

**Calculus II**

Time: MW 12:30 – 1:20, TR 12:30 – 1:45  
Room: ACR 206

Instructor: Eric Funasaki  
Office: ACR 109C and BAB 210  
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**Office hours:**

MW 3:30 – 5:00, TR 2:00 – 2:50, or by appointment.

**Textbook:**

*Calculus: Concepts & Contexts*, 4<sup>th</sup> edition, by James Stewart.

**Course Description:**

Topics include the definite integral and its applications, techniques of integration, improper integrals, Taylor's formula, and infinite series.

**Prerequisite:**

Math 2413 Calculus I

**Mathematics Program Student Learning Outcomes:**

The student should be able to:

1. Apply knowledge of basic mathematics principles;
2. Identify and provide valid proofs or solutions for theorems or problems; and
3. Recognize and dispute invalid mathematical statements using counterexamples.

**Marketable Skills**

1. Students Demonstrate Logical and Analytical Skills.
2. Students Demonstrate Problem-Solving Using Analytic and Algebraic Methods.
3. Students Use Technology in Problem-Solving and Presentation.
4. Students Use Communication and Pedagogical Skills.

**Course Objectives:**

The student will be able to:

1. Evaluate definite integrals and improper integrals.
2. Evaluate indefinite integrals using methods such as substitution and parts.
3. Use integration to find area, volume, arc length, average value, and work.
4. Determine if a sequence converges or diverges.
5. Determine if a series converges or diverges.
6. Represent functions as power series, in particular as Taylor and Maclaurin Series.

## Course Assessment:

Your grade will be based on the following components:

- 10% In-class problems and participation
- 22% Homework assignments and quizzes
- 48% Exams
- 20% Comprehensive Final Exam

The grading scale will be:

90 – 100 A      80 – 89 B      70 – 79 C      60 – 69 D      0 – 59 F

## Course Schedule (tentative):

### Week 1

- 1/15 W 4.8 Antiderivatives, 5.1 Areas and Distances
- 1/16 R 5.1 Areas and Distances, 5.2 The Definite Integral

### Week 2

- 1/20 M MLK holiday (no class)**
- 1/21 T 5.2 The Definite Integral
- 1/22 W 5.2 The Definite Integral
- 1/23 R 5.3 Evaluating Definite Integrals

### Week 3

- 1/27 M 5.3 Evaluating Definite Integrals
- 1/28 T 5.4 The Fundamental Theorem of Calculus
- 1/29 W 5.4 The Fundamental Theorem of Calculus
- 1/30 R 5.5 The Substitution Rule

### Week 4

- 2/3 M 5.5 The Substitution Rule
- 2/4 T 5.6 Integration by Parts
- 2/5 W 5.6 Integration by Parts
- 2/6 R 5.7 Additional Techniques of Integration

### Week 5

- 2/10 M 5.7 Additional Techniques of Integration
- 2/11 T 5.10 Improper Integrals
- 2/12 W 5.10 Improper Integrals
- 2/13 R Review for Exam 1

### Week 6

- 2/17 M Review for Exam 1
- 2/18 T Exam 1**
- 2/19 W 6.1 More About Areas
- 2/20 R 6.1 More About Areas

### Week 7

- 2/24 M 6.1 More About Areas, 6.2 Volumes
- 2/25 T 6.2 Volumes
- 2/26 W 6.2 Volumes
- 2/27 R 6.3 Volumes by Cylindrical Shells

### Week 8

3/3	M	6.3 Volumes by Cylindrical Shells
3/4	T	6.4 Arc Length
3/5	W	6.4 Arc Length
3/6	R	6.5 Average Value of a Function

### Week 9

3/10	M	6.5 Average Value of a Function
3/11	T	6.6 Applications to Physics and Engineering
3/12	W	6.6 Applications to Physics and Engineering
3/13	R	Review for Exam 2

### Week 10

<b>3/17</b>	<b>M</b>	<b>Spring Break (no class)</b>
<b>3/18</b>	<b>T</b>	<b>Spring Break (no class)</b>
<b>3/19</b>	<b>W</b>	<b>Spring Break (no class)</b>
<b>3/20</b>	<b>R</b>	<b>Spring Break (no class)</b>

### Week 11

3/24	M	Review for Exam 2
<b>3/25</b>	<b>T</b>	<b>Exam 2</b>
3/26	W	8.1 Sequences
3/27	R	8.1 Sequences

### Week 12

3/31	M	8.2 Series
4/1	T	8.2 Series
4/2	W	8.3 The Integral and Comparison Tests
4/3	R	8.3 The Integral and Comparison Tests

### Week 13

4/7	M	8.4 Other Convergence Tests
4/8	T	8.4 Other Convergence Tests
4/9	W	8.5 Power Series
4/10	R	8.5 Power Series

### Week 14

4/14	M	8.6 Representations of Functions as Power Series
4/15	T	8.6 Representations of Functions as Power Series
4/16	W	8.7 Taylor and Maclaurin Series
4/17	R	8.7 Taylor and Maclaurin Series

### Week 15

4/21	M	8.7 Taylor and Maclaurin Series, 8.8 Application of Taylor Polynomials
4/22	T	8.8 Application of Taylor Polynomials
4/23	W	8.8 Application of Taylor Polynomials
4/24	R	Review for Exam 3

### Week 16

4/28	M	Review for Exam 3
<b>4/29</b>	<b>T</b>	<b>Exam 3</b>
4/30	W	Review for Final Exam
<b>5/1</b>	<b>R</b>	<b>Dead Day (no class)</b>

## Week 17

5/6 T Final Exam (12:30 pm – 2:30 pm)

### **Attendance:**

Role will be taken. You are responsible for all material covered in class as well as any assignments and announcements that are made. If you miss an assignment, exam, or quiz you will receive a grade of zero unless I have been notified in advance.

Sul Ross State University policy allows an instructor to drop a student with a grade of W or F when 9 hours of class are missed. For this course that is when you miss **7** classes.

### **Cheating:**

Cheating will not be tolerated. Anyone caught cheating will receive a grade of zero on that assignment. This includes homework assignments where the student who copied another student's work and the student who allowed their work to be copied will both receive a grade of zero.

### **Cell Phones and Other Electronic Devices:**

Your cell phone must be **off** while you are in class. You may not read or send text messages while class is in session. If there is an unusual situation where you simply must be able to read and send a message without delay, please place your phone in vibrate mode and leave the room before reading and responding. No other electronic devices may be used during class without the permission of the instructor.

### **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 Schwartz Grisham, LPC, SRSU's Accessibility Services Director or Mr. Ronnie Harris, LPC, Counselor, at 432-837-8203 or email [mschwartz@sulross.edu](mailto:mschwartz@sulross.edu) or [ronnie.harris@sulross.edu](mailto:ronnie.harris@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.

### **Student Responsibilities Statement:**

All full-time and part-time students are responsible for familiarizing themselves with the Student Handbook and the Undergraduate & Graduate Catalog and for abiding by the University rules and regulations. Additionally, students are responsible for checking their Sul Ross email as an official form of communication from the university. Every student is expected to obey all federal, state, and local laws and is expected to familiarize themselves with the requirements of such laws.

**SRSU Distance Education Statement:**

Students enrolled in distance education courses have equal access to the university's academic support services, such as library resources, online databases, and instructional technology support. For more information about accessing these resources, visit the SRSU website.

Students should correspond using Sul Ross email accounts and submit online assignments through Blackboard, which requires a secure login. Students enrolled in distance education courses at Sul Ross are expected to adhere to all policies pertaining to academic honesty and appropriate student conduct, as described in the student handbook. Students in web-based courses must maintain appropriate equipment and software, according to the needs and requirements of the course, as outlined on the SRSU website. Directions for filing a student complaint are located in the student handbook.

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