General Course Syllabus

Department: Mathematics and Engineering

Discipline: Mathematics

Course Number: Math 1314

Course Title: College Algebra

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

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*, 5th edition, Blitzer, Pearson-Prentice Hall, 2010

Supplies: calculator with a log function, the course may include online supplemental instruction. Please see the instructor's course information sheet for more on this.

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/Rational/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.

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 OUTCOMES: Upon completion of this course and receiving a passing grade, the student will master at least 70% of the course objectives. To complete these objectives, the students must already be prepared factor algebraic expressions, reduce, add, subtract, multiply, divide, and simplify rational expressions, and simplify, add, subtract, multiply and divide exponential and radical expressions. The course objectives the student will be able to meet are:

1. Solve and graph:
   a. linear functions;
      i. Section 1.2, Part I: "Linear Equations"
      ii. Section 2.3: "Linear Functions and Slope"
      iii. Section 2.4: "More on Slope"
   b. quadratic functions;
      i. Section 1.5: "Quadratic Equations"
      ii. Section 3.1: "Quadratic Functions"
   c. logarithmic and exponential functions;
      i. Section 4.1: "Exponential Functions"
      ii. Section 4.2: "Logarithmic Functions"
      iii. Follow-up—Section 4.3: "Properties of Logarithms"
      iv. Section 4.4: "Exponential and Logarithmic Equations"
2. Solve and graph:
   a. linear inequalities (Section 1.7, Part I: "Linear Inequalities");
   b. quadratic/polynomial inequalities (Section 3.6, Part I: "Polynomial Inequalities");
   c. rational inequalities (Section 3.6, Part II: "Rational Inequalities");
3. Identify and simplify complex numbers (Section 1.4: "Complex Numbers").
4. Apply distance, midpoint, and circle formulas (Section 2.8: "Distance and Midpoint Formulas; Circles").
5. Analyze and graph polynomial functions.
   a. Section 1.6, Part I: "Polynomial Equations"
   b. Section 3.2: "Polynomial Functions and Their Graphs"
   c. Section 3.3: "Dividing Polynomials; Remainder and Factor Theorems"
   d. Section 3.4: "Zeros of Polynomials"
6. Analyze and graph rational functions.
   a. Section 1.2, Part II: "Rational Equations"
   b. Section 3.5: "Rational Functions and Their Graphs"

7. Find the solutions for systems of equations and systems of inequalities by using one or more of the following techniques:
   a. Algebraic Techniques
      i. Section 5.1: "Systems of Linear Equations in Two Variables"
      ii. Section 5.2: "Systems of Linear Equations in Three Variables"
      iii. Section 5.5: "Systems of Inequalities"
   b. Matrix Techniques
      i. Section 6.1: "Matrix Solutions to Linear Systems"
      ii. Section 6.2: "Inconsistent and Dependent Systems"
   c. Determinants (Section 6.5: "Determinants and Cramer's Rule")
8. Expand a binomial raised to an integral power (Section 8.5: "The Binomial Theorem").

*Developed by the Coordinating Board and the Faculty of South Plains College's Math and Engineering Department.

Section: 005—MW, 12:30-2:15 p.m.

Room: Levelland Math Bldg., Room 124

Instructor: Mr. Robert E. Plant, II, M.S.

Office Info: Room—Levelland Math Bldg. 116B
Phone—(806) 716-2734
Hours—the following table will display the regular office hours.

Monday	Tuesday	Wednesday	Thursday	Friday
2:30-4:30 p.m.	*9:30-11:00 a.m.*	*None Scheduled*	*9:30-11:00 a.m.*	*9:00 a.m.-Noon*
OR BY APPOINTMENT				

E-mail: rplant@southplainscollege.edu

O.P.I.*:   This syllabus is © 2010 by Mr. Robert E. Plant, II
* O.P. I. means "other pertinent information," or in layman terms, "something else that you need to know."

Tutoring: Free tutoring is available in room 116 of the Mathematics-Engineering Building, at the Reese Center campus in room RC256 and in Building 8, and at the Byron Martin ATC in Lubbock (34th and Avenue Q). (Please remember to sign in when you seek the help of a tutor in each of these places.)
Videotapes for this course are also available. Students are encouraged to view these tapes in room 116 or check them out.
Also, online access to these tapes is available through WebCT (Username: mvideos, Password: mvideos).

"True knowledge exists in knowing that you know nothing."

—Socrates

Fundamental Principles of Mathematics

Mathematics is built upon two fundamental principles—pattern recognition and problem solving. Students must become able to recognize patterns in order to solve *types* of problems. Too often have I observed students hang a majority of time up on each specific problem, so it is my mission as your instructor to emphasize that there are sets of problems within the homework (HW) assigned that require ***one concept or skill to solve all problems in each set!*** It is the ultimate objective of this and any other mathematics course to enable you as the student to become proficient in both of these areas. But until you have reached the point of mastery in both, I submit to you a paraphrase of a quote taken from Tupac Shakur: **"All eyes on me!"**

Guide to Being Successful in This Course

In order for YOU the student to be successful at this or any other level of higher education, YOU must be aware of one very important aspect: student accountability. I as the instructor am accountable for aiding in your success by properly presenting the mathematical concepts of this course, as well as any real-world applications, in a manner that allows for the general group of students to display understanding of said information. YOU as the student are accountable for your success by putting forth the effort necessary to gain such understanding. This is achieved by completing all assignments using the information that I have presented in the lecture and by asking questions regarding any concepts that are not understood. If YOU fail to do what is required in this course, then YOU will be responsible for the just grade that is received.

Guide to Solving Mathematical Problems

When solving a mathematical problem, the following questions must be answered:

Q1. **What *known* information does the problem give me?**
A1. You will be shown, through examples given by the instructor, how to list the known information of the problem. Use this process unless a more suitable one is known by you. Spare no details until you have *mastered* this concept of setting up the problem. Once you have done so, then you can afford to spare some of the details.

Q2. **What information given in the problem do I *not know*, and how do I *find* it?**
A2. In this course, you will deal with problems that have unknown information which must be found. Most of these problems will have one unknown; however, there will be a few that will have two, which is the ***maximum*** number of unknowns that will be examined for any problem. The instructor will show you the procedures necessary for finding these unknowns.

Q3. **When is the problem solved or completed?**
A3. The problem will be solved or completed ***when there is no unknown information remaining***. Each section covered in this course will have problem exercises that are designed to reinforce the concept(s) of the section, and there will be more than one problem assigned per concept (unless otherwise stated by the instructor at the time of assignment).

Expectations of the Student for the Instructor

The student is within all rights to expect that the instructor do the following:
➢ Show up, as scheduled, to teach all information pertaining to the course.
➢ Provide notice of any schedule changes.
➢ Maximize the time allotted for this course by assessing student aptitude of covered information at the close of each lecture, when time permits.
➢ Present the material in a manner that can generally be understood by the majority of the class.
➢ Be accessible to those who need assistance outside of the classroom setting, by way of e-mail or in person, during office hours or reasonably scheduled appointment times.
➢ Hold to any assignment(s) given during the course of the semester unless removed.
➢ Uphold the policies of the college as it pertains to the student's welfare in the course.
➢ Not make any exceptions regarding the dismissal of any student from the course for reasons listed herein.
➢ Allow each student the opportunity to discuss the material presented during the lecture period.
➢ Provide examinations based on the information discussed in class that contain problems which use solving methods *similar* to those assigned from sections pertaining to the exam.

Have you ever been here…

…or here?

Expectations of the Instructor for the Student

The instructor is within all rights to expect that the student do the following:

➢ Show up, as scheduled, to receive and learn all information pertinent to the course and be mindful of any schedule changes. Four absences, *for any reason*, are allotted to you for the semester. If this number is exceeded, I have the right to drop you with a grade of F.

➢ You can seek temporary re-instatement after being withdrawn, but you must withdraw yourself from the course via the registrar's office within a week of reinstatement. In the latter case, you will receive a W. *After the week has expired, I have the right to drop you for a final time, after which there will be no reinstatement.*

➢ *THERE WILL BE NO WAITING UNTIL THE END OF THE SEMESTER TO WITHDRAW!* Try this at your own risk and peril…

➢ If you are going to INITIALLY withdraw from this course, then *all initial withdrawals must be done by* **4/26/2011.** There will be no withdrawals given after this date.

➢ Take advantage of *all* resources available to you. In the collegiate setting, all students are considered to be adults and are expected to uphold conduct worthy of such consideration.

➢ Be willing to work together with—**BUT NOT DO WORK FOR**—fellow classmates. Networking is an essential tool both in the workforce and in the classroom; furthermore, the greater the numbers of minds there are involved, the less mental labor is required for each individual. No man, or woman for that matter, is an island… *except on the exams!*

➢ Be mindful of the classroom setting and the roles therein. While student tuition is vital to the well-being of this academic institution, this does NOT warrant the concession of any instructor to you in a manner that compromises the integrity of the classroom setting and that of the institution itself.

➢ Keep all homework assignments organized. This will prove to be helpful in preparing for the short outcomes quizzes, which are assigned based on the outcomes covered over the duration of the semester. There will be eight (8) such quizzes planned for this course, with each counting as five percent (5%) of your overall grade. This type of assignment cannot me made up or replaced, so be mindful of this in the event of an absence.

➢ *Write all graded work legibly and in* <u>*pencil*</u> *only.* <u>*All*</u> *work not done in pencil will not be accepted by me and will cause you to receive a grade of zero percent (0%) for the work in question.*

➢ Turn all electronic devices *off* that have no use in the classroom setting. This means all music players, cellular telephones (or cell phones), pagers, etc. In the event that a cell phone must be on (family emergencies only), then the phone must be put on vibrate mode and placed on your desk. If an unsanctioned device is in use during an exam, then its grade will be zero percent (0%).

➢ Bring all materials needed for the course and refrain from bringing anything that is not needed. This allows you to pay attention to the subject matter only and shows me that you are prepared to learn.

➢ Obtain all missed information and assignments from a fellow classmate. In the spirit of holding to the course objectives, I will not relay such information unless absolutely necessary—this means that *if there is no documented reason for missing the information, then find your peers, not me*.

➢ READ THE SYLLABUS!!!

Grading Policy*

90% or above	A
80-89%	B
70-79%	C
60-69%	D
59% or below	F

Short outcomes quizzes (8):	40% of overall grade; based on prior outcomes covered
In-class examinations (5):	40%; non-cumulative, based on prior outcomes covered
Final examination:	20%; cumulative, covering all outcomes

*All grades are rounded from the first decimal. Borderline grades (those within 2% of the minimum) will be addressed at the instructor's discretion and will be based on the student's compliance with the syllabus. Homework will not be assigned for a grade, but will indirectly affect the grade in the form of the outcomes quizzes and exams. Upon the submission of grades at the end of the semester, **ALL GRADES ARE FINAL!**

Holiday/Travel Statement

If you the student have pre-existing plans to travel out of the area during scheduled class times, you must inform me by **NO LATER THAN Thursday, February 10, 2011**. Failure to do so will result in the forfeiture of any assignments that will come into question during your dates of absence. These assignments will not be replaced or allowed for make-up work.

Final Examination Policy

There will be a final examination for this course. ***All students are required to take this exam at the appointed time listed herein unless the above statement applies.*** Also, due to the insurance of outcomes assessment, there will be no exemption from the final exam for this course. ***If any exam is missed, then the final will replace only one such exam upon the instructor being notified before the exam is scheduled.*** All other exams missed will receive a 0% grade or be handled at the instructor's discretion.

Who loves fractions?

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Equal Opportunity, Disability, and Diversity Statements

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. **Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this calls 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 Service Coordinator. For more information, call or visit the Special Services Office in the Student Services Building, 894-9611 ext. 2529, 2530.**
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.

The "Course Fishing" Rule

This rule has been implemented for the Fall Semester of 2007 and is effective hereafter. As per House Bill 116 (Senate Bill 1231) of the Texas legislature, *all* students will be limited to a total of six (6) mid-semester withdrawals for their entire undergraduate academic career. A mid-semester withdrawal is one that occurs after the twelfth (12th) class day and is noted on the student's transcript as a "W", and upon the student receiving the sixth W, all future attempts to withdraw from a course mid-semester will be denied. As a result, a terminal course grade (A, B, C, D, or F) will be issued for the course in question. This does not include any withdrawals acquired by the student before the Fall Semester of 2007, so the count for each student under this rule is currently zero (0). **BE SURE OF YOUR INTENTIONS TO FINISH OUT THE COURSE BEFORE CONTINUING!**

Mr. Robert E. Plant, II
SPRING 2011 LECTURE CALENDAR
MATH 1314

Week (Dates)	Week Day 1	Week Day 2
1 (1/17/11 to 1/20/11)	**MLK Holiday**	2.1
2 (1/24/11 to 1/27/11)	2.2	1.2 (Part I); Outcomes Quiz 1
3 (1/31/11 to 2/3/11)	2.3; 2.4	Outcomes Quiz 2; Exam 1 Summary
4 (2/7/11 to 2/10/11)	**Exam 1**	1.4, 1.5
5 (2/14/11 to 2/17/11)	3.1	2.8; Outcomes Quiz 3
6 (2/21/11to 2/24/11)	**Exam 2**	8.5
7 (2/28/11 to 3/3/11)	1.6 (Part I)	3.2; Outcomes Quiz 4
8 (3/7/11 to 3/10/11)	3.3	3.4; Outcomes Quiz 5
9 (3/14/11 to 3/17/11)	**Spring Break Period**	
10 (3/21/11 to 3/24/11)	**Exam 3**	1.2 (Part II), 3.5
11 (3/28/11 to 3/31/11)	3.6	4.1
12 (4/4/11 to 4/7/11)	4.2, 4.3; Outcomes Quiz 6	4.4
13 (4/11/11 to 4/14/11)	**Exam 4**	5.1, 5.2
14 (4/18/11 to 4/21/11)	1.7, 5.5; Outcomes Quiz 7	6.1, 6.2
15 (4/25/11 to 4/28/11)	**Spring Holiday**	6.5; Outcomes Quiz 8
16 (5/2/11 to 5/5/11)	**Exam 5**	Final Exam Summary
17 (5/9/11 to 5/12/11)	**FINAL EXAMINATION SCHEDULE Wednesday, 5/11, 10:15 a.m.–12:15 p.m. ORIGINAL CLASSROOM**	

Mr. Robert E. Plant, II
TENTATIVE HOMEWORK CALENDAR
MATH 1314

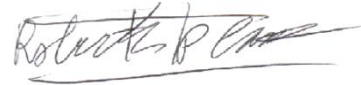| Week (Dates)	Week Day 1	Week Day 2
1 (1/17/11 to 1/20/11)	**MLK Holiday**	2.1 (ALL to #92)
2 (1/24/11 to 1/27/11)	2.2 (ALL to #76)	1.2 (ALL to #30)
3 (1/31/11 to 2/3/11)	2.3 (ALL to #72); 2.4 (ALL to #24)	Exam 1 Summary
4 (2/7/11 to 2/10/11)	**Exam 1**	1.4 (ALL to #50) 1.5 (ALL to #120)
5 (2/14/11 to 2/17/11)	3.1 (ALL to #56)	2.8 (ALL to #70)
6 (2/21/11to 2/24/11)	**Exam 2**	8.5 (ALL to #48)
7 (2/28/11 to 3/3/11)	1.6 (ALL to #28)	3.2 (ALL to #72)
8 (3/7/11 to 3/10/11)	3.3 (ALL to #50)	3.4 (ALL to #60)
9 (3/14/11 to 3/17/11)	**Spring Break Period**	
10 (3/21/11 to 3/24/11)	**Exam 3**	1.2 (#31-80) 3.5 (ALL to #64)
11 (3/28/11 to 3/31/11)	3.6 (ALL to #72)	4.1 (ALL to #64)
12 (4/4/11 to 4/7/11)	4.2 (ALL to #112) 4.3 (ALL to #100)	4.4 (ALL to #100)
13 (4/11/11 to 4/14/11)	**Exam 4**	5.1 (ALL to #42) 5.2 (ALL to #22)
14 (4/18/11 to 4/21/11)	1.7 (ALL to #105) 5.5 (ALL to #62)	6.1 (ALL to #44) 6.2 (ALL to #28)
15 (4/25/11 to 4/28/11)	**Spring Holiday**	6.5 (ALL to #40)
16 (5/2/11 to 5/5/11)	**5/3/10: Exam 5**	5/5/10: Final Exam Summary
17 (5/9/11 to 5/12/11)	**FINAL EXAMINATION SCHEDULE** **Wednesday, 5/11, 10:15 a.m.–12:15 p.m.** **ORIGINAL CLASSROOM**	

ACKNOWLEDGMENT OF RECIEPT

       As a student in this course, I hereby acknowledge that I have received, read, and clearly understood the syllabus. Furthermore, I hold myself accountable for adhering to the expectations stated therein. I also acknowledge that it is my duty and responsibility to notify the instructor of all personal situations that affect my standing in this course before any occur. I am fully aware that any breach of said expectations and responsibilities will result in any necessary consequences that the instructor has stated to me through the syllabus, and that any differences of opinion will be discussed with the instructor in a manner befitting of adults. Finally, in the event of a later dispute by me, I will refer to the syllabus and will, by my signature, forfeit any pursuit that is not backed by the syllabus.

_____   _____

Student's Printed Name   Date of Acknowledgment

_____

Student's Signature   Instructor's Signature

Monday & Wednesday Schedule		Tuesday & Thursday Schedule	
Class	**Time**	**Class**	**Time**