

KINE 3318 - Fundamentals of Biomechanics: Fundamentals of Biomechanics (SSI - June 03 to July 05)

Summer 2024 Syllabus, Section 380, CRN 51530

Instructor Information

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Adjunct Instructor

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Office: Live chat available with request

Office Hours:

NA

Times and Location

Does Not Meet Face-to-Face

Course Description

This course provides students with a scientific basis of biomechanical concepts, especially those associated with muscular activity, and their application to human movement and sport skills. This course is 3 hours of theory per week. Prerequisites: KINE 3311 or concurrent enrollment. Health Sciences Department, College of Nursing&Health Sci

Program Learning Outcomes

During the course of studies, the student will:

- Explain, identify, and/or demonstrate the theoretical and/or scientific principles that can be used to address issues or problems in kinesiology.
 - Apply knowledge and skills required to assess human performance related characteristics of individuals from diverse populations.
 - Evaluate and interpret components of health related fitness.
 - Analyze and discuss current issues in health, physical activity, and wellness.
 - Develop quality wellness program (s) for the individual and/or community.
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Student Learning Outcomes

Student Learning Outcomes:

Upon completion of this course the student is expected to:

1. Design and modify activities that promote fitness using knowledge of anatomy, kinesiology, and physiological principles.
2. Explain structures and functions of major body systems and how these systems adapt to physical activity.
3. Apply physiological and Biomechanical principles to movement and sports activities.
4. Demonstrate and use biomechanical principles to sports and physical education class.

Important Dates

Visit the Academic Calendar (tamiu.edu) (<https://www.tamiu.edu/academiccalendar/>) page to view the term's important dates.

Textbooks

Group	Title	Author	ISBN
Required	Basic Biomechanics	Hall, Susan J.	9781264169719

Grading Criteria

- Quizzes - 20%
- Assignments - 20%
- Article Critiques - 25%
- Midterm/Final Exams - 35%

Total = 100%

GRADE	PERCENTAGE
A	89.5-100
B	79.5 – 89.5
C	69.5 – 79.5
D	
F	

Course Calendar (Tentative)

Week of	Agenda/Topic	Reading(s)	Due
6/3	Course Introduction Chapters 1-3: - What is Biomechanics? - Kinematics concepts for analyzing human motion - Kinetic concepts for analyzing human motion	Chapter 1, 2, 3 for week 1 Chapter 1 PPT Chapter 2 PPT Chapter 3 PPT *Begin with chapters 4-6 in preparation for week 2	To familiarize students with course expectations, grades percentage breakdown, and chapters 1-3. - Quiz 1 chapter 1 - Quiz 2 chapter 2 - Quiz 3 chapter 3 - Assignment #1 Chapter 1 Introductory Problems Questions (#3) p. 17
6/10	Chapters 4-6: - The Biomechanics of Human Bone Growth Development - The Biomechanics of Human Skeletal Articulations - The Biomechanics of Human Skeletal Muscle	Chapters 4-6 Chapter 4 PPT Chapter 5 PPT Chapter 6 PPT *Begin with chapters 7-8 in preparation for week 3	- Assignment #2 Chapter 5 Introductory Problems Questions (#3) p. 97. - Quiz 4 Chapter 4 - Quiz 5 Chapter 5 - Quiz 6 Chapter 6 - Article Critique #1 - Lab Chapter 5 - Article Critique #1
6/17	Chapters 7-8 - The Biomechanics of the Human Upper Extremity - The Biomechanics of the Human Lower Extremity	Chapters 7-8 Chapter 7 PPT Chapter 8 PPT Midterm Exam (Chapters 1,4,6,7,8) Begin with chapters 9-11 in preparation for week 4	- Quiz chapter 7 - Quiz Chapter 8 - Midterm Exam Chapters 1,4,6,7,8 - Lab Chapter 8 - Assignment #3 Chapter 8 Introductory Problems Questions (#6) p. 244 - Midterm Exam
6/24	Chapters 9-11: - The Biomechanics of the Human Spine - Linear Kinematics of Human Movement - Angular Kinematics of Human Movement	Chapters 9-11 Chapter 9 PPT Chapter 10 PPT Chapter 11 PPT *Begin with chapters 12-14 in preparation for week 5	- Assignment #4 Chapter 9 Introductory Problems Questions (#1) due p. 283. - Quiz 9 chapter 9 - Quiz 10 chapter 10 - Quiz 11 chapter 11 - Article Critique #2
7/1	Final Exam: This test is 2-hour max with 60 questions.	Chapters 9-15 Chapter 12 PPT Chapter 13 PPT Chapter 14 PPT Chapter 5 PPT Final Exam (Chapters 9,10,12,13,14) Noncomprehensive	- Quiz Chapter 12 - Quiz Chapter 13 - Quiz Chapter 14 - Quiz Chapter 15 - Final Exam *Final should be taken anytime between 12:00am – 11:59 pm on July 7, 2023.

Distance Education Courses

Regular and Substantive Interaction (Note to Instructors):

The U.S. Department of Education (ED) has issued *Regular and Substantive Interaction: Background, Concerns, and Guiding Principles* which went into effect on July 1, 2021. Under the new regulations, the U.S. Department of Education requires that all online courses and programs for which students may use Title IV funds (federal financial aid) include regular and substantive interaction between students and their instructors. This ruling applies to both synchronous and asynchronous courses, with the primary focus being asynchronous courses. The Department of Education has the authority to audit courses and programs at institutions, like Texas A&M International University, with online offerings.

Be sure that your course provides for regular and substantive interaction between faculty and students, students and students, and students and content. (C-RAC, OSCQR, QM, SACSCOC, SC)

1. Regular and substantive instructor-to-student expectations and predictable/scheduled interactions and feedback are present, appropriate for the course length and structure, and are easy to find. (OSCQR, SACSCOC, SC)
2. Expectations for all course interactions (instructor to student, student to student, student to instructor) are clearly stated and modeled in all course interactions/communication channels. (OSCQR, SACSCOC, SC)

Be sure to add clear statements on your syllabi about these instructor-to-student expectations.

Visit for additional guidance on including Regular and Substantive Interaction: <https://www.tamui.edu/distance/faculty/regular-and-substantive-interaction.shtml>

Online Courses and On-Campus Meetings

Texas Administrative Code (TAC), Title 19, Part 1, Chapter 2, Subchapter J, Section 2.202 ([https://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage/?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=19&pt=1&ch=2&rl=202](https://texreg.sos.state.tx.us/public/readtac$ext.TacPage/?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=19&pt=1&ch=2&rl=202)), defines distance education as the formal educational process that occurs when students and instructors are not in the same physical setting for the majority (more than 50%) of instruction. Distance education includes hybrid and 100% online courses and programs as defined by the Texas Higher Education Coordinating Board (THECB):

- **100-Percent Online Course** - A distance education course in which 100 percent of instructional activity takes place when the student(s) and instructor(s) are in separate physical locations. **Requirements for on-campus or in-person orientation, testing, academic support services, internships/fieldwork, or other non-instructional activities do not exclude a course from this category.**

In this online course, be sure to confirm what in-person meetings may be required of you (if applicable).

Course Structure

The purpose of this course is to introduce students to concepts of mechanics as they apply to human movement, particularly those pertaining to exercise and physical activity. Students should gain an understanding of the mechanical and anatomical principles that govern human motion, and develop the ability to link the structure of the human body with its function from a mechanical perspective. Students should be able to explain what biomechanics is and the purpose of biomechanics, define and apply the basics of linear and angular kinematics, Newton's laws, linear kinetics, and torque to human movement and describe examples of how these principles apply to real world applications at the total body and local joint level, gain an understanding of the mechanical properties and the mechanopathology of the musculoskeletal system tissues and understand the limitations behind applying biomechanical results / principles to injury analysis.

Students are required to follow a weekly routine of readings, assignments, quizzes and exams that are due and make sure to meet the deadlines for submission. There will not be any make ups for missed deadlines, students are expected to follow the weekly scheduled works, lectures and readings.

Student-Instructor Communication Policy and Response Time

Announcements/Course Messages/Emails

This course is 100% online and weekly lectures will be posted, announcements and reminders will be posted on a weekly basis, attendance is not mandatory for meetings and recordings will be posted/uploaded. Office hours will be online chat upon request. Emails will be responded by the instructor within 24 hours.

Assignments and Assessments

Feedback will be provided in the comments section for submissions, for quizzes and exams students will have the opportunity to view the correct answers, etc. Grades will be updated on a weekly basis and students will be notified via announcements.

Course Communication Guidelines (Netiquette)

There are course expectations concerning etiquette or how we should treat each other online. We must consider these values as we communicate with one another. Visit **Instructional Technology and Distance Education Services' web page on Netiquette** (<http://www.tamui.edu/distance/students/netiquette.shtml/>) for further instruction.

Accommodations/Accessibility Policy

Texas A&M International University seeks to provide reasonable accommodation for all qualified persons with disabilities. This University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to register with the Director of Student Counseling and to contact the faculty member in a timely fashion to arrange for suitable accommodation. For more information, contact the online at **Office of Disability Services for Students (DSS)**, via phone at 956.326.3086 or by visiting the staff at the Student Center, room 118. A link to the Disabilities Services for Students site has also been included under the "Resources" tab inside the course.

Student Support Resources

The University wishes to have all students succeed in their courses. To provide support to our students, an array of services in the areas of technology support, academic support, student support, and accessibility support may be found at the University. For more information, visit the Instructional Technology and Distance Education Services page on **University Resources and Support Services**.

Computer/Technology Requirements

When participating in distance education courses, it is vital to consider the technology involved in order to have a successful course. Online students will need regular access to a personal computer that runs on a broadband Internet connection.

It is recommended that you meet the technical requirements listed on the Instructional Technology and Distance Education Services' webpage when using the learning management system (LMS) of the University.

Additional Hardware. For this class, you will need the following additional hardware: Recently purchased laptops may have these built-in web cameras. If you do not have this equipment, it is recommended to purchase a stand-alone webcam, microphone, or a webcam with a built-in microphone from your local electronic store or any online store.

NOTE: Instructional Technology and Distance Education Services may check out available webcams to students on a first-come, first-served basis. To check out a webcam, please stop by Killam Library, Room 259, and request an available webcam.

TAMUI Students may access online versions of this software through their Dusty Office 365 account at <https://dusty.tamui.edu/>. This site also provides students access to download the Microsoft suite for educational use. **See instructions for downloading the Microsoft Office suite.**

Note: Students, if you do not own the required hardware or software or do not have access to the Internet, it will be highly challenging for you to make any progress in this class. However, my goal is to assist you in finding solutions and guide you appropriately most of the required materials can either be found free of charge at TAMUI's library, classrooms, and available computer labs. **Visit Media Services' web page on the availability of on-campus computer labs.** In addition, you may also purchase any of these items at any electronic store.

Learning Management System (Blackboard)

Students are provided with an orientation (*eLearning (Blackboard) Student Orientation*) and access to guides on how to use the Blackboard LMS. Guides may be available at **Instructional Technology and Distance Education Services' Student eLearning Tutorial Videos page** or by contacting the eLearning team at elarning@tamui.edu.

Minimum Technical Skills Expected

When participating in distance education courses, it is vital to consider the technology involved in order to have a successful course. Students in distance education should have knowledge of basic computer and Internet skills, as mentioned on the **Instructional Technology and Distance Education Services' webpage**.

Technical Support Services

Because of the nature of distance education courses, the Office of Information Technology (OIT) computing and information services are vital to the success of online students. This webpage covers contact information for Distance Education Services (Blackboard Support), the OIT Help Desk, and E-mail support: **Technical Support Services**.

Web Conferences/Synchronous sessions

[Instructors that host synchronous virtual meeting sessions should list details on how students will meet with the instructor in this section and whether these meetings are optional or required. Include the frequency of these meetings and a general explanation of the purpose for these sessions.]

Grading Scale/Schema (after Grade Breakdown section)

In determining the final course grade, the following scale is used in percentage or point value.

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- 89.5-100 = A
- 79.5 - 89.4 = B
- 69.5 - 79.4 = C
- 69.4 and below = F

Late Work Policy No late work will be accepted. Students are responsible for submitting work on the due date and time specified.

(Exceptions: if you are absent because of school-sponsored activity (you need to notify me at least one week in advance) or illness with doctor's excuse. In which case, you need to take the exam on specific date & time that I will assign)

Rubrics (may be included here and in the Syllabus and Overview in the course)

[The inclusion of rubrics in the syllabus is usually up to the instructor. If rubrics are not included in the syllabus, this area should convey to students that rubrics are included in the course and will provide an understanding of how they will be assessed on the course's assignments.]

Late Work Policy

No missed or late works will be accepted.

Course Evaluation

At the end of this course, students are encouraged to complete a course evaluation that will be distributed to them via email and through a course link.

Turnitin Policy Or Other Types of Assignments in Other Systems

[Instructor's policy on assignments held within the Turnitin system.]

Proctoring

[Respondus LockDown Browser/Monitor OR Examity. Contact elearning@tamiu.edu for the syllabus statement and other information.]

Accessibility and Privacy Statements on Course Technologies

At Texas A&M International University, we believe that all students should have equal technology opportunities in the classroom. These technologies/sites may also require user data, such as the creation of a username and password. You may find the accessibility and privacy policies of the technologies used in this class on the following pages: **Accessibility Statements and Privacy Statements**.

In this class, we will utilize: [insert the technologies here].

Syllabus Subject to Change

While information and assurances are provided in this course syllabus, it should be understood that content may change in keeping with new research and literature and that events beyond the control of the instructor could occur. Students will be informed of any substantive occurrences that will produce syllabus changes.