description: MATH 1314 - College Algebra (3:3:1)** 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. Semester Hours: 3, Lecture Hours: 3, Lab Hours: 1. Pre-requisite: Two units of high school algebra or MATH 0320.

**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)

**Textbook:**  The textbook required for this course may be any of the following:
   Blitzer, R. (2007). College Algebra, 6th ed. New Jersey: Pearson Prentice Hall. ISBN 0-321-78228-1.
   Blitzer, R. (2010). College Algebra, 5th ed. New Jersey: Pearson Prentice Hall. ISBN 0-321-55983-5.
   Blitzer, R. (2010). College Algebra, 4th ed. New Jersey: Pearson Prentice Hall. ISBN 0-13-219141-5

**Supplies:**  You will need a 3 ring binder (1.5 inch), dividers, paper, graph paper, hole punch, textbook, pencils, and erasers.  **You will be allowed the use of a scientific calculator most of the time.  However, it will be restricted on some days. You may NOT use your cell phone/iPad as your calculator, TI-89, TI-92 or TI-Nspire.**  These are pretty basic supplies, but you will need to bring them to each class.  I require pencil on all graded work.  You will have one warning, and after that, you will earn a zero on that work because you failed to follow my instruction.

**Assignment Policy:**  Homework will be assigned at each class meeting.  The homework is not a tool by which I torture you, but rather an opportunity for you to practice the skills presented in class which you will be responsible to demonstrate on a quiz the following class period.  If you are interested in passing the class, you will need to do well on the quizzes.  To do well on the quizzes, you will need to complete the homework.  **No late assignments will be accepted.** You should show all work when doing homework.  Simply writing the problem and the answer is not "doing homework."  Using a solutions manual or an app that shows you the steps, and copying them down is NOT "doing homework." **Remember your effort is key to your success.  You have to focus your effort on being able to complete the problems on a quiz/exam without any outside resources.**

Some days you will turn in your homework when you take a quiz. 50% of your grade will be from the homework and 50% from the quiz. 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.

**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. Leaving early and being tardy will be considered ½ absence. **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 five absences (for any reason) throughout the semester.** If you should incur an absence, please refer to your syllabus, contact the instructor, or contact another student to get the assignment completed BEFORE the next class. **Late homework and makeup quizzes are not an option.** Make ups for **Exams** will only be provided under extreme, documented circumstances. If at all possible, the instructor should be notified prior to the exam day.

**Grading:** Daily work (homework, quizzes, notebook) will count for 16% of the final grade, while all exams count for 80% of the final grade. Expect four major exams (16% each) throughout the course and a cumulative final exam (20%) at the end of the course. **Remember that no late or makeup work will be accepted. If you are not in class you will earn a grade of 0 for homework/quiz on that day.** 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%).

**Grade Reporting:** Grades will be posted on blackboard. If you think I have recorded a grade incorrectly, please notify me immediately. I keep a hard copy of my grades and will be glad to check it.

**Phones and other electronics:** All electronic devices are inappropriate. Suspected use will earn you a zero for that day's quiz or homework. If you use an electronic device (cell phone, iPad, iPod, headphones) during an exam, you will earn a zero on the exam and may be dropped from the course. Please do not use a phone or iPad as your book or calculator.

**Test days:** Test days are very serious days. **Once you begin the exam, you will not be allowed to leave the classroom until the exam is submitted for grading**. Use the restroom before class. Use of electronics during an exam earns you a zero on the exam and possible dismissal from the course.

**Where to Get Help:**
- Me! – My office hours are listed at the top of this syllabus. I am also available at some other times by appointment. Email is a great way to contact me – much faster than phone calls and messages. Sometimes I can help on email if you will send a photo of the problem you are doing. Even if I am not in the office, I can work the problem, take a photo and send back. You CANNOT ask for #35 – I won't have my book with me.
- Free tutoring and video tapes are available in M116 on the Levelland campus. The hours for tutors are posted by that door. Digital versions of the videos are available on YouTube. I will post the links to these videos on Blackboard. Occasionally I will post helpful items on blackboard such as solution sets. **If you are not familiar with Blackboard, you should become familiar**. 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)
- Your book is a great resource and it is already purchased!
- You can also seek videos from www.patrickjmt.com and www.khanacademy.org or others.
- **I also strongly recommend forming study groups so that you can work with others. Networking is an essential tool both in the classroom and in the workforce.**

*You should expect to spend as much time outside of class as you do in class practicing homework problems and studying. The goal is for you to acquire the skills necessary to be successful in your next MATH course. I WILL NOT send you to the next course if you cannot demonstrate that you have those skills.*

**Academic Honesty:** You are expected to uphold the ideals of academic honesty. All work that is graded must be your own. This policy applies to all work attempted in this course. If this policy is violated the student will receive an F for the assignment and will be dropped with an F. For more details on what is considered cheating, see the South Plains College catalog.

**Diversity Statement:** 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. (copied from current South Plains College Faculty Handbook)

**Disabilities Statement:** 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, sexual orientation, disability, or age.

**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

**College Algebra Tentative Course Outline**
MATH 1314.002 (MW 10:00-11:45) MATH 1314.007 (MW 1:00-2:45)
Fall 2016

| Week | Day | Date | Lesson / Tentative Assignment |
|---|---|---|---|
| 1 | Mon | Aug 29 | Assignment 1: [1.2] Linear & Rational Equations |
| | Wed | Sept 1 | Assignment 2: [1.3] Linear Applications |
| 2 | Mon | Sept 5 | Labor Day |
| | Wed | Sept 7 | Assignment 3: [1.4] Complex Numbers; [1.5] Quadratic Equations Part 1 of 2 |
| 3 | Mon | Sept 12 | Assignment 4: [1.5] Quadratic Equations Part 2 of 2 |
| | Wed | Sept 14 | Assignment 5: [1.6] Other Types of Equations |
| 4 | Mon | Sept 19 | Assignment 6: [1.7] Linear & Absolute Value Inequalities & Review |
| | Wed | Sept 21 | **Exam 1 (16%)** |
| 5 | Mon | Sept 26 | Assignment 7: [2.1 & 2.2] Functions and Their Graphs |
| | Wed | Sept 28 | Assignment 8: [2.3 & 2.4] Linear Functions and Slope |
| 6 | Mon | Oct 3 | Assignment 9: [2.8] Distance, Midpoint, & Circles, [2.6] Combinations of Functions |
| | Wed | Oct 5 | Assignment 10: [2.6] Composite Functions, [2.7] Inverse Functions |
| 7 | Mon | Oct 10 | Assignment 11: [3.1] Quadratic Functions; [3.3] Synthetic Division |
| | Wed | Oct 12 | **Exam 2 (16%)** |
| | Fri | Oct 14 | *Fall Break* |
| 8 | Mon | Oct 17 | Assignment 12: [3.2] Polynomial Functions & Their Graphs, [3.4] Roots of Polynomials |
| | Wed | Oct 19 | Assignment 13: [3.5] Rational Functions & Their Graphs |
| 9 | Mon | Oct 24 | Assignment 14: [3.6] Polynomial & Rational Inequalities |
| | Wed | Oct 26 | Assignment 15: [4.1] Exponential Functions; [4.2] Logarithmic Functions |
| 10 | Mon | Oct 31 | Assignment 16: [4.3] Properties of Logarithms |
| | Wed | Nov 2 | Assignment 17: [4.4] Exponential & Logarithmic Equations |
| 11 | Mon | Nov 7 | Assignment 18: Chapters 3 & 4 |
| | Wed | Nov 9 | **Exam 3 (16%)** |
| | Thurs | Nov 10 | *Spring Registration Opens* |
| | Fri | Nov 11 | *Advising Day for Math, CS and Engineering Majors* |
| 12 | Mon | Nov 14 | Assignment 19: [5.1] 2x2 Systems; [5.2] 3x3 Systems |
| | Wed | Nov 16 | Assignment 20: [5.4] Nonlinear Systems; [5.5] Systems of Inequalities |
| | Thurs | Nov 17 | *Last Day to Drop a Course* |
| 13 | Mon | Nov 21 | Assignment 21: [6.1] Matrix Solutions to Systems |
| | Wed | Nov 23 | Thanksgiving Holiday |
| 14 | Mon | Nov 28 | Assignment 22: [6.5] Determinants & Cramer's Rule |
| | Wed | Nov 30 | **Exam 4 (16%)** |
| 15 | Mon | Dec 5 | Assignment 23: [8.5] The Binomial Theorem |
| | Wed | Dec 7 | Comprehensive Review |
| 16 | Mon | Dec 12 | **Final Exam (20%)** MATH 1314.002 10:15-12:15 MATH 1314.007 1:00-3:00 |

**College Algebra Tentative Course Outline**
MATH 1314.012 (T/Th 11:00-12:45)
Fall 2016

| Week | Day | Date | Lesson / Tentative Assignment |
|---|---|---|---|
| 1 | Tues | Aug 30 | Assignment 1: [1.2] Linear & Rational Equations |
| | Thurs | Sept 1 | Assignment 2: [1.3] Linear Applications |
| 2 | Tues | Sept 6 | Labor Day |
| | Thurs | Sept 8 | Assignment 3: [1.4] Complex Numbers; [1.5] Quadratic Equations Part 1 of 2 |
| 3 | Tues | Sept 13 | Assignment 4: [1.5] Quadratic Equations Part 2 of 2 |
| | Thurs | Sept 15 | Assignment 5: [1.6] Other Types of Equations |
| 4 | Tues | Sept. 20 | Assignment 6: [1.7] Linear & Absolute Value Inequalities & Review |
| | Thurs | Sept 22 | **Exam 1 (16%)** |
| 5 | Tues | Sept 27 | Assignment 7: [2.1 & 2.2] Functions and Their Graphs |
| | Thurs | Sept 29 | Assignment 8: [2.3], [2.4] Linear Functions and Slope |
| 6 | Tues | Oct 4 | Assignment 9: [2.8] Distance, Midpoint, & Circles, [2.6] Combinations of Functions |
| | Thurs | Oct 6 | Assignment 10: [2.6] Composite Functions, [2.7] Inverse Functions |
| 7 | Tues | Oct 11 | Assignment 11: [3.1] Quadratic Functions; [3.3] Synthetic Division |
| | Thurs | Oct 13 | **Exam 2 (16%)** |
| | Fri | Oct 14 | *Fall Break* |
| 8 | Tues | Oct 18 | Assignment 12: [3.2] Polynomial Functions & Their Graphs, [3.4] Roots of Polynomials |
| | Thurs | Oct 20 | Assignment 13: [3.5] Rational Functions & Their Graphs |
| 9 | Tues | Oct 25 | Assignment 14: [3.6] Polynomial & Rational Inequalities |
| | Thurs | Oct 27 | Assignment 15: [4.1] Exponential Functions; [4.2] Logarithmic Functions |
| 10 | Tues | Nov 1 | Assignment 16: [4.3] Properties of Logarithms |
| | Thurs | Nov 3 | Assignment 17: [4.4] Exponential & Logarithmic Equations |
| 11 | Tues | Nov 8 | Assignment 18: Chapters 3 & 4 |
| | Thurs | Nov 10 | **Exam 3 (16%)** |
| | Thurs | Nov 10 | *Spring Registration Opens* |
| | Fri | Nov 11 | *Advising Day for Math, CS and Engineering Majors* |
| 12 | Tues | Nov 15 | Assignment 19: [5.1] 2x2 Systems; [5.2] 3x3 Systems |
| | Thurs | Nov 17 | Assignment 20: [5.4] Nonlinear Systems; [5.5] Systems of Inequalities |
| | Thurs | Nov 17 | *Last Day to Drop a Course* |
| 13 | Tues | Nov 22 | Assignment 21: [6.1] Matrix Solutions to Systems |
| | Thurs | Nov 24 | Thanksgiving Holiday |
| 14 | Tues | Nov 29 | Assignment 22: [6.5] Determinants & Cramer's Rule |
| | Thurs | Dec 1 | **Exam 4 (16%)** |
| 15 | Tues | Dec 6 | Assignment 23: [8.5] The Binomial Theorem |
| | Thurs | Dec 8 | Comprehensive Review |
| 16 | Tues | Dec 13 | **Final Exam (20%)** 10:15-12:15 |