Welcome to Biomechanics! Biomechanics is an integral part of any career that applies the principles of kinesiology (study of human movement). Biomechanics is unique from other fields in our profession, in that it allows for an appreciation of the “why.” That is, an understanding of biomechanics allows you to explain ‘why’ some techniques are better than others when it comes to performance, rehabilitation, and injury prevention. This is contrast to other fields that help you understand ‘which’ techniques to use and ‘how’ to perform them. I think you will find biomechanics to be a powerful tool that you will use throughout your life to improve, maintain, or recapture performance, health, and wellness.

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Prerequisites: PEP 4200

I. Course Description: The course will review kinematic and kinetic principles and discuss their application to sport and rehabilitation. Current and popular research published in the biomechanics field will form the outline for lectures and drive discussions.

II. Online Technologies: E-mail, Canvas, and Piazza.
III. **Required Materials:**
B. Course booklet
C. Supplementary hand-outs and lab assignments (available in lecture or on Canvas)

IV. **General Course Objectives:** At the completion of this course, students should be able to:
A. Demonstrate an understanding of biomechanical history and terminology.
B. Define and apply basic biomechanical concepts to human movement situations.
C. Discuss current and popular literature related to biomechanics of human motion.
D. Develop a lesson plan for a biomechanical concept and present it to the class.
E. Demonstrate an ability to identify a biomechanical topic and discuss theories, questions, concepts, methods, and applications related to the topic.

V. **Tentative Evaluation:**
A. Exams:  #3 @ about 40 Pts/exam  120 points
B. Literature Review Assignment:  #2 @ 60 Pts each  120 points
C. Teaching Module  90 points
D. Participation/Preparation/Quizzes  70 points

Points possible…………………………………………………………………………………………400 points

VI. **Description of evaluation components:**
A. Exams: Exams will be short essay questions, fill in the blank, and multiple choice answers. The exam dates are presented in the course outline (and are Thursdays).

B. The literature review assignment will consist of a critical review and synthesis of a topic in biomechanics. The write-ups for this assignment will be a two page document; details will be given in lecture/Canvas.

C. Teaching module: Each student will teach a biomechanical topic of choice to the class during an in class lecture. Teaching modules will consist of a written lesson plan, presentation notes/media, oral presentation, study guide, exam questions, and class evaluations. Details for this component are provided in a teaching guidelines document.

D. Participation points will be based on the instructor’s discretion, attendance, announced/unannounced quizzes, and in-class activity assignments.
VII. **Tentative Grading Scale (points may be converted to percentage):**

A: 372-400 points  A-: 360-371 points  
B+: 348-359 points  B: 332-347 points  B-: 320-331 points  
C+: 308-319 points  C: 292-307 points  C-: 280-291 points  
D+: 268-279 points  D: 240-267 points  
F: < 239 points

VIII. **General Information:**

A. Academic honesty policy: USU’s policies and recommendations for academic honesty will be followed (see the USU general catalog or [http://catalog.usu.edu/content.php?catoid=3&navoid=265](http://catalog.usu.edu/content.php?catoid=3&navoid=265)). Plagiarism will result in no credit for the given assignment. Late assignments will result in dropping a letter grade for that assignment.

B. Make-up exam policy: If you anticipate an absence or a schedule conflict with an exam, see me at least one week prior to the exam, and you may be able to schedule an alternate time. Emergencies will be handled on an individual basis, however if an emergency causes you to miss an exam, you need to call me (see phone number above) the day of the exam (leave a detailed message if necessary). There are NO make-up exams for individuals who approach me about a missed exam AFTER the exam has been given.

C. Exam dates, lecture topics, and exam point totals may change depending on class progress.

D. Special needs: If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center. In cooperation with the Disability Resources course, material will be provided in alternative formats such as large print, audio diskette, or Braille.

E. Source guides (some journals with biomechanical content related to class discussions):

- 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