



Course Syllabus – College Algebra

MATH 1314.202 – Spring 2018

Department: Mathematics and Engineering

Instructor: Denise Johansen

Discipline: Mathematics

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Course Number: Math 1314

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Course Title: College Algebra

Email: djohansen@southplainscollege.edu

Credit: 3 **Lecture:** 3 **Lab:** 1

Time/Place: MW 11am-12:45pm/RC 221

Office Hours: MTWR 8-8:30am and 10:30am-11am, TR 2:30pm-4pm, F 9am-12pm, or by appointment

This course satisfies a core curriculum requirement: Yes – mathematics

Prerequisites: 2 years of high school algebra or Math 0320, TSI compliance

Available Formats: conventional/internet/ITV

Campuses: Levelland Campus, Reese Campus, Plainview, Byron Martin ATC Lubbock

Textbook: **College Algebra**, Blitzer. (2018). College Algebra, 7th ed . Pearson. ISBN-13: 9780134469164.

Supplies: calculator with a log function, MyMathLab access (Course ID: **Johansen41738**).

Course Description: A standard course in college algebra. Quadratic equations; ratio and proportion; variation; binomial theorem; inequalities; complex numbers; theory of equations; determinants and matrices.

Course Purpose/Rationale/Goal: The purpose of the course is to provide a fundamental background in algebra to meet the mathematics requirement for the core curriculum and to provide a basis for further study in mathematics.

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Course Requirements: To maximize the potential to complete this course, a student should attend all class and laboratory meetings, take notes and participate in class, complete all homework assignments and examinations including final examinations.

Course Evaluation:

- There will be in-class assignments collected daily. By their very nature, in-class assignments can NOT be made up. The in-class average is worth 10% of your grade, and the lowest 2 in-class grades will be dropped.
- Daily online homework assignments will be due weekly, before class on Mondays. Late homework will be accepted with 10% per day late submission penalty! The homework average is worth 10% of your grade, and the lowest 3 homework grades will be dropped.
- Daily pre-class assignments will be posted and due before each lecture. Late pre-class assignments will be accepted with 10% per day late submission penalty! The pre-class average is worth 5% of your grade.
- There will be 6 online Quizzes to be **completed on your own and without references**. Quizzes are due before class on the Monday after a chapter is completed. Late quizzes will be accepted with 10% per day late submission penalty! The Quiz Average is worth 10% of your grade, and the lowest quiz grade will be dropped.
- There will be 3 in-class exams. These will each be worth 15% of your grade. If an exam is missed for a legitimate reason, a makeup exam may be given. It is your responsibility to contact me to schedule a makeup exam.
- There will be 1 in-class cumulative final exam on **Monday, May 7th from 10:15am-12:15pm**, worth 20% of your grade.

Letter Grades:

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| 90% - 100% | A |
| 80% - 89% | B |
| 70% - 79% | C |
| 60% - 69% | D |
| 59% & below | F |

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.

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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

Attendance Policy: Students are expected to attend all classes in order to be successful in a course. The student may be administratively withdrawn from the course when absences become excessive as defined in the course syllabus. ***[Absences for this course are considered excessive if you have 4 in a row or a total of 8. If you reach 4 consecutive absences or a total of 8 absences, you will be administratively withdrawn from the class with a grade of 'X' or 'F'.]***

When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed. It is the student's responsibility to complete work missed within a reasonable period of time as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first class meeting.

Students who enroll in a course but have "Never Attended" by the official census date, as reported by the faculty member, will be administratively dropped by the Office of Admissions and Records. A student who does not meet the attendance requirements of a class as stated in the course syllabus and does not officially withdraw from that course by the official census date of the semester, may be administratively withdrawn from that course and receive a grade of "X" or "F" as

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determined by the instructor. Instructors are responsible for clearly stating their administrative drop policy in the course syllabus, and it is the student's responsibility to be aware of that policy.

It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.

Last day to drop is Thursday, April 26th.

SPC School Holidays:

Monday, 1/15, Martin Luther King Holiday

Monday-Friday, 3/12-3/16, Spring Break

Monday, 4/2, Easter Holiday

Academic Integrity: It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. The attempt of any student to present as his or her own any work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension.

Cheating: Dishonesty of any kind on examinations or on written assignments, illegal possession of examinations, the use of unauthorized notes during an examination, obtaining information during an examination from the textbook or from the examination paper of another student, assisting others to cheat, alteration of grade records, illegal entry or unauthorized presence in an office are examples of cheating. Complete honesty is required of the student in the presentation of any and all phases of course work. This applies to quizzes of whatever length, as well as to final examinations, to daily reports and to term papers.

Dress Code: Reasonable standards of decency apply to the college community. The student should dress in a manner which does not distract from the academic atmosphere. Revealing attire or clothing carrying obscene or offensive slogans is not permitted. In all academic buildings, classrooms, offices, the Student Center, and dining facilities, students are required to wear shirts and shoes.

Language: Please be respectful of others and use language that is appropriate to the workplace.

Cellphones: To limit disruptions to the class and distractions to yourself, please put your cellphone on silent mode or airplane mode. If you feel a call is an emergency that you must answer, please take the phone out in the hall before answering to minimize the disruption to the class. If you feel you must leave class, please do so as quietly as possible.

Campus Carry: South Plains College permits the lawful carry of concealed handguns in accordance with Texas state law, and Texas Senate Bill 11. Individuals possessing a valid

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License to Carry permit, or the formerly issued Concealed Handgun License, may carry a concealed handgun at all campus locations except for the following:

- Natatorium

For a complete list of campus carry exclusions zones by event, please visit <http://www.southplainscollege.edu/campuscarry.php>

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.

Disability 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 Special 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 Special Services Coordinator. For more information, call or visit the Special Services Office in the Student Services Building, 716-2529 or 716-2530.

COURSE OUTLINE / CALENDAR*

Problems are assigned online for each section of the textbook that we cover. To access online assignments, you must have an access code (you can buy a code for MyMathLab bundled with your textbook or you can buy just the code at www.mymathlab.com) and register for our course (Course ID: **johansen41738**) at www.mymathlab.com. Assignments have due dates, and you will lose 10% per day for work completed after the due date passes. To master the material and prepare for the exams, you **MUST** work extra problems!

* Assignments and deadlines are subject to change at instructor's discretion, and all changes will be announced in class and posted in MyMathLab.

| Date | Content | Required Readings |
|----------------------------|--|---------------------------------------|
| Week 1 1/15 1/17 | Syllabus & Assessment <ul style="list-style-type: none">• Martin Luther King, Jr. Holiday – No Class!• Syllabus Overview and Readiness Assessment | Readings N/A |
| Week 2 1/22 1/24 | Equations and Inequalities (Part 1) <ul style="list-style-type: none">• Linear Equations and Rational Equations• Models and Applications• Complex Numbers• Quadratic Equations | Readings Chapter 1: 1.2-1.5 |

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| Week 3 1/29 1/31 | Equations and Inequalities (Part 2) <ul style="list-style-type: none"> • Other Types of Equations • Linear Inequalities and Absolute Value Inequalities | Readings Chapter 1: 1.6-1.7 |
| Week 4 2/5 2/7 | Functions and Graphs (Part 1) <ul style="list-style-type: none"> • Basics of Functions and Their Graphs • Linear Functions and Slope • More on Slope | Readings Quiz 1 Due (Chapter 1) Chapter 2: 2.1, 2.3-2.4 |
| Week 5 2/12 2/14 | Functions and Graphs (Part 2) <ul style="list-style-type: none"> • Transformations of Functions • Combinations of Functions; Composite Functions • Review for Exam I | Readings Chapter 2: 2.5-2.6 |
| Week 6 2/19 2/21 | Exam I & Polynomial and Rational Functions (Part 1) <ul style="list-style-type: none"> • Exam I (Chapters 1 & 2) • Quadratic Functions • Polynomial Functions and Their Graphs | Readings Quiz 2 Due (Chapter 2) Chapter 3: 3.1-3.2 |
| Week 7 2/26 2/28 | Polynomial and Rational Functions (Part 2) <ul style="list-style-type: none"> • Dividing Polynomials; Remainder and Factor Theorems • Zeros of Polynomial Functions | Readings Chapter 3: 3.3-3.4 |
| Week 8 3/5 3/7 | Polynomial and Rational Functions (Part 3) <ul style="list-style-type: none"> • Rational Functions and Their Graphs • Polynomial and Rational Inequalities | Readings Chapter 3: 3.5-3.6 |
| 3/12-16 | Spring Break – No Classes! | |
| Week 9 3/19 3/21 | Exponential and Logarithmic Functions (Part 1) <ul style="list-style-type: none"> • Exponential Functions • Logarithmic Functions • Properties of Logarithms | Readings Quiz 3 Due (Chapter 3) Chapter 4: 4.1-4.3 |
| Week 10 3/26 3/28 | Exponential and Logarithmic Functions (Part 2) & Review for Exam II <ul style="list-style-type: none"> • Exponential and Logarithmic Equations • Exponential Growth and Decay; Modeling Data • Review for Exam II | Readings Chapter 4: 4.4-4.5 |

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| Week 11 4/2 4/4 | Exam II <ul style="list-style-type: none"> • Easter Holiday – No Classes! • Exam II (Chapters 3 & 4) | <u>Readings</u> Quiz 4 Due (Chapter 4) |
| Week 12 4/9 4/11 | Systems of Equations and Inequalities <ul style="list-style-type: none"> • Systems of Linear Equations in Two Variables • Systems of Linear Equations in Three Variables • Systems of Nonlinear Equations in Two Variables • Systems of Inequalities | <u>Readings</u> Chapter 5: 5.1-5.2, 5.4-5.5 |
| Week 13 4/16 4/18 | Matrices and Determinants (Part II) <ul style="list-style-type: none"> • Matrix Solutions to Linear Systems • Inconsistent and Dependent Systems and Their Applications • Determinants and Cramer's Rule | <u>Readings</u> Quiz 5 Due (Chapter 5) Chapter 6: 6.1-6.2, 6.5 |
| Week 14 4/23 4/25 | Review for Exam III & Exam III <ul style="list-style-type: none"> • Review for Exam III • Exam III (Chapters 5 & 6) | <u>Readings</u> Quiz 6 Due (Chapter 6) |
| Week 15 4/30 5/2 | The Binomial Theorem & Review for Final Exam <ul style="list-style-type: none"> • The Binomial Theorem • Review for Final Exam | <u>Readings</u> Chapter 8: 8.5 |
| Week 16 5/7 | Final Exam <ul style="list-style-type: none"> • Final Exam, 10:15am-12:15pm | |

* Assignments and deadlines are subject to change at instructor's discretion, and all changes will be announced in class and posted in MyMathLab.