



SUL ROSS
KINESIOLOGY DEPARTMENT

KES 3313 001
Kinesiology & Biomechanics
Fall 2020

Dr. Billy Jack Ray
Assistant Professor - Kinesiology

Office: Grace-Pierce 101
Phone: 432/837-8444 office
Email: billy.ray@sulross.edu
Office Hours: Monday 8-9 & 11-2, Tuesday 8-9 & 11-2, Wednesday 8-9 & 11-1 and Thursday 8-9 & 11-2.
By appointment (email to set an appointment)
Meeting: On-line via Blackboard and Connect
Required Text: Basic Biomechanics 8nd Edition – Susan Hall
ISBN: 9781259913877

COURSE DESCRIPTION

This course will equip participants with knowledge of the essential mechanical concepts and principles that govern human movement within a context of physical education and sports science. Through lecture, laboratory experience, problem-solving activities, and other forms of learning in and outside the classroom, students will acquire practical biomechanical knowledge through the integration between the mechanical principles and the efficiency of human movement and interrelationships of biomechanics, musculoskeletal anatomy, and neuromuscular physiology. Recommended Prerequisite: BIOL 2401 and/or BIOL 2402.

EXPECTATION OF STUDENTS

Students are responsible for keeping up with the reading and are expected to read the assigned chapters and/or other posted readings prior to class in order to contribute to online discussion. Handouts distributed through Blackboard should be kept in a notebook in order to be referred to as necessary.

Marketable Skills – The following marketable skills are met in this course:

- **Collaboration** – students will interact with one another through a multitude of class discussions and activities
- **Communication** –
- **Critical Thinking** – students will be asked to critically decipher a multitude of real-world scenarios

- **Career Management** – students will develop the skills necessary to train athletes by understanding proper motor learning and motor development

STUDENT LEARNING OUTCOMES

Upon successful completion of this course, students should be able to:

- Describe the terms biomechanics, statics, dynamics, kinematics, and kinetics and the scope of scientific inquiry addressed by biomechanists.
- Explain kinematics and kinetics for analyzing human motion
- Describe biomechanics concepts in musculoskeletal system
- Apply biomechanics concepts for analyzing human motion using 2D video analysis

COURSE OBJECTIVES: Students will be able to:

Demonstrate knowledge and understanding

- 1: of the facts and theories relating to child development and learning.
- 2; of the ways in which motor skills and social skills interact.
- 3: of different body types and their relationship to performance.

Demonstrate the ability

- 1: to create learning activities that develop basic motor patterns and skills
- 2: to perform and analyze children's movement pattern.
- 3: to relate basic psychological principles to the learning of motor skills.
- 4: to select and utilize a variety of teaching strategies which are appropriate for the developmental levels of all children.
- 5: to apply movement concepts including movement laws and principles.
- 6: to collect objective and reliable baseline data on his/her teaching and use such data to improve teaching.

TEXAS EDUCATION AGENCY STANDARDS:

Standard I – The physical education teacher demonstrates competency in a variety of movement skills and helps students develop these skills.

Competency 001 – The teacher understands and applies principles of motor development and motor learning.

Competency 002 – The teacher understands principles and practices developing, combining and integrating motor skills.

Competency 003 – The teacher understands and applies knowledge of movement concepts and biomechanical principles.

Course Format

The format for this course will include, but is not limited to – face to face delivery, on-line components, and volunteer hours.

Attendance

Attendance for class is mandatory. Every class day is a grade. You will receive 100% credit for being on time, 75% credit for being tardy. **One letter grade will be deducted for every absence after four (4). Students with zero (0) absences (not including athletic related absences) and with no missing assignments will be exempt from the final exam.**

GRADING POLICIES/TESTING/ASSIGNMENTS/ATTENDANCE/EXPECTATIONS

Grade calculation	% of Grade	Grading Scale
Connect LearnSmart Assignments (14)	53% (14 @ 50 = 700 points)	1163 or more A
Unit Test (3)	23% (3 @ 100 = 300 points)	1033-1162 B
Final Paper	12% (150 points)	903-1032 C
Final Exam	12% (150 points)	733-902 D
		Less than 732 F
		Total Points = 1300

No Late Assignments Will Be Accepted. Also, No Credit Will Be Given For Any Late Assignments

Course Schedule

		<u>Connect / BlackBoard</u> <u>Assignment</u>
<u>Week 1</u>	CHAPTER 1: What Is Biomechanics?	LearnSmart 1 08/28/20
<u>Week 2</u>	CHAPTER 2: Kinematic Concepts for Analyzing Human Motion	LearnSmart 1 09/04/20
<u>Week 3</u>	CHAPTER 3: Kinetic Concepts for Analyzing Human Motion	LearnSmart 1 09/11/20 Test 1 09/13/20
<u>Week 4</u>	CHAPTER 4: The Biomechanics of Human Bone Growth and Development	LearnSmart 1 09/18/20
<u>Week 5</u>	CHAPTER 5: The Biomechanics of Human Skeletal Articulations	LearnSmart 1 09/25/20
<u>Week 6</u>	CHAPTER 6: The Biomechanics of Human Skeletal Muscle	LearnSmart 1 10/02/20

<u>Week 7</u>	CHAPTER 7: The Biomechanics of the Human Upper Extremity	LearnSmart 1 10/09/20
<u>Week 8</u>	CHAPTER 8: The Biomechanics of the Human Lower Extremity	LearnSmart 1 10/16/20
<u>Week 9</u>	CHAPTER 9: The Biomechanics of the Human Spine	LearnSmart 1 10/23/20 Test 2 10/25/20
<u>Week 10</u>	CHAPTER 10: Linear Kinematics of Human Movement	LearnSmart 1 10/30/20
<u>Week 11</u>	CHAPTER 11: Angular Kinematics of Human Movement	LearnSmart 1 11/06/20
<u>Week 12</u>	CHAPTER 12: Linear Kinetics of Human Movement	LearnSmart 1 11/13/20
<u>Week 13</u>	CHAPTER 13: Equilibrium and Human Movement	LearnSmart 1 11/20/20 Test 4 11-22-20
<u>Week 14</u>	Thanksgiving Break	
<u>Week 15</u>	CHAPTER 14: Angular Kinetics of Human Movement CHAPTER 15: Human Movement in a Fluid Medium	LearnSmart 1 11/30/20 Final Paper 12/01/20 Test 3 12/02/20
<u>Week 16</u>	Final Exam Week No Class	Final Exam 12/06/20

ALL COURSE REQUIREMENTS DEADLINE

**All test and assignments will be due on the date shown by 11:59 pm.
The final exam will be due by the date and time shown.**

Distance Education Statement

Students enrolled in distance education courses have equal access to the university's academic support services, such as Smarthinking, 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 secure login information to verify students' identities and to protect students' information. The procedures for filing a student complaint are included in the student handbook. 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.

Accidents & Injuries

In the case of bodily or personal property damage, the Kinesiology Department will not be held responsible. The student must report any field experience related injury or illness to the Instructor immediately. Any expense incurred due to injury or illness will be the student's responsibility.

Academic Integrity Statement

Academic dishonesty hurts everyone and reduces the value of college degrees. Doing someone else's work, presenting the ideas and work of others as your own, submitting the same paper for multiple classes, and/or failing to cite your sources when you utilize the ideas of others, are all examples of academic dishonesty. It is your responsibility to read and understand the university's policy on academic dishonesty in the SRSU Student Handbook, as all violations will be taken seriously and handled through the appropriate university process. The Student Handbook can be found at: <https://www.sulross.edu/page/2454/student-handbook> (page 80).

In addition, please note that plagiarism detection software will be used in this class for written assignments, as well as monitoring software for course exams.

Academic Civility Statement

Students are expected to interact with professors and peers in a respectful manner that enhances the learning environment. Professors may require a student who deviates from this expectation to leave the face-to-face (or virtual) classroom learning environment for that particular class session (and potentially subsequent class sessions) for a specific amount of time. In addition, the professor might consider the university disciplinary process (for Academic Affairs/Student Life) for egregious or continued disruptive behavior.

Academic Affairs Service Statement

Sul Ross faculty, staff, and students are expected to model responsible citizenship through service activities that promote personal and academic growth while enhancing the university, local, regional, national, and global communities. These activities will foster a culture of academic/public engagement that contributes to the achievement of the university's mission and core values.

Academic Excellence Statement

Sul Ross holds high expectations for students to assume responsibility for their own individual learning. Students are also expected to achieve academic excellence by:

- Honoring the core values of Sul Ross.
- Upholding high standards of habit and behavior.
- Maintaining excellence through class attendance and punctuality.
- Preparing for active participation in all learning experiences.
- Putting forth their best individual effort.
- Continually improving as independent learners.
- Engaging in extracurricular opportunities that encourage personal and academic growth.
- Reflecting critically upon feedback and applying these lessons to meet future challenges.

ADA Statement

Sul Ross State University is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is the student's responsibility to initiate a request for accessibility services. Students seeking accessibility services must contact Mary Schwartz, M. Ed., L.P.C., in Counseling and Accessibility Services, Ferguson Hall, Room 112. The mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas 79832. Telephone: 432-837-8691. E-mail: mschwartz@sulross.edu.