I. **Course Description:** This course is designed to help students learn how to collect, analyze, and interpret biomechanical data. While learning how to use some of the instruments in the biomechanics lab, students will become better prepared to make biomechanical measurements and will improve their understanding of how forces and motions are involved in human movement.

II. **Online Technologies:** E-mail, Canvas, and Lecture MP4/IPOD downloads.

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:
- Understand general concepts that are related to collection and analysis of some biomechanical data. Some of these concepts include: Analog to digital conversion, sampling rate, signal noise, and filters.
- Understand the basics of collecting video data, to allow for independent data collection using motion analysis systems.
- Understand how to use instruments that can measure external force (force platform and load cell), and use external force data to compute basic kinetic measures.
- Understand how to collect and analyze electromyographic data to better understand muscular activity during human motion.
- Understand which instruments should be used in research to collect kinematic and kinetic data.
V. **Tentative Evaluation:**

A. Exams: # 1 @ about 20 points

B. Assignments: # 4 @ 20 points/assignment 80 points

Points possible……………………………………………………………………100 points

VI. **Description of evaluation components:**

A. Exam: One comprehensive exam that will be an open book/notes summary of the notes/readings provided. The exam date is presented in the course outline

B. Assignments will consist of small scaled research projects. The write-up for these projects will consist of Microsoft Excel outputs and short (ish) answer questions.

VII. **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). 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.