

**Math 2413 Syllabus
Calculus I
Fall 2023 Sul Ross State University**

Sec. 001:	Tue, Thu: 2-3:15p in ACR 206
L01 Lab:	Wed: 1:30-3:10p in ACR 206
Instructor:	Dr. Kris Jorgenson
Office:	ACR 109D
E-mail:	kjorgenson@sulross.edu
Office Hours:	Mon, Tue, Wed, Thu: 10-11a; Fri: 10a-12p; Mon: 2:30-3:30p; Wed, Thu, Fri: 3:30-4:30p; also by appointment

Course Description: This is a first semester calculus course. The pre-requisite is Math 1316 Trigonometry. The course will cover the topics of functions, modeling, limits, definition of the derivative, differentiation rules, applications of the derivative, antiderivatives and their applications with some look toward to the fundamental theorem of calculus, integration and applications of the integral. It is required that students enroll in the lab section available for the course. The laboratory will allow for more in-depth study and questions of homework problems and other project problems.

Student Learning Objectives Successful students will demonstrate correct understanding and knowledge of the calculus topics including but not limited to those of the preceding paragraph. Students will translate and apply concepts and problem-solving methods to different problem-solving situations. Students will demonstrate correct knowledge of the difference between numbers (perhaps in the context of another mathematical object such as a function or algebraic expression) 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. Students will express their solutions clearly in writing using complete sentences when appropriate.

This course is supportive of the
Student Learning Outcomes for the Bachelor of Science degree in Mathematics:

- 1) The student will be able to demonstrate content knowledge of basic mathematical principles.
- 2) The student will be proficient in logic, able to negate statements, provide counterexamples to false statements, and determine the validity of arguments.
- 3) The student will be able to communicate mathematical content clearly and with valid reasoning.

Required Materials: Textbook: Calculus: Concepts and Contexts, 4th Ed. James Stewart. Enhanced Edition 4th Edition ISBN-13: 978-1-337-68766-9 OR the non-enhanced 4th edition ISBN-13: 978-0-495-55742-5 Chaps. 1-4

Scientific Calculator: There will be some need of a scientific calculator, which has buttons with denotations such as y^x , a^b , \wedge , e^x , LN, LOG, but use of a calculator will not be a large part of this course. A calculator may be used to check arithmetical calculations throughout the semester. Graphing calculators that contain a scientific calculator and a graphing utility,

or any calculator capable of symbolic computation will not be allowed in this course.

Class Materials: Students are expected to be prepared in every class with pencils and paper to take notes of lecture content and examples, and you are required to be involved with in-class assignments and discussion. This will be part of your grade.

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 may 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:

Grading: Your grade will be based on homework assignments and in-class quizzes (worth 30%), 3 in-class unit tests (worth 60%), and attendance and class participation (10%).

The tests will based on assigned homework.

The two mid-term tests will be given during the lab time (1:30-3:10p) in ACR 206. The Final Test 3 will be a unit test over Chap. 4 and will be given during the 2-hour final exam time given below. The test dates are:

Test 1	Wed., Sept. 20
Test 2	Wed., Oct. 25
Test 3	Mon., Dec. 11. 10:15a-12:15p

Late Work, Rescheduled Quizzes/Tests Homework will be due by the end of the week in which it is due. However, it is best to have worked on all homework assigned during a previous week by the Tuesday of the following week so that you will have time to get questions answered before the in-class quiz which will normally be during the Wed. lab time. Then you will have more time to complete the homework to hand in by the Thursday or Friday of that week. To take an in-class quiz or test at a time other than the scheduled time, you must notify me of this absence ON OR BEFORE THE DAY MISSED, and satisfy one of two requirements: either (1) supply a written medical excuse signed by a medical professional for the day of the absence, or (2) your excuse is for a university activity, in which case 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, and your name must appear on a published explained absence list that I am provided (or this is verified by a faculty sponsor). Also, you and I must set up a time for you to make up the quiz or 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 for 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.

Attendance I will be taking attendance as university policy precludes you from missing 3 weeks or more of classes 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 60 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. A lab absence will require at least 90 minutes. Also I will allow you to excuse a test day for a documented medical absence as long as you also make up the test.

If you have 3 weeks or more of 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 will 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.

It is important to be working on the homework assignments yourself so that you will undergo the personal growth necessary for success on the tests. Making mistakes and learning from your mistakes is an important part of the learning process in mathematics. But you won't have this growth important for success on the tests if you are not doing the homework yourself and then asking questions. Losing some points on a homework assignment or quiz will not count for a lot, but if you learn from these mistakes, then you will do better on the tests, which do count for a lot of your grade. So working on the homework yourself, asking questions, and learning from mistakes is **essential** to your success in this course. 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 weekly 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 to not 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 magically 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 beforehand. Discuss with me what you are not understanding. It is essential to get your questions answered. But meeting with me outside of class is not a substitute for attending class.

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 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 the learning process.

Study and work problems regularly—every day or every other 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 immediately prior to a test. If you promise yourself you will study for a 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. Remember that

LEARNING FROM MISTAKES + PERSISTENCE = SUCCESS!

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. Habits such as holding conversations during class, 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 attendance credit. Also engaging with electronic communication devices of any kind 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 learn and 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.

ADA Statement

SRSU Accessibility Services. Sul Ross State University (SRSU) is committed to equal access in compliance with the 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 each semester for each class. Students seeking accessibility/accommodations services must contact Mrs. Mary Schwartze Grisham, LPC, SRSU's Accessibility Services Director at 432-837-8203 or email mschwartze@sulross.edu. Our office is located on the first floor of Ferguson Hall, room 112, and our mailing address is P.O. Box C122, Sul Ross State University, Alpine. Texas, 79832.

Program Marketable Skills:

Marketable Skill (MS) 1: Students Demonstrate Logical and Analytical Skills.

MS 2: Students Demonstrate Problem-Solving Using Analytic and Algebraic Methods.

MS 3: Students Use Technology in Problem-Solving and Presentation.

MS 4: Students Use Communication and Pedagogical Skills.

Core Curriculum Courses Academic Year 2023-2024

Since this is a core curriculum course, for the 2023-2024 academic year, the Student Learning Objectives are as follows:

- Critical Thinking. Students will develop critical thinking skills to include creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.
- Students will develop communication skills to include effective development,

interpretation, and expression of ideas through written, oral, and visual communication.

Classroom Climate of Respect

Importantly, this class will foster free expression, critical investigation, and the open discussion of ideas. This means that all of us must help create and sustain an atmosphere of tolerance, civility, and respect for the viewpoints of others. Similarly, we must all learn how to probe, oppose and disagree without resorting to tactics of intimidation, harassment, or personal attack. No one is entitled to harass, belittle, or discriminate against another on the basis of race, religion, ethnicity, age, gender, national origin, or sexual preference. Still we will not be silenced by the difficulty of fruitfully discussing politically sensitive issues.

Important University Dates

Mon, Aug. 28	First day of classes, first day of late registration and schedule changes
Thu, Aug. 31	Last day for late registration and schedule changes
Mon, Sep. 4	Labor Day Holiday, No Classes
Wed, Sep. 13	12th Class Day: Last Day to Drop a Class Without Creating an Academic Record for 16- week Courses
Wed, Sep. 27	University as a Community Meal on the Mall
Fri, Nov. 17	Last day to drop a class with a grade of "W" by 4 pm in University Registrar's Office
Wed-Fri, Nov. 22-24	Thanksgiving Holidays
Wed, Dec. 6	Last Day of Class before Finals
Thu, Dec. 7	Dead Day, No Classes
Fri, Mon-Wed: Dec. 8, 11-13	Final Exams, End of Term

X = No Class	Tentative Class Schedule for Math 2413 Fall 2023		
	Tue	Wed Lab	Thu
Aug. 29-31	Functions, Domains Difference Quotient Multi-Part Functions	Instantaneous Velocity Lab	One-Sided Limits Limits Continuity
Sep. 5-7	Linear Functions Composition of Functions	Homework Lab Quiz	Asymptotes
Sep. 12-14	Secant, Tangent Lines Definition of Derivative	Homework Lab Quiz	Ch. 1 Exp. functions Inverse Functions Logarithms
Sep. 19-21	Review for Test 1	Test 1 (up to definition of derivative)	Limit Laws Derivative Rules
Sep. 26-28	Derivative Rules Products and Quotients	Homework Lab Quiz	Trigonometry Derivative Rules
Oct. 3-5	Chain Rule	Homework Lab Quiz	Implicit Differentiation
Oct. 10-12	Derivatives of Inverse Trig Functions	Homework Lab Quiz	Derivatives of Log functions
Oct. 17-19	Rates of Change in the Sciences	Homework Lab Quiz	Ch. 4 Related Rates
Oct. 24-26	Review for Test 2	Test 2 Ch. 1: Exp, Log functions, to Rates of Change	Related Rates
Oct. 31-Nov. 2	Maximum/Minimum Problems	Homework Lab Quiz	Maximum/Minimum Problems
Nov. 7-9	Curve sketching	Homework Lab Quiz	Curve sketching
Nov. 14-16	Optimization Problems	Homework Lab Quiz	Optimization Problems
Nov. 21	L'Hospital's Rule	X Thanksgiving Holidays ----->	X
Nov. 28-30	L'Hospital's Rule Newton's Method	Homework Lab Quiz	Newton's Method Antiderivatives
Dec. 5-6	Antiderivatives	Antiderivatives Review for Test 3	X - Dead Day Thur Dec. 7
Mon. Dec. 11	Test 3 over Chap. 4, 10:15a-12:15p, Mon. Dec. 11		