

KINE 3343-001 • BIOMECHANICS • FALL 2026

Doug W. Renshaw, Ph.D.

Assistant Professor of Kinesiology

Course Meetings

Monday & Wednesday, 11:00 a.m.-12:15 p.m. • Face-to-face with Blackboard components

Office

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Phone

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Office Hours

Mon 9:00-11:00 a.m. & 12:30-1:30 p.m.; Tue 11:00 a.m.-1:00 p.m.; Wed 9:00-11:00 a.m. & 12:30-1:30 p.m.; Thu 11:00 a.m.-1:00 p.m.; by appointment M-F when not teaching, in person or via Teams

Required Text

Basic Biomechanics, 9th ed., Susan J. Hall (ISBN 978-1-260-83698-1). Available through Sully Shelf; do not purchase separately.

COURSE DESCRIPTION

This course examines the mechanical concepts and principles that govern human movement in physical education, exercise, and sport. Through lecture, problem solving, applied activities, and movement analysis, students will integrate principles of biomechanics with musculoskeletal anatomy and neuromuscular physiology to evaluate movement efficiency, performance, and injury risk. Recommended prerequisite: BIOL 2401 and/or BIOL 2402.

EXPECTATIONS OF STUDENTS

Students are responsible for keeping current with assigned readings, Blackboard announcements, Connect/SmartBook work, quizzes, projects, and examinations. Readings should be completed before the related class meeting so that class time can be used for application, problem solving, and discussion.

MARKETABLE SKILLS

- Collaboration - interact productively with classmates during discussion, problem solving, and movement-analysis activities.
- Communication - explain biomechanical concepts clearly in written, oral, and visual formats.
- Critical Thinking - analyze real-world movement scenarios and defend conclusions using mechanical principles.
- Career Management - apply biomechanical reasoning to exercise, coaching, rehabilitation, performance, and related professional settings.

STUDENT LEARNING OUTCOMES

- Define biomechanics, statics, dynamics, kinematics, and kinetics and describe the scope of biomechanical inquiry.

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- Explain and apply kinematic and kinetic principles used to analyze human motion.
 - Describe biomechanical concepts relevant to the musculoskeletal system.
 - Apply biomechanical concepts to human movement using qualitative methods and introductory 2D video analysis.

COURSE OBJECTIVES

- Describe major historical developments in biomechanics and their application to human movement.
- List and define directional terms and cardinal planes used to describe the body and relationships among body segments.
- Explain joint classification, joint biomechanics, normal ranges of motion, joint-action terminology, muscle roles, skeletal muscle contraction, and kinesthesia/proprioception.
- Apply mechanical principles to the analysis of human movement.
- Describe Newton's laws of motion and apply them to exercise and sport.
- Explain factors that contribute to technique improvement and injury development.
- Compare qualitative and quantitative approaches to human movement analysis.
- Apply biomechanical principles to improve performance and reduce injury risk.
- Explain how inefficient or improper technique can limit effective movement.
- Identify common equipment and methods used in biomechanical analysis.
- Perform an integrated biomechanical analysis of human movement using principles developed throughout the course.

PROGRAM LEARNING OUTCOMES

- Demonstrate understanding of structural and mechanical properties of the musculoskeletal system, functional and movement characteristics, and movement analysis by synthesizing sport and exercise science principles.
- Demonstrate knowledge relevant to treatment planning for athletic injuries and illnesses, including emergency care, rehabilitation, therapeutic modalities, nutrition, pharmacological considerations, and appropriate medical referral.
- Assess health and fitness status using appropriate testing, data collection, evaluation, and decision-making methods.
- Explain physiological adaptations to sport and exercise and analyze human responses to aerobic and anaerobic challenges.
- Assess individual or community health/fitness status and develop evidence-informed programs or prescriptions consistent with professional guidelines.
- Develop and deliver fitness, wellness, and strength-training programs for individuals with differing levels of fitness, skill, health, or physical need.

COURSE FORMAT

This is a face-to-face course supported by Blackboard and Connect/SmartBook. Blackboard is the official location for announcements, assignment instructions, due dates, supplemental materials, and grade information. Students are expected to check their Sul Ross email and Blackboard daily.

GRADING, TESTING, ASSIGNMENTS & ATTENDANCE

Attendance is not recorded by roll call. Instead, ten unannounced in-class quizzes are used to reward preparation and attendance. Quizzes may not be made up unless the absence is approved and documented. The point structure below resolves the conflicting totals in the prior syllabus and establishes a 1,000-point course total.

Component	Points	Course Weight
In-class quizzes	100	10%
Connect/SmartBook assignments	375	37.5%
Exams / tests, including the final exam	300	30%
Midterm biomechanical analysis project	125	12.5%
Connecting with Students	100	10%
TOTAL	1,000	100%

Extra credit: up to 100 bonus points may be offered at the instructor's discretion. Bonus points are not included in the 1,000-point denominator.

A	B	C	D	F
900-1,000+	800-899	700-799	600-699	Below 600

Late work: Late work is not accepted unless required by university policy or specifically approved in advance for a documented circumstance.

HIGHLY IMPORTANT NOTES:

- As in ALL of my classes – I do not accept late work. It is your responsibility to stay abreast of deadlines, check emails, reply in a timely fashion, and keep up with your grades.
- When you email me, the only thing in the subject line should your name and the class you are emailing about.

Doug Renshaw (your name) Biomechanics

Then your email must be proofread, written in professional tone and be succinct. I get 200 emails a day and the more concise you are the more efficiently I can reply.

- You must bring (at minimum) something to write with and something to write on to every class. Not doing so will exempt you from being able to take a quiz or do in class work.
- Stay off your phones. If you need to take/make a call, please step outside.
- If the door to the classroom is shut and it is >10 minutes past the scheduled start time you may not come in.
- Do not wear your hood up while in my class. I will ask you to leave.

Connecting with Students for Success

As a part of a research study, I am committed in this course to the following:

I will know
your name

I will provide
user-friendly,
timely feedback
on your
assignments

I will hold high
standards and
support you to
achieve them

I will hold an
individual
meeting with
each student
during the
semester

- As part of your grade, you must all meet with me 1 time by a date TBD. This is an easy 100 points!

CONNECTING WITH STUDENTS FOR SUCCESS

I am committed to maintaining a course environment in which students are known, challenged, supported, and given timely feedback. During the semester, I will make a deliberate effort to connect individually with each student.

KNOW YOU

Learn your name and goals.

FEEDBACK

Provide clear, timely feedback.

HIGH STANDARDS

Expect strong work and help
you reach the standard.

CHECK-IN

Hold an individual check-in
during the semester.

ACADEMIC INTEGRITY

Students are expected to demonstrate scholarly behavior and academic honesty. Academic dishonesty includes, but is not limited to, submitting another person's work as one's own, reusing work from another course without permission, copying from professional or internet sources without citation, or collaborating when collaboration is prohibited. Plagiarism detection software may be used for written assignments. Students are responsible for complying with current Sul Ross academic-integrity policies and the Student Handbook.

GENERATIVE AI POLICY

Generative AI may be used for brainstorming, planning, clarification, feedback, or editing when that use supports the learning goals of an assignment. Unless an assignment explicitly authorizes AI-generated submission content, the final work submitted for credit must be written and assembled by the student. AI tools may not be used during quizzes or exams unless expressly permitted.

- Disclose and cite any meaningful use of generative AI in submitted work.

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- When requested, include an appendix identifying the tool used, how it was used, why it was used, and the relevant prompt/response exchange.
 - Never upload confidential, private, health, student-identifying, or otherwise protected information to a generative AI system.
 - You are responsible for checking AI output for accuracy, bias, fabricated sources, and compliance with academic-integrity and intellectual-property standards.
 - Undisclosed or prohibited AI-generated work will be treated as academic misconduct.

CLASSROOM CONDUCT & PROFESSIONAL RESPONSIBILITY

- Do your own work and submit it on time.
- Come prepared, participate, ask questions, and take responsibility for your learning.
- No headphones, hoods, or phones during class unless specifically authorized for a class activity or accommodation.
- Do not photograph or record class content or classmates without permission.
- Be respectful to classmates, faculty, staff, and guests.
- If you are more than five minutes late or the classroom door is closed, do not enter unless you have made prior arrangements.
- Approved absences generally require documentation and may include official university athletics, documented illness, documented vehicle emergencies, or documented family emergencies.

COMMUNICATION

- Check Sul Ross email and Blackboard every day. Blackboard announcements are the primary method for course-wide updates.
- Use a concise subject line that includes your full name and course (example: Jane Smith - KINE 3343).
- Write professionally and keep messages brief and relevant. You do not need to disclose private details beyond what is necessary to explain the situation.
- If you see a grading error, contact me promptly so it can be reviewed and corrected if necessary.
- In professional settings and around other faculty or university staff, address me as Dr. Renshaw.

ONLINE COMPONENTS & TECHNOLOGY

Students must maintain reliable access to Blackboard, Sul Ross email, Connect/SmartBook, and any course-specific software or files identified by the instructor. Online submissions require secure university login credentials. Technical problems should be addressed promptly; waiting until a deadline has passed is not a substitute for timely communication.

ACCIDENTS & INJURIES

Any injury or illness associated with a course activity must be reported to the instructor immediately. Students are responsible for seeking appropriate medical care. Course participation does not replace professional medical evaluation.

ACADEMIC CIVILITY

Students are expected to interact respectfully with faculty and peers in a manner that supports learning. Disruptive or unsafe behavior may result in removal from a class session and may be referred through appropriate university procedures.



LIBRARY & ACADEMIC SUPPORT

The Bryan Wildenthal Memorial Library in Alpine provides books, articles, databases, research assistance, and other academic resources for Sul Ross students. Students are encouraged to use university tutoring, advising, accessibility, technology, and academic-support services as needed.

ACCESSIBILITY / ADA

Sul Ross State University is committed to equal access for students with documented disabilities. Students seeking reasonable accommodations should initiate the request through the university's Accessibility Services process each semester and provide the appropriate accommodation notice to the instructor. Current contact information and procedures are available through Sul Ross State University.

PERSONAL RESPONSIBILITY

The short version: show up, work hard, check your email, communicate early, meet deadlines, and take ownership of your education. You are responsible for keeping current with assignment dates, test dates, and university drop/withdrawal deadlines.

FALL 2026 COURSE SCHEDULE

The schedule below is a planning guide and may be adjusted when necessary. Any changes will be announced in class and/or through Blackboard. Assignment deadlines posted in Blackboard control when they differ from this planning table.

Week	Class Dates	Topics	Key Notes / Due Dates
1	Aug 24 & 26	Syllabus, course introduction, math refresher	Course orientation
2	Aug 31 & Sep 2	Chapter 1: What Is Biomechanics?	
3	Sep 7 & 9	Chapter 2: Kinematic Concepts for Analyzing Human Motion	Sep 7: Labor Day - no class
4	Sep 14 & 16	Chapter 3: Kinetic Concepts for Analyzing Human Motion	
5	Sep 21 & 23	Chapter 4: Biomechanics of Human Bone Growth and Development	
6	Sep 28 & 30	Chapter 5: Biomechanics of Human Skeletal Articulations	
7	Oct 5 & 7	Chapter 6: Biomechanics of Human Skeletal Muscle	
8	Oct 12 & 14	Chapter 7: Biomechanics of the Human Upper Extremity	Midterm project due Oct 13; SmartBook 1-8 due Oct 16
9	Oct 19 & 21	Chapter 8: Biomechanics of the Human Lower Extremity	16-week midterm Oct 19
10	Oct 26 & 28	Chapter 9: Biomechanics of the Human Spine	
11	Nov 2 & 4	Chapters 10-11: Linear & Angular Kinematics of Human Movement	
12	Nov 9 & 11	Chapters 12-13: Linear Kinetics; Equilibrium and Human Movement	
13	Nov 16 & 18	Chapter 14: Angular Kinetics of Human Movement	Test / applied analysis as announced
14	Nov 23 & 25	Review / applied biomechanics	Nov 25: Thanksgiving holiday - no class
15	Nov 30 & Dec 2	Course synthesis, final project, exam preparation	Final project due Dec 2 by 11:59 p.m.
Finals	Dec 4, 7-9	Final examination period	Exact final-exam date/time follows the university final-exam schedule; all course requirements complete by Dec 9

- All of the midterm connect assignments are due on **OCTOBER 16**. The Assignments from chapter 9-14 are due **DECEMBER 3**.
- A midterm project will be due around the week of October 16. The Final exam (on Connect will be due by **DECEMBER 9**.
- **REMEMBER: DR. RENSHAW DOES NOT ACCEPT LATE WORK. EVER. FOR ANYTHING**

SRSU FALL 2026 ACADEMIC CALENDAR

The dates below are the Fall 2026 Sul Ross State University academic-calendar dates most relevant to student planning in this course. University deadlines govern even if they are not repeated elsewhere in the syllabus.

Date	Academic Calendar Event
Aug 24, Mon	First day of classes - 16-week and 1st 8-week terms; late registration/schedule changes begin; Spring 2027 graduation applications open.
Aug 27, Thu	Last day for late registration and schedule changes.
Aug 31, Mon	Last day to drop a 1st 8-week course without creating an academic record.
Sep 7, Mon	Labor Day holiday - no classes.
Sep 9, Wed	12th class day, 16-week term; last day to drop a 16-week course without creating an academic record; Fall 2026 graduation application deadline without late fee.
Oct 2, Fri	Last day to drop/withdraw from a 1st 8-week course with a grade of W; paperwork must be received by the Registrar by 4 p.m.
Oct 16, Fri	Final exams - 1st 8-week term.
Oct 19, Mon	1st 8-week grades due by noon; midterm for 16-week term; 2nd 8-week term begins.
Oct 21, Wed	Last day for schedule changes - 2nd 8-week term.
Oct 26, Mon	Last day to drop a 2nd 8-week course without creating an academic record.
Nov 2, Mon	Registration for Spring 2027 begins; Spring 2027 graduation application opens.
Nov 6, Fri	Last day to withdraw from a 16-week course/term with a grade of W; paperwork due to Registrar by 4 p.m.
Nov 20, Fri	Last day to drop a 2nd 8-week course with a grade of W.
Nov 25-27, Wed-Fri	Thanksgiving holiday - no classes.
Dec 2, Wed	Last class day before finals - 16-week term.
Dec 3, Thu	Dead Day - 16-week term.
Dec 4, 7-9	Final examinations - 16-week term.
Dec 9, Wed	Final examinations - 2nd 8-week term.
Dec 10, Thu	Final grades for graduating students due by noon.
Dec 11, Fri	Fall Commencement - Alpine, Pete P. Gallego Center, 5:30 p.m.
Dec 12, Sat	Fall Commencement - RGC, location TBD, 3:30 p.m.
Dec 14, Mon	All grades due for all students by noon.

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