**Math 1314 Syllabus**
**College Algebra**
**Summer I 2020 Sul Ross State University**

| | |
|---|---|
| **Secs**. **Z01**, **ZC1**: | Mon, Tue Wed, Thu, Fri: 1-2:30p interactive Zoom lectures |
| **Instructor**: | Dr. Kris Jorgenson |
| **Office**: | ACR 109D |
| **Phone**: | Office: (432) 837-8398 during office hours |
| **E-mail**: | kjorgenson@sulross.edu |
| **Office Hours**: | 2:30-5p and by appointment |

**Zoom Link**:
https://SulRoss.zoom.us/meeting/register/tJEucOusrjouHtE1mgBbEU1molm8-OSfj_gQ

**Course Description**: The prerequisite is Math 0301 or a satisfactory score on a Mathematics Placement Exam. This is a university-level algebra course for students who plan to take calculus. Topics include linear and quadratic equations and functions, inequalities, rectangular graphs, complex numbers, exponential and logarithmic functions, systems of linear equations, matrices and vectors.

**This course satisfies 3 hours of math requirements of the Core Curriculum**.

**Students who are required to take Math 1314 include those planning to take**

(**1**) **Calculus 1** (**Math 2413**, **which has the additional prerequisite of Math 1316**);

(**2**) **Business Calculus** (**Math 1325**);

(**3**) **Foundations of Elementary Mathematics 1** (**Math 2310**);

(**4**) **Computer Science and many other Bachelor of Science Degrees–check with your advisor**.

**Student Learning Objectives** Successful students will demonstrate correct understanding and knowledge of the algebra topics including but not limited to those of the Course Description. Particular emphasis will be placed on the order of operations and the algebra and language of functions. Students will apply concepts and problem-solving methods to different problem-solving situations. Students will demonstrate correct knowledge of the difference between numbers that are in exact form and numbers that are approximate and will be able to report numbers in exact form and with a correct approximation when required. Such numbers are often in the context of other mathematical objects such as a function or algebraic expression. Students will express their solutions clearly in writing and complete sentences when appropriate.

**Necessary Materials**: Textbook: College Algebra: A Concise Approach by Paul Sisson, ISBN (including software bundle): 978-1-935782-04-9. You should either get a hard copy of this textbook with the software for online homework, or just the e-book that comes with the software package. Some of your homework grade will be based on online homework, which I will denote in your class notes as OHW (Online Homework). These problems will be listed in these class notes along with other required homework problems. You should collect the Online Homework problems as

well as the lecture notes HW together in a notebook that you will be able to use during the tests.

Scientific Calculator: There will be some need of a scientific calculator, which has buttons with denotations such as $y^x$, $a^b$, ^, $e^x$, LN, LOG, but use of a calculator will not be a large part of this course. Only a stand-alone (not connected with a phone or computer) calculator may be used on the homework and tests. Appropriate scientific calculators cost usually $8-$50 each. Any graphing calculators (for example the TI-83, TI-84, TI-89 or TI-92) **are not allowed**.

Class Materials and Virtual Attendance: Students are expected to be prepared in every class with pencils and paper in some sort of organized notebook for taking notes of lecture content and examples, and for homework. You are required to be involved in class activities every class day. This will be part of your grade. In this online course, students must be able to join in the daily interactive Zoom meetings. This will require a device such as a computer, cell-phone, or ipad. I will send to the class the Meeting ID prior to the first class meeting. This ID number will be the same throughout the term. The class meetings will be recorded and posted on Blackboard so that you can consult class examples, definitions, or discussion after class if needed. I will post links to these class videos on Blackboard. To receive full Class Study Grade credit, you must be part of the interactive class meeting during the class time 1-2:30 on non-test days.

Blackboard: Also you are required to have access to Blackboard and have an e-mail address that you check regularly be your e-address registered in Bb since I will regularly need to contact you outside of class with important information.

**Grading and Assignments**: The assignments discussed below will help students achieve all of the Learning Objectives mentioned previously through active learning and assessment. Your total grade will break down as follows:

**Daily Grade** (**DG**) is worth **30**% of your total grade and consists of **Class Study Grades** (**CSG**) (**10**%), **Online Homework** (**OHW**) (**10**%), and **lecture notes HW** (**10**%). Every class day after the first class day there will either be either a major test or a CSG. The **Test Average** worth **70**% will be based on 3 unit tests.

Each day students will be told which of the assignments they should be concentrating on to stay up with the lecture notes HW. There are deadlines posted for the Online HW that serve as a guideline to help you keep up with this HW. It is very important that you keep up with all of these homework assignments in your notebook On average, students should make it a goal to complete and understand at least 5-10 homework exercises each day. The homework assignments (which includes the online homework but also the lecture notes HW) will be the basis for the 3 unit tests.

Students should always correct their homework if necessary since this affords an important opportunity for learning the material that will appear on the tests. Making mistakes based on your own work and correcting these mistakes with my help if necessary is a great way to learn mathematics! Every student will be able raise 1 HW grade to 100% before each test by communicating with me and going over the HW to answer any questions you are having.

There will be **3 Unit Tests** each based on the corresponding Unit Assignments. Each of these tests will count in your **test average**. However as a bonus to you, your

highest test grade will count twice. Therefore, you will have 4 test grades in all. Students may use only their notes (no textbook), pencil(s)/eraser(s) and scientific calculator on the tests. You must download and print the test that I send you by e-mail, use your own paper to complete the test (or the paper you use to print the test), then scan or photograph your written work and send these scanned (or photographed) pages back to me. If you cannot print out your test, then write out by hand each test problem with your work using your paper. The dates for the Unit Tests are as follows.

| | |
|---|---|
| **Test 1** | **Tues**, **June 2** |
| **Test 2** | **Mon**, **June 15** |
| **Test 3** | **Fri**, **June 26** |

Each of the test dates above will be preceded by a class day of review (see the tentative course outline on the last page of this syllabus). On the calendar day preceding each test day (after the previous class) I will send to each of you a copy of the test. You will have 24 HOURS to complete the test, so that you will send your written work on a test back to me on one of the test days listed above. We will not meet in a Zoom interactive class on the days of the tests (those dates listed above). For examples, on the day before Test 1, which is Monday June 1 we will have an interactive class during which we will review the Unit 1 material, so have your remaining questions ready to ask me on these review days. Sometime after class, I will send everyone a copy of Test 1. You will need to download and copy (or copy by hand) your test, hand write your work, scan (or photograph) each page of your written work and e-mail this back to me within 24 hours of when I send you your copy of the test. For Test 2, I will send you the test on a Sunday (since the test day is on a Monday), but you will still have 24 hours to complete the test and get your work back to me.

**Smarthinking online tutoring** In Blackboard for this course, there is a link to Smarthinking online tutoring (Alpine campus undergraduate). You may use this to get **24/7 tutoring help on your homework or correct your HW for free**. However you cannot use this service for your tests. Please use this service and print out your tutoring session and bring to me to discuss, so that I may be sure that you are benefitting the most from this free tutoring resource.

**General** (**But Important**) **Policies**

**Late Work**, **Rescheduled Quizzes/Tests** Deadlines are given online for each OHW grade. These are guidelines to help you keep up with the work, but there will be no late penalties for OHW grades except no credit will be given for OHW done after the unit test that covers a particular OHW. For late homework I choose for you to hand in from the lecture notes HW (by scanning and sending to me), often there is a grace period since I normally accept HW until 5 pm on the due date with no penalty, but don't expect more than half credit for HW late beyond this time.

To take a test at a time other than during the scheduled time or to make up a Class

Study Grade, you must notify me of this absence on or before the day missed, and satisfy one of two requirements: either (1) a written medical excuse signed by a medical professional is supplied for the day of the absence, or (2) if your excuse is for a university activity, you must notify me of this authorized absence in writing with your name, the name of your organization and the date(s) of your absence (sending me an e-mail is a good way to do this), and your name must appear on a published explained absence list that I am provided (or verified by a faculty sponsor). Also, you and I must set up a time for you to make up the test within a reasonable time period (not more than 1 or 2 days) before or after the time of the missed grade. Usually I will let you make up a grade according to the above conditions if it is due to another one-time occurrence, such as the care of someone else in your family or a friend, or a work-related excuse as long as you can document your absence and you let me know BY THE DAY OF THE ABSENCE AT THE LATEST. A CSG can also be made up if you follow the above policy.

**Attendance** I will be taking attendance as university policy precludes you from missing 3 weeks or more (5 classes or more of a summer session) for anything other than authorized university activities. To excuse an absence for a university activity, in addition to letting me know of the absence by the day of the absence (as explained previously) you must also spend at least 90 minutes outside of class on this course with me or with a tutor, but they will need to sign a note that documents this made-up time. Also I will allow you to excuse a test day for a documented medical absence as long as you also make up the test with me or in the testing center. If you have 5 or more unexcused absences, I reserve the right to drop you from this class with a grade of 'F', which is university policy.

**Good Advice** Concentrate on learning the material of the course rather than worrying about your grade. Your time is best spent concentrating on the material to be learned in the impending assignments, asking questions, and devoting yourself to activities that will help you learn the material and do better in the course. I will worry about the details of your grade since you doing so does not help you earn a higher grade. But learning the material and doing well on the tests *will* help your grade. **Remember that math is not a spectator sport**, so the more problems you work yourself, the more practice you get, the more confident you will be, and the better you will do in this course. Working on the problems helps you to figure out what your specific questions are. Remember an individual homework or quiz grade may not count for a lot in your overall grade, but working and learning from the homework is **essential** because this is where you learn the topics that will appear on the tests, which do count for a lot of your grade. The best lessons learned often come from correcting a quiz or homework problem in which you have made a mistake.

**More Good Advice**

Keep absences to a minimum. You never know when you might miss something important either from the lecture or class discussion such as questions other students ask. Remember: YOU ARE RESPONSIBLE FOR EVERYTHING THAT IS DISCUSSED DURING CLASS WHETHER YOU ARE PRESENT OR NOT.

Also do not allow yourself to develop bad habits such as missing classes. It's human nature to be controlled by our habits, so once you develop a daily habit for the semester, it can be hard to break this habit. So be sure that you allow the necessary time for this course FROM THE BEGINNING OF THE TERM, ESPECIALLY if you consider mathematics not to be your best subject. If you have trouble in math, then you should attend EVERY class of a college mathematics course. Not showing up to class or not doing the required work will not cause this class to "go away". If you are not understanding the material and/or have fallen behind in your work, missing class will not help. IF YOU FALL BEHIND, PLEASE DO NOT DROP THIS COURSE WITHOUT TALKING TO ME FIRST. Making mistakes or falling behind is natural, so it is best to talk to me about this. If you do have to miss class, let me know before class. Discuss with me what you are not understanding. It is essential to get your questions answered.

Ask questions no matter how easy or trivial they may seem. There is no such thing as a bad or silly question. Questions result when you are interested and have been thinking about areas, such as mathematics, in which you have some limitations in your educational background. Being in a college mathematics course means you will have questions both obvious and more subtle. Asking questions is a very important part of learning.

Study and work problems regularly–every day. Work on assignments discussed in class as soon as you can after class while the methods discussed are still fresh in mind. You can't expect to succeed in a math course by waiting till the last minute to only study and cram prior to a test. If you promise yourself you will study for ½-hour, get into the work, forget the clock, then the next thing you know, you've studied and worked for one to two hours.

**Classroom Conduct** It is important to conduct yourself in a college classroom so that everyone can benefit from good communication between instructor and students. My goal is to create an environment in which everyone can do their best work, learn, and make the best grades possible.

I think you will find that I am a very friendly, sympathetic, and generous instructor as long as you are sincerely working to succeed in this course and certain guidelines for classroom behavior are followed to allow a sanctity of study for your fellow students. Class habits such as holding conversations during lecture, or being engaged in activities not related to this course such as working on a different course or reading your cell-phone will work against the goals of this course and cause you to be counted absent and you will lose Daily Grade credit. Also engaging with electronic communication devices of any kiind (besides the Zoom technology) during class or coming into class more than 5 minutes late or leaving early before class is dismissed circumvent the goals of this course and cause you to lose credit. My sympathy and generosity will quickly evaporate if I find that you are working against the goals of the course or that you are simply trying to get a good grade without learning or without honestly doing the required work. I want you to have every opportunity to succeed in this course.

Please be aware of the rules for Academic Honesty that you will find in the Sul Ross Student Handbook.

Use commonsense to think of anything else that will allow you to learn and do the best work that you can in this class, and for me to better help you do your best work. Remember that being registered for this course does not allow you to behave in any manner you wish during class. You must keep other people in mind. It is within university policy for me to send a student out of this class on a temporary or permanent basis if disruptions or interruptions like the types listed above persist.

**Equal Access and Students with Special Needs**:
Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the Student's responsibility to initiate a request. Please contact Ms. Rebecca Greathouse Wren, M.Ed., LPC-S, Director/Counselor, Accessibility Services Coordinator, Ferguson Hall (Suite 112) at 432.837.8203; mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas 79832. Students should then contact the instructor as soon as possible to initiate the recommended accommodations.

This course is supportive of the Program Learning Outcomes for the Bachelor of Science degree in Mathematics:
The graduating student will demonstrate that he/she is able to:

- Apply knowledge of basic mathematics principles;
- Identify and provide valid proofs or solutions for theorems and problems;
- Recognize and dispute invalid mathematical statements using counter-examples.

And:

EC-6 Core Teacher Competencies:

Competency 013 (Mathematics Instruction) The teacher understands how students learn mathematical skills and uses that knowledge to plan, organize and implement instruction and assess learning.

Competency 014 (Number Concepts and Operation) The teacher understands concepts related to numbers, operations and algorithms and the properties of numbers.

Competency 015 (Patterns and Algebra) The teacher understands concepts related to patterns, relations, functions and algebraic reasoning.

Competency 016 (Geometry and Measurement) The teacher understands concepts and principles of geometry and measurement.

Competency 017 (Probability and Statistics) The teacher understands concepts related to probability and statistics and their applications.

Competency 018 (Mathematical Processes) The teacher understands mathematical processes and knows how to reason mathematically, solve mathematical problems and make mathematical connections within and outside of mathematics.

**Important Dates**

| | |
|---|---|
| Wed, May 20 | First day of classes; late registration, schedule changes begin |
| Fri, May 22 | Last day for late registration and schedule changes |
| Mon, May 25 | Memorial Day Holiday, no classes |
| Tue, May 26 | 4th class day |
| Fri, June 12 | Last day to drop a course with grade of “W” by 4 pm in |
| | Registrar’s Office |
| Fri, June 26 | Final Exams, end of term |

| **Math 1314 College Algebra--Tentative Course Outline--Summer 1, 2020** | | | **X = No class** |
|---|---|---|---|
| May 20-22 | Wed | Thu | Fri |
| | Graphs of Equations<br>Integers<br>Equivalent Equations | Slope, Rational Numbers<br>Linear Functions, Intercepts<br>Linear Applications | Parallel, Perpendicular Lines<br>Polynomial Operations<br>Order of Operations |
| May. 26 | | Mon | Tue |
| | | **X - Memorial Day Holiday May 25** | Polynomial function models<br>Properties of square root, cube root radicals |
| May. 27-29 | Wed | Thu | Fri |
| | Linear Equations<br>Absolute Value Equations<br>Linear Inequalities | Sets of Real Numbers<br>Set Notation<br>Domains of Functions | Irrational Numbers<br>Radicals, Exponents |
| June 1-2 | | Mon | Tue |
| | | Review for Test 1 | **June 2, Test 1** |
| June 3-5 | Wed | Thu | Fri |
| | Absolute Value Inequalities<br>Factoring Polynomials | Complex Numbers<br>Quadratic Equations | Quadratic Equations<br>Rational Equations |
| June 8-9 | | Mon | Tue |
| | | Distance<br>Circles | Quadratic Functions |
| June 10-12 | Wed | Thu | Fri |
| | Systems of Equations | Matrices and Vectors | Review for Test 2 |
| June 15-16 | | Mon | Tue |
| | | **June 15, Test 2** | Composition<br>Inverse Functions |
| June 17-19 | Wed | Thu | Fri |
| | Inverse Functions<br>Exponential Functions | Exponential Functions<br>Logarithmic Functions | Properties of Logs |
| June 22-23 | | Mon | Tue |
| | | Applications of Logs | Exp, Log Equations |
| June 24-26 | Wed | Thu | Fri |
| | Applications of Exps, Logs | Review for Test 3 | **June 26, Test 3** |