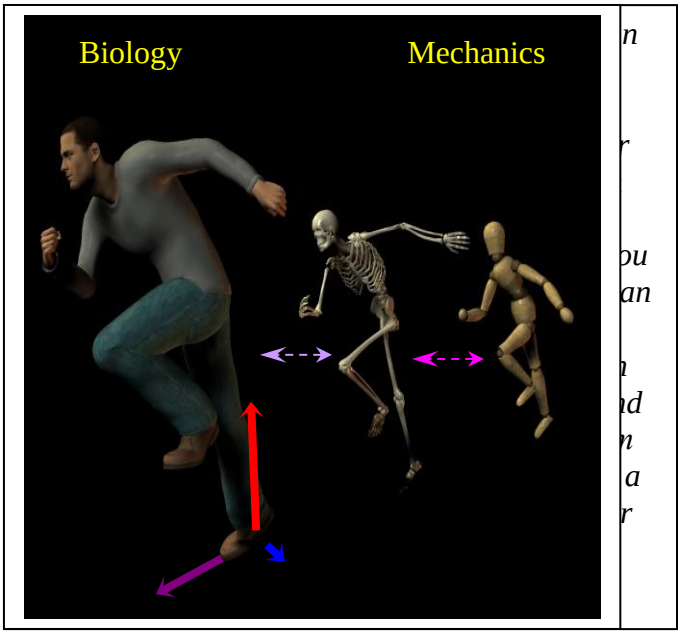
UTAH STATE UNIVERSITY

Department of Health, Physical Education, and Recreation
Biomechanics, PEP 4200 (4 credits)



Instructor: Jessica Wing
Email: Jessica.wing@usu.edu

Prerequisites: Bio 2000, Bio 2010, PEP 3250, and Math 1050

I. **Course Description**: Introduction and application of human functional anatomy and biomechanical principles important to human movement. In lab, students will experience the application of principles of functional anatomy and biomechanics.

II. **Online Technologies**: Canvas; E-mail

III. **Required Textbook:**

Hall, S. J. (2014). *Basic Biomechanics* (7th ed). Dubuque, IA: WCB/McGraw-Hill.

IV. **Course Objectives**: At the completion of this course, students should be able to:

A. Demonstrate an understanding of basic anatomical terminology.
B. Define and apply basic biomechanical concepts to human movement situations.
C. Describe anatomical and biomechanical factors that influence muscle force production.
D. Define and apply kinematic and kinetic measures to linear and angular human motion in order to quantify various aspects of movement.
E. Define torque and discuss why it is a measure of human strength.
F. Identify the factors that influence torque production in the intact musculoskeletal system.

V. **Evaluation:**

A. Exams:

Exam 1	85	points
Exam 2	85	points
Exam 3	80	points

B. Laboratory:	150	points
C. Introductory Problems	0	points
D. Assignments	40	points
E. Quizzes	40	points
F. Discussions	Extra credit points	
G. Research Paper	30	points
Points possible……	510	points

VI. **Description of evaluation components**:

A. **Exams**: There are 3 exams that will be multiple choice, fill-in-the-blank, and short answer formats. No notes, help from the textbook, other people, outside resources, etc are allowed in helping you take the exam. Exams are ***timed and proctored***. You are only given 1 attempt on each exam; no exam extensions or extra attempts are given. You are only allowed to bring a calculator and blank piece of paper/pencil to the exam, nothing else. Students may take the exams any time during the unit, but must finish the exam by the exam deadline set for that unit at a testing center on campus or an approved site or with an approved proctor. Again, all exams must be proctored--most students take the exams in a testing center on the various regional campuses, but you may look at the RCDE website under testing to see the other ways you may set up a proctor. This is your responsibility, not mine. **You should have your <u>proctor approved</u> <u>within the first week</u> of class and appointments set up <u>2 weeks in advance</u> to take the exams.** View the following link to see the process in how to set up your proctor: https://rcde.usu.edu/testing/index.cfm/public/students.

Please notice the deadlines for the exams. Exams 1 & 2 have deadlines at 11:59 PM, but *Exam 3 has a deadline of **1:00 PM** on the last day of class*. Plan ahead so as to meet the deadline, since no excuses are accepted for missing it.

B. **Laboratory**: The laboratory assignments are meant to give you hands-on experiences in applying the concepts presented in the course content sections. The lab is worth about 30% of your grade and will require you to complete seven different laboratory assignments. As this is an online class, you will not have hands-on experience with some equipment required, which means video will be used to allow you to complete the assignments on some. Details will be given during your various laboratory assignments.

C. **Introductory Problems**: At the end of each chapter in your text book there are introductory problems that help you appreciate the information presented. The answers to most questions are provided and therefore you are encouraged to complete these problems, but you will not turn in your answers. I would also encourage you to complete the "Sample Problems" which are found within the text of each chapter.

D. **Assignments**: There are 4 assignments. The 4 assignments reinforce and apply key principles from the content presented. The course outline indicates their due dates.

E. **Quizzes**: There are 6 quizzes total—3 concerning the syllabus and academic integrity, the other 3 concerning the course material (Quiz 1-3). There will be one quiz covering material from each unit. The course outline indicates quiz dates. The quizzes are not proctored, but are timed.

F. **Announcements**: Weekly announcements will be posted with helpful information and reminders. Be sure to look for them each week throughout the semester.

G. **Discussions:** There will be several discussion topics presented throughout the semester. This is the only way you are able to earn extra credit in this class, so be sure to watch for them and comment before the deadline. Discussion assignments typically require you to present and analyze case examples or scenarios using course concepts. Entries will be evaluated based on how well they demonstrate your ability in this regard. Grades will be recorded using the following system: 1 point = needs improvement, 2 points = meets minimum requirements and 3 points = demonstrates very well the ability to analyze using course concepts. There is also a discussion topic that is dedicated just for students. Students should use this specific discussion board for questions that apply to students only, not to me. This can allow you to ask questions to each other, arrange study groups at all the different campuses, etc. Only positive, professional comments will be accepted and tolerated in this class. Any question directed to the instructor should be emailed to Jessica.wing@usu.edu

H. **Research Project:** Today, much of the new scientific knowledge is first reported to the scientific community via an oral or poster presentation at a scientific conference. Usually, in order to present new scientific knowledge at such a conference, scientists

must first submit a short abstract describing the findings of their scientific study. This semester you will be asked to research a topic that involves biomechanics and then prepare a short abstract that describes your research findings. The details for the project will be presented on the assignment and can also be found on the Course Information on Canvas. The project due date is indicated on the outline.

VII. **Grading Scale**:

A	469-510 points	A-	459-468 points		
B+	448-458 points	B	418-447 points	B-	408-417 points
C+	397-407 points	C	367-396 points	C-	357-366 points
D+	346-356 points	D	306-345 points		
F	< 305 points				

VIII. **General Information**:

A. **Academic honesty policy**: Plagiarism is not acceptable in any way, shape, or form. Do not copy a previous student's work, current student, internet, the textbook, etc. If caught, it is an automatic 0 for the assignment, and further action may be taken by the department. If you are caught cheating on an exam, it is an automatic 0 for that exam, an AIVF may be filed, and further action may be taken by the department as well. If you are caught cheating on an exam again, it is an automatic F for your final class grade. **There is absolutely no tolerance for plagiarism or cheating**. Please review the academic integrity slides for this class on Canvas as well as your acknowledgement of the honor pledge you have taken.

B. ***Late work is not accepted for ANY reason.*** You are given the due dates and deadlines for all quizzes, assignments, labs, and exams on the very first day of class, which is why if you do not meet the deadline it is a zero. Even if the work is submitted 1 minute late, or there is a family emergency, surgery, funeral, internet is down, etc, it is a zero. Work ahead to avoid an unforeseen problem that would inhibit you from turning your work in on time. No exam, quiz, etc extensions are allowed. *Be responsible for your work—this is a senior level class and that level of responsibility and work ethic is expected.*

*Be aware that these deadlines are in Mountain Standard Time (MST). This means that the deadline isn't at 11:59 PM or 1 PM wherever you live—it is at 11:59 PM MST or 1 PM MST no matter where you live!

C. **Overall:** Even though this is an online class, it is still expected that you stay on top of all of the material and put in at least 6-8 hours a week on this class. Many students underestimate the class and procrastinate until the last minute, which reflects on their grades. Exams will follow the textbook and lecture notes, and all other resources are for additional help if you need it. This is a basic online class--read the textbook and lecture notes, complete the assignments and labs, and study and take the exams which

are open from day one and can be taken any time before the deadline. Be sure you are taking the time to look at all of the extra links provided in the lecture notes, which contain extra math problems, conceptual examples that are worked out, as these will enhance your understanding and provide extra examples to study from—many of which, are known to be found on the exams. I will respond to emails within 48 business hours upon receiving it.

D. **Submissions**:
Once you submit your file to Canvas for an assignment, it is considered gradable. Do not submit a portion of the assignment, as if to save it, and then submit the other portion later for the completion of the entire assignment. If I see a file has been submitted for the assignment, I will consider it finished and will proceed to grade it. There are ***no resubmissions allowed***.

E. Exam dates and lecture topics may change depending on class progress.

F. Source Guides (Journals):
Journal of Biomechanics
Journal of Applied Biomechanics
Journal of Electromyography and Kinesiology
Medicine and Science in Sports and Exercise
American Journal of Sports Medicine
Journal of Orthopaedic & Sports Physical Therapy
Ergonomics

IX. **Disability Resource Center:** Students with ADA-documented physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations. Veterans may also be eligible for services. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, (435)797-2444 voice, (435)797-0740 TTY, (435)797-2444 VP, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advance notice.