

**San José State University
CASA/Dept. of Kinesiology
KIN 157, Physiological Assessment, Fall 2015**

Instructor:	Peggy Plato
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Office Hours:	Mondays 2:00-2:30 pm Wednesdays 2:00-3:30 pm Other times available by appointment
Class Days/Time:	M 10:30-11:20 (lecture) MW 11:30-1:20 (lab)
Classroom:	YUH 233
Prerequisites:	Chem 30A, GE Math, Biol 66, KIN 70 (C- or better), KIN 155 (C- or better)

Course Description

Use of exercise physiology instrumentation to assess physiological characteristics of human performance, interpret results, and implement corrective strategies, when appropriate.

Kinesiology Undergraduate Major Program Learning Outcomes (KIN PLOs)

At the end of a Bachelor of Science degree program in the Department of Kinesiology, students should expect:

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

Course Goal

Students will develop competency in using laboratory instruments to perform physiological assessments, interpret results and, when appropriate, implement appropriate corrective strategies.

Course Learning Outcomes (CLOs)

Upon successful completion of this course, students will be able to:

- (1) demonstrate knowledge and use of instruments and procedures utilized in the assessment of physiological functioning.
- (2) demonstrate proficiency in administering selected physiological tests.
- (3) demonstrate knowledge of the underlying principles, benefits, and limitations of selected physiological tests.
- (4) interpret and explain test results.
- (5) explain and apply corrective strategies to address impairments and muscular imbalances.
- (6) demonstrate sensitivity to age, gender, cultural, and other individual differences as they relate to the physiological assessment of human performance and application of corrective strategies.
- (7) demonstrate critical thinking and problem solving skills.

Methods

- (1) Lecture/discussion
- (2) Demonstration
- (3) Observation
- (4) Assigned readings
- (5) Laboratory experience – emphasis on hands-on practice to develop competence

Course Content

- (1) Anthropometry & body composition
 - (a) Height, weight, circumferences, bone diameters
 - (b) Bioelectrical impedance analysis (BIA)
 - (c) Skinfold measurements
 - (d) Hydrostatic weighing
 - (e) Air displacement plethysmography (Bod Pod)
 - (f) Dual-energy X-ray absorptiometry (DXA)

- (2) Pulmonary function
 - (a) Spirometry - static and dynamic lung volumes
 - (b) Environmental conditions
 - (c) Residual volume
- (3) Muscle length – goniometer, inclinometer
- (4) Postural assessment
- (5) Balance assessment – Biodex, field tests (e.g., Star excursion test, Berg balance test)
- (6) Strength & power assessment – Humac norm
- (7) Health & fitness assessment - Trifit, Cholestech
- (8) Biofeedback – skin conductance, skin temperature, respiration, EMG – time permitting
- (9) Miscellaneous topics
 - (a) Equipment calibration & operation
 - (b) Selection of tests
 - (c) Equipment specifications
 - (d) Analysis & interpretation of results

Required Texts/Readings

Heyward, V. H., & Wagner, D. R. (2004). *Applied body composition assessment* (2nd ed.). Champaign, IL: Human Kinetics. ISBN: 978-0-7360-4630-5

Course reader - available at 2nd class meeting; after 2nd class meeting, available at Maple Press (481 E. San Carlos, 297-1000)

Other assigned readings will be posted on Canvas

Battery-operated calculator

Library Liaison

The KIN library liaison is Emily Chan (emily.chan@sjsu.edu) 408-808-2044.

Assignments and Grading Policy

[Academic Policy S12-3](http://www.sjsu.edu/senate/S12-3.htm) at <http://www.sjsu.edu/senate/S12-3.htm> has defined expected student workload, applied to this course, as follows:

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of 45 hours for each unit of credit (normally 3 hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in [University Policy S12-3](http://www.sjsu.edu/senate/docs/S12-3.pdf) at <http://www.sjsu.edu/senate/docs/S12-3.pdf>.

NOTE that [University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) at <http://www.sjsu.edu/senate/docs/F69-24.pdf> states that “Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.”

Note that “All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades.” See [University Policy F13-1](http://www.sjsu.edu/senate/docs/F13-1.pdf) at <http://www.sjsu.edu/senate/docs/F13-1.pdf> for more details.

Evaluation	Weighting	KIN PLO	CLO
Anthropometric Lab	4%	1,2	1,3
BIA Lab	4%	1,2	1,3
Skinfold Lab	4%	1,2	1,3
Hydrostatic Weighing Lab	4%	1,2	1,3
Bod Pod Lab	4%	1,2	1,3
Spirometry Lab	6%	1,2	1,3
Muscle Length Lab	4%	1,2	1,3
Posture Lab	4%	1,2,3	1,3
Balance Lab	4%	1,2,3	1,3
Strength & Power Lab	4%	1,2	1,3
Trifit & Cholestech Lab	4%	1,2	1,3
Assessment Project	10%	1,2,3	12,3,4,6,7
Competencies	10%	1,2	1,2
Professionalism, Care of Equipment	4%	4	1
Quizzes & Pre-Labs	15%	1,2	1,3
Written Final Exam	15%	1,2	1,3,4,5,6,7

Labs and Assessment Project

Guidelines and forms are in the course reader. Refer to the class schedule for due dates. Written work must be typed or neatly hand-written. Remember to proofread and check for completeness before turning in.

Due Date	Received	Grade Lowered
Monday	After class Mon. through Wed.	1 grade step (e.g., B plus to B)
	Thurs. or Fri.	2 grade steps (e.g., B plus to B minus)
	Sat. through following Mon.	1 full grade (e.g., B plus to C plus)
Wednesday	After class Wed. through Fri.	1 grade step
	Sat. through Mon.	2 grade steps
	Tues. or following Wed.	1 full grade
Students must speak with the instructor regarding assignments that are over 1 week late.		

Competencies

Students will demonstrate competency on the following:

- Measuring height (1%)
- Measuring weight (1%)
- Measuring circumferences (2%)
- Measuring diameters (2%)
- Measuring skinfolds (2%)
- Measuring muscle length using a goniometer (2%)

Grading on competency tests:

A (95%) = excellent technique (performed smoothly & with confidence), accurate results

B (85%) = good technique, minor corrections needed

F (50%) = poor or weak technique, significant errors, questionable data

0 points = did not attempt competency

Students earning less than an A grade will receive feedback and may, after further practice, retake the competency on another day. If a student does not attempt a competency by the first deadline date, the score may be lowered one letter grade for each week, or part of a week, that the deadline is missed. The last day to complete all competencies is Monday, Dec. 7.

Professionalism, Care of Equipment

This is a professional preparation course. Students are expected to:

- Be fully prepared; actively and enthusiastically participate in all laboratory sessions and class discussions.
 - Read assigned material and lab instructions BEFORE class. (Lecture and lab time will be used to present material and help students master techniques. Students are directed to the green sheet and course reader for answers to many of their procedural questions.)
 - Bring textbook, calculator, course reader, and other necessary supplies to class.
 - Dress appropriately for scheduled activities.
- Participate in demonstrations and data collection.
- Enthusiastically serve as a client for others.
- PRACTICE, PRACTICE, PRACTICE techniques. Use your class time effectively! Ask for guidance from instructor if having difficulty mastering a technique.
- Complete assignments on time.
- Use equipment properly; clean and put away all equipment before leaving lab area.
- Keep lab clean. No food or drinks are allowed in the lab, except water.
- Maintain lab security (lock lab if leaving for even 1 min).

Students who consistently demonstrate professionalism, as described above, WILL be able to complete all lab assignments in a timely manner. Students who choose not to use laboratory time effectively may not complete all assignments, and should not expect the instructor to ensure that they do. In a lab-intensive class, if you fall behind it may be impossible to catch up.

The most effective class results when EACH class member makes an INDIVIDUAL COMMITMENT to be an active participant in the teaching/learning process. Individual contributions and differing viewpoints will be appreciated and respected. Students are responsible for material presented and announcements made in each class. Students who miss class (a rare occurrence!) are responsible for obtaining material from another student BEFORE seeing the instructor about content missed.

Quizzes & Written Final Exam

- In-class quizzes and the final exam will cover theoretical background, use of equipment, data collection and interpretation. The scantron 815E will be used for in-class quizzes. The final exam requires a scantron 882E.
- Questions may include true-false, multiple choice, short answer, problems, and calculations.
- Pre-lab questions will be completed online in Canvas. Pre-labs **MUST** be completed before 8:00 am on the due date. There is **no** make-up or second chance to complete the pre-lab questions, so **plan accordingly!** If you start early enough, you will have options if there are technological problems (e.g., on-campus computers if your computer breaks or you have internet connection problems). If you wait until the last

minute and there are technological problems, accept the consequences without complaint. The total points on the pre-lab questions will be equivalent to two quiz scores. Quiz 12 = pre-lab questions on skinfolds, hydrostatic weighing, and ADP. Quiz 13 = pre-lab questions on environmental conditions/spirometry and muscle length. Pre-lab questions are to be completed independently – NOT with another person or in a group. **Carefully read the [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) at <http://www.sjsu.edu/senate/docs/S07-2.pdf>. Violations will be reported with appropriate sanctions taken. Earning your college degree is important -- think carefully before jeopardizing your degree!**

- There are 11 in-class quizzes (Quizzes 1-11) and 5 sets of pre-lab questions, which count as Quizzes 12 and 13. Twelve of thirteen quiz scores will be counted; the lowest quiz score will be dropped.

Make-up exams are permitted only for illness and emergency (TRULY EXTRAORDINARY CIRCUMSTANCES). The student is responsible for notifying the instructor and making arrangements at the earliest possible time. In most cases, the quiz or exam must be completed before the next class meeting. All requests for make-up exams will be evaluated on an individual basis. Again, there is **NO MAKE-UP** for missed pre-lab questions.

Assignment of Grades

A plus = 97-100%

B plus = 87-89%

C plus = 77-79%

D plus = 67-69%

A = 93-96%

B = 83-86%

C = 73-76%

D = 63-66%

F = 0-59%

A minus = 90-92%

B minus = 80-82%

C minus = 70-72%

D minus = 60-62%

EXAMPLE

Component	% Earned	X	Points Possible	Points
Anthropometric Lab	90%	x	4	3.60
BIA Lab	94%	x	4	3.76
Skinfold Lab	82%	x	4	3.28
Hydrostatic Lab	85%	x	4	3.40
Bod Pod Lab	95%	x	4	3.80
Spirometry Lab	75%	x	6	4.50
Muscle Length Lab	78%	x	4	3.12
Posture Lab	94%	x	4	3.76
Balance Lab	92%	x	4	3.68
Strength & Power Lab	87%	x	4	3.48
Trifit & Cholestech Lab	95%	x	4	3.80
Assessment Project	88%	x	10	8.80
Competencies	95%	X	10	9.50
Professionalism	95%	x	4	3.80
Quizzes (including pre-labs)	Avg = 78%	x	15	11.70
Written Final Exam	84%	x	15	12.60
Total				86.58 B plus
0.5 and above rounded up; below 0.5 rounded down				

University Policies

General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU's policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arise. See [University Policy S90–5](http://www.sjsu.edu/senate/docs/S90-5.pdf) at <http://www.sjsu.edu/senate/docs/S90-5.pdf>. More detailed information on a variety of related topics is available in the [SJSU catalog](http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html), at <http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html>. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

Academic Integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San José State University. The [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) at <http://www.sjsu.edu/senate/docs/S07-2.pdf> requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available at <http://www.sjsu.edu/studentconduct/>.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Integrity Policy S07-2 requires approval of instructors.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the current academic year calendars document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/) at http://www.sjsu.edu/provost/services/academic_calendars/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes. Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

According to University policy, dropping this course after Sept. 1 is permissible for serious and compelling reasons beyond the student's control. Additional information is available at: <http://www.sjsu.edu/aars/policies/latedrops/policy/>. The last day to add is September 9; however, students who receive add codes should use them as soon as possible.

Campus Policy in Compliance with the Americans with Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. [Presidential Directive 97-03](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec) (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability. The AEC is located in ADM 110 (408-924-6000 [voice] or 408-924-5990 [TDD]).

Accommodation to Students' Religious Holidays

San José State University shall provide accommodation on any graded class work or activities for students wishing to observe religious holidays when such observances require students to be absent from class. It is the responsibility of the student to inform the instructor, in writing, about such holidays before the add deadline at the start of each semester. If such holidays occur before the add deadline, the student must notify the instructor, in writing, at least three days before the date that he/she will be absent. It is the responsibility of the instructor to make every reasonable effort to honor the student request without penalty, and of the student to make up the work missed. See [University Policy S14-7](http://www.sjsu.edu/senate/docs/S14-7.pdf) at <http://www.sjsu.edu/senate/docs/S14-7.pdf>.

Recording in Class

Common courtesy and professional behavior dictate that you notify individuals when you are recording them. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material." Recording any students during class activities requires permission of those individuals as well as permission from the instructor.

Course Materials

Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor-generated material for this course, such as exam or quiz questions, lecture notes, or hand-outs, without instructor consent.

Proposed Schedule

Schedule is subject to change with fair notice. Changes will be announced in class and/or sent via my.sjsu or Canvas.

Date	Topics	Readings	Due
Mon, Aug. 24	Lec: Introduction & Course Overview Body Composition Assessment Anthropometric Measurements Lab: Anthropometric Measurements (Height, Weight, Circumferences, Diameters)	Chaps. 1, 5	
Wed, Aug. 26	Lab: Height, Weight, Circs, Diams		
Mon, Aug. 31	Lec: BIA Lab: BIA, Height, Weight, Circs, Diams	Chaps. 6, 10	
Wed, Sept. 2	Lab: BIA, Height, Weight, Circs, Diams		
Mon, Sept. 7	LABOR DAY		
Wed, Sept. 9	Lab: BIA		CT: Height & Weight Anthropometric Lab
Mon, Sept. 14	Lec: Skinfolds Lab: Skinfolds, BIA Quiz 1: Anthropometric Measurements & BIA	Chaps. 2, 4	Pre-Lab: Skinfolds
Wed, Sept. 16	Lab: Skinfolds		CT: Circ or Diam. BIA Lab
Mon, Sept. 21	Lec: Hydrostatic Weighing Lab: Hydrostatic Weighing, Skinfolds Quiz 2: Skinfolds	pp. 27-33, 37-40, Chap. 15	Pre-Lab: Hydrostatic Weighing
Wed, Sept. 23	Lab: Hydrostatic Weighing		Skinfold Lab

Date	Topics	Readings	Due
Mon, Sept. 28	Lec: Air Displacement Plethysmography (ADP or Bod Pod) & DXA Lab: Bod Pod, DXA, Hydrostatic Weighing Quiz 3: Hydrostatic Weighing	pp. 33-37, 40-47, Chap. 11	Pre-Lab: ADP & DXA
Wed, Sept. 30	Lab: Bod Pod, DXA		CT: Skinfolds Hydrostatic Weighing Lab
Mon, Oct. 5	Lec: Spirometry Lab: Spirometry, Bod Pod, DXA Quiz 4: Bod Pod & DXA	Articles in course reader	Pre-Lab: Spirometry
Wed, Oct. 7	Lab: Spirometry		Bod Pod Lab & Body Comp Summary
Mon, Oct. 12	Lec: Spirometry Lab: Spirometry		
Wed, Oct. 14	Lab: Spirometry		
Mon, Oct. 19	Lec: Body Composition Summary Lab: Spirometry Quiz 5: Spirometry		
Wed, Oct. 21	Lab: Catch-Up		Spirometry Lab
Mon, Oct. 26	Lec: Muscle Length Lab: Muscle Length Quiz 6: Body Composition		Pre-Lab: Muscle Length
Wed, Oct. 28	Lab: Muscle Length		
Mon, Nov. 2	Lec: Posture Assessment Lab: Posture, Muscle Length Quiz 7: Muscle Length		
Wed, Nov. 4	Lab: Posture		CT: Muscle Length Muscle Length Lab

Date	Topics	Readings	Due
Mon, Nov. 9	Lec: Balance Assessment Lab: Balance, Posture Quiz 8: Posture		
Wed, Nov. 11	VETERANS DAY		
Mon, Nov. 16	Lec: Strength & Power Assessment Lab: Strength & Power, Balance, Posture Quiz 9: Balance		
Wed, Nov. 18	Lab: Humac Norm		Posture & Balance Labs
Mon, Nov. 23	Lec: Health/Fitness Screenings Lab: Trifit, Cholestech, Humac Norm Quiz 10: Strength & Power		Assessment Project
Wed, Nov. 25	Lab: Trifit & Cholestech		Strength & Power Lab
Mon, Nov. 30	Lec: Catch-Up Lab: Trifit & Cholestech Quiz 11: Health/Fitness Screenings		
Wed, Dec. 2	Lab: TBA		Trifit & Cholestech Lab
Mon, Dec. 7	Lec: Review Lab: TBA		Last Day for Competency Testing
Tues, Dec. 15 9:45-12:00	FINAL EXAM		

Chapters & page numbers in *Applied Body Composition Assessment* (2nd ed.). In addition, student should read the appropriate sections in the course reader or materials posted on Canvas.

CT = Competency Test – Deadline for **first** attempt at the competency