

KIN 154A - Instrumentation in Exercise Physiology & Biomechanics

Section 1 (Lecture): M 15:00-15:50, SPX 208; Section 2 (Activity): MW 16:00-17:50, SPX 208

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Course Description: This class is designed to assist the student in becoming familiar and proficient with the methods and instruments of assessing physiological and biomechanical characteristics of human performance.

Course Prerequisites: KIN 70, KIN 155, KIN 158, or equivalent.

Undergraduate Degree Program Learning Outcomes (PLO)

At the end of a Bachelor of Science degree program in the Department of Kinesiology students should be able to:

1. obtain a critical understanding and the ability to apply theoretical and scientific knowledge from the sub-disciplines in kinesiology for personal fitness, healthy lifestyles, sport, and/or therapeutic rehabilitation.
2. effectively communicate the essential theories, scientific applications, and ethical considerations related to kinesiology.
3. apply scholarship and practice of different movement forms to enhance movement competence in kinesiology.
4. recognize and apply sustainable approaches as they relate to kinesiology.
5. identify social justice and equity issues related to kinesiology for various populations.

Course Objectives

Upon successful completion of the course requirements, the student will be able to:

- (1) demonstrate knowledge and use of instruments and procedures utilized in the measurement of physiological functioning and biomechanical analyses (PLO #1 and #2).
- (2) demonstrate proficiency in administering selected physiological and biomechanical tests (PLO #1, #2, and #4).
- (3) interpret and explain test results (PLO #1 and #2).
- (4) demonstrate knowledge of the benefits and limitations of selected physiological tests (PLO #1).
- (5) demonstrate knowledge of conditions which indicate that an individual should not be assessed (PLO #1).
- (6) qualitatively and quantitatively analyze human movement using video data (PLO #3).
- (7) demonstrate sensitivity to age, gender, cultural, and other individual differences as they relate to the physiological and biomechanical assessment of human performance (PLO #5).

Course Methods

The course methods that will be used include lecture/discussion, demonstration, observation, assigned readings, and laboratory experience which emphasizes hands-on practice to develop competence.

Course Content

The first half of the course will consist of instrumentation concepts in exercise physiology and the second half of

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Course Requirements

- Heyward, V. H., & Wagner, D. R. (2004). *Applied body composition assessment* (2nd ed.). Champaign, IL: Human Kinetics.
- Course reader for exercise physiology — available at Maple Press (481 E. San Carlos, 297-1000).
- Battery-operated calculator.
- For biomechanics, course and lab handouts available from Dr. Kao’s webpage, laptop computer (not required, but recommended), and graph paper (5 squares per inch).

Course Evaluation

The final course grade will be determined 50% from the exercise physiology unit and 50% from the biomechanics unit. Specifics of grading will be given by the instructor for each half of the course. Grades will be based solely on accumulated points in each half of the course.

Exercise Physiology Points (PLO #1, #2, #3, and #5)	50
Biomechanics Points (PLO #1, 2, and #3) <u>50</u>	
Total Points	100

Final grades will be assigned according to the following allocation of total points.

A+	98-100	B+	88-89	C+	78-79	D+	68-69	F	≤ 59
A	92-97	B	82-87	C	72-77	D	62-67		
A-	90-91	B-	80-81	C-	70-71	D-	60-61		

General Information

- ACADEMIC INTEGRITY (from Office of Judicial Affairs). “Your own commitment to learning, as evidenced by your enrollment at San Jose State University, and the University’s Academic Integrity Policy requires you to be honest in all your academic course work. Faculty are required to report all infractions to the office of Judicial Affairs. The policy on academic integrity can be found at <http://www2.sjsu.edu/senate/S04-12.htm>.
- AMERICANS WITH DISABILITIES ACT COMPLIANCE. “If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with The Disability Resource Center (924-6000, located in Adm 110) as soon as possible. Presidential Directive 97-03 requires that students with disabilities register with DRC to establish a record of their disability.”