

Calculus II

Time: MW 8 – 8:50, TR 8 – 9:15

Room: ACR 206

Instructor: Eric Funasaki

Office: ACR 109C and BAB 210

Phone: 432-837-8109

e-mail: eric.funasaki@sulross.edu

Office hours:

MW 9 – 9:50, TR 10:45 – 11:50, or by appointment.

Textbook:

Calculus: Concepts & Contexts, 4th 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 Learning Objectives:

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

- 1/10 M 4.8 Antiderivatives
- 1/11 T 5.1 Areas and Distances
- 1/12 W 5.1 Areas and Distances
- 1/13 R 5.2 The Definite Integral

Week 2

- 1/17 M MLK holiday (no class)**
- 1/18 T 5.2 The Definite Integral
- 1/19 W 5.2 The Definite Integral
- 1/20 R 5.3 Evaluating Definite Integrals

Week 3

- 1/24 M 5.3 Evaluating Definite Integrals
- 1/25 T 5.4 The Fundamental Theorem of Calculus
- 1/26 W 5.4 The Fundamental Theorem of Calculus
- 1/27 R 5.5 The Substitution Rule

Week 4

- 1/31 M 5.5 The Substitution Rule
- 2/1 T 5.6 Integration by Parts
- 2/2 W 5.6 Integration by Parts
- 2/3 R 5.7 Additional Techniques of Integration

Week 5

- 2/7 M 5.7 Additional Techniques of Integration
- 2/8 T 5.10 Improper Integrals
- 2/9 W 5.10 Improper Integrals
- 2/10 R Review for Exam 1

Week 6

- 2/14 M Review for Exam 1
- 2/15 T Exam 1**
- 2/16 W 6.1 More About Areas
- 2/17 R 6.1 More About Areas

Week 7

- 2/21 M 6.1 More About Areas, 6.2 Volumes
- 2/22 T 6.2 Volumes
- 2/23 W 6.2 Volumes
- 2/24 R 6.3 Volumes by Cylindrical Shells

Week 8

2/28	M	6.3 Volumes by Cylindrical Shells
3/1	T	6.4 Arc Length
3/2	W	6.4 Arc Length
3/3	R	6.5 Average Value of a Function

Week 9

3/7	M	Spring Break (no class)
3/8	T	Spring Break (no class)
3/9	W	Spring Break (no class)
3/10	R	Spring Break (no class)

Week 10

3/14	M	6.5 Average Value of a Function
3/15	T	6.6 Applications to Physics and Engineering
3/16	W	6.6 Applications to Physics and Engineering
3/17	R	Review for Exam 2

Week 11

3/21	M	Review for Exam 2
3/22	T	Exam 2
3/23	W	8.1 Sequences
3/24	R	8.1 Sequences

Week 12

3/28	M	8.2 Series
3/29	T	8.2 Series
3/30	W	8.3 The Integral and Comparison Tests
3/31	R	8.3 The Integral and Comparison Tests

Week 13

4/4	M	8.4 Other Convergence Tests
4/5	T	8.4 Other Convergence Tests
4/6	W	8.5 Power Series
4/7	R	8.5 Power Series

Week 14

4/11	M	8.6 Representations of Functions as Power Series
4/12	T	8.6 Representations of Functions as Power Series
4/13	W	8.7 Taylor and Maclaurin Series
4/14	R	8.7 Taylor and Maclaurin Series

Week 15

4/18	M	8.7 Taylor and Maclaurin Series, 8.8 Application of Taylor Polynomials
4/19	T	8.8 Application of Taylor Polynomials
4/20	W	8.8 Application of Taylor Polynomials
4/21	R	Review for Exam 3

Week 16

4/25	M	Review for Exam 3
4/26	T	Exam 3
4/27	W	Review for Final Exam
4/28	R	Dead Day (no class)

Week 17

5/4 W Final Exam (8 am – 10 am)

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 **6** 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:

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. Our office is located on the first floor of Ferguson Hall (Suite 112) and our mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas 79832.