

**Math 2414 Syllabus**  
**Calculus II**  
**Spring 2024 Sul Ross State University**

<b>Sec. 001:</b>	Tue, Thu: 2-3:15p in ACR 204
<b>L01 Lab:</b>	Wed: 4:30-6:10p in ACR 108
<b>Instructor:</b>	Dr. Kris Jorgenson
<b>Office:</b>	ACR 109D
<b>E-mail:</b>	kjorgenson@sulross.edu
<b>Office Hours:</b>	Mon, Wed: 10-11a; Tue, Thu, Fri: 10a-12p; Wed, Fri: 3:30-4:30p; also by appointment

**Course Description:** This is a second semester calculus course. The pre-requisite is Calculus I (Math 2413 or equivalent) with a grade of 'C' or better. The topics of this course include the definite integral and its applications, the Fundamental Theorem of Calculus, techniques of integration, improper integrals, sequences, and series. 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 exercises.

**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, extend, 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 ISBN-13: 978-0495557425 Chaps. 5, 6, 8

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. No graphing calculators such as the TI-84, TI-89, TI-92, or any calculator capable of symbolic computation are 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 in 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:

Your grade will be based on **homework-quiz (HWQ) grade** (worth 20%), **3 tests** (worth 70%), and **attendance and class participation** (10%). An optional **individual project problem (IPP)** can be used to supplant 10% of your total average. Such a final project problem is a problem chosen by the student that must be approved by the instructor that is an in-depth homework problem (but less than a paper) involving an application of Calculus II problem-solving methods. Each student's IPP would need to be unique and differ from that of any other student who might choose to do an IPP.

The **tests** will be based on assigned homework and in-class quizzes. The HWQ grade will include homework handed in and in-class quizzes. The tests will be given in class on the following dates:

<b>Test 1</b>	<b>Wed, Feb. 21 in ACR 108</b>
<b>Test 2</b>	<b>Wed, Apr. 3 in ACR 108</b>
<b>Final Exam (Test 3)</b>	<b>Mon, May 6: 12:30-2:30p in ACR 204</b>

**Late Work, Rescheduled Quizzes/Tests** To guarantee full credit on an assignment, you must let me know by the due date of a test, quiz, or HW assignment if you have to miss any for a medical reason or university activity to be verified by a written excuse. This would allow an extension on an assignment or re-scheduling a test date. Also, you and I must set up a time for you to make up the quiz, test, or meeting time to discuss late hw 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. 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 and 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 that 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 you will find 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. 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. Making mistakes or falling behind is natural, so it is best in this case to come to class and talk to me about this. If you do have to miss, let me know before class, and plan to come and see me and make an appointment to discuss what was missed and pick up assignments or discuss what you are not understanding. It is essential that you get your questions answered, which you are welcome to do in my office. However meeting in my office 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 learning.

Study and work problems regularly—every day or at least every other day. Work on assignments discussed in class as soon as you can after class while the methods from class 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 or 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 a classroom 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 during class to allow a sanctity of study for your fellow students. Habits such as holding conversations during class 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 goal of this course and cause you to be counted absent and lose 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 succeed in this course.

Please be aware of the rules for Academic Honesty that you will find in the Sul Ross Student Handbook and building codes prohibiting food, beverages, tobacco (smokeless or otherwise) in the classroom. 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.

**SRSU Alpine Disability Services.** 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 each semester for each class. Alpine students seeking accessibility/accommodations services must contact Mary Schwartz Grisham, M.Ed., LPC, SRSU's Accessibility Services Coordinator at 432-837-8203 (please leave a message and we'll get back to you as soon as we can during working hours), or email [mschwartz@sulross.edu](mailto:mschwartz@sulross.edu). Our office is located on the first floor of Ferguson Hall, room 112, and our mailing address is P.O. Box C-122, 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.

### **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

Wed, Jan. 17	First day of classes, first day of late registration and schedule changes
Mon, Jan. 22	Last day for late registration and schedule changes
Thu, Feb 1	Last Day to Drop a Class Without Creating an Academic Record, 12th class day
Mon-Fri March 11-15	Spring Break Holidays, No Classes
Fri, April 12	Last day to drop a class with a grade of "W" in a 16-week course by 4 pm in University Registrar's Office
Mon, April 15	Honors Convocation, 7 pm, Marshall Auditorium
Wed, May 1	Last Day of Class before Finals
Thu, May 2	Dead Day, No Classes
Fri, Mon-Wed: May 3, 6-8	Final Exams, End of Term

<b>Math 2414 Spring 2024 Tentative Course Outline</b>			<b>X = No Classes</b>
	Tue 2-3:15 ACR 204	Wed Lab 4:30-6:10 ACR 108	Thu 2-3:15 ACR 204
Jan. 17-18	<b>X = No Classes</b>	Course Introduction 3.9 Differentials	Big questions in Calculus Areas, Definite Integral
Jan. 23-25	5.3 Definite Integrals 5.4 Fundamental Theorem of Calculus	Lab, Quiz	5.5 Substitution Rule
Jan. 30-Feb. 1	5.5 Substitution Rule	Lab, Quiz	5.6 Integration by Parts
Feb. 6-8	5.6 Integration by Parts	Lab, Quiz	5.7 Additional Methods
Feb. 13-15	5.7 Additional Methods	Lab, Quiz	5.9 Approximation of Integrals
Feb. 20-22	Review for Test 1	<b>Test 1</b>	5.10 Improper Integrals
Feb. 27-29	6.1 More Areas	Lab Project Approximation of Definite Integrals	6.1 More Areas 6.2 Volumes
Mar. 5-7	6.2 Volumes 6.3 Volumes (Shells)	Lab, Quiz	6.3 Volumes (Shells)
<b>Mar. 11-15</b>	<b>Spring Break Holiday -----&gt;</b>		
Mar. 19-21	6.4 Arc Length	Lab, Quiz	6.6 Applications
Mar. 26-28	6.6 Applications	Lab, Quiz	8.1 Sequences
Apr. 2-4	Review Test 2	<b>Test 2</b>	8.2 Series
Apr. 9-11	8.3 Integral and Comparison Tests	Lab Project Sequences and Series	8.4 Other Convergence Tests
Apr. 16-18	8.5 Power Series	Lab, Quiz	8.6 Representations of Functions as Power Series
Apr. 23-25	8.7 Taylor and Maclaurin Series	Lab, Quiz	8.8 Applications of Taylor Polynomials
Apr. 30, May 1	Review for Test 3	Review for Test 3	<b>X - Dead Day May 2 Finals: Fri May 3 thru Wed May 8</b>
<b>Mon. May 6, Final Exam 12:30-2:30p in ACR 204</b>			