San José State University
CASA/Dept. of Kinesiology
KIN 157, Physiological Assessment, Fall 2017

Lecture

Instructor:	Peggy Plato, Ph.D.
Office Location:	SPX 174
Telephone:	(408) 924-3032
Email:	Peggy.Plato@sjsu.edu
Office Hours:	MW 1:00-2:30 pm Other times available by appointment
Class Days/Time:	M 9:30-10:20
Classroom:	SPX 160
Prerequisites:	Chem 30A, GE Math, Biol 66, KIN 70 (C- or better), KIN 155 (C- or better)

Labs

	10:30-12:20 MW	**12:30-2:20 MW**	**2:30-4:20 TR**
Instructor	Peggy Plato, Ph.D.	Areum Jensen, Ph.D.	Linda Wilkin, Ph.D.
Office Location	See Above	SPX 175	SPX 156
Telephone		(408) 924-8153	408-924-3010
Email		Areum.Jensen@sjsu.edu	Linda.Wilkin@sjsu.edu
Office Hours		MW 9:00-10:15 am Other times available by appt.	T 9:00-10:00 am
Classroom	YUH 233	YUH 233	YUH 233

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 be able to:

(1) explain, identify, and/or demonstrate the theoretical and/or scientific principles that can be used to address issues or problems in the sub-disciplines in kinesiology.

(2) effectively communicate in writing (clear, concise, and coherent) on topics in kinesiology.

(3) effectively communicate through an oral presentation (clear, concise, and coherent) on topics in kinesiology.

(4) utilize their experiences across a variety of health-related and skill-based activities to inform their scholarship and practice in the sub-disciplines in kinesiology.

(5) identify and analyze social justice and equity issues related to kinesiology for diverse 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 to assess 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) (Omron, Tanita scale, Biodynamics 4-electrode)
  (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 (Spiropet, Microspirometer, Collins respirometers, Medgraphics metabolic cart)
  (b) Environmental conditions
  (c) Residual volume (if time allows)

(3) Joint range of motion/muscle length – goniometer

(4) Posture assessment

(5) Balance assessment – Biodex, field tests (e.g., Y-balance test, BESS, Berg balance scale, Fullerton advanced balance scale)

(6) Strength & power assessment – Humac norm

(7) Health & fitness assessment – Polar Body Age, Cholestech

(8) Activity assessment – questionnaires, pedometers, activity trackers

(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 1st lecture; after this, available at Maple Press (330 S. 10th St., #200, 297-1000)

Other assigned readings will be posted on Canvas

Battery-operated calculator

Library Liaison

The KIN library liaison is Adriana Poo (adriana.poo@sjsu.edu) 408-808-2019.

Assignments and Grading Policy

Academic Policy S12-3 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 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

NOTE that University policy F69-24 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 at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

EVALUATION

Component	KIN PLO	CLO	% Earned	X	Points Possible	Points
Anthropometric Lab	1,4	1,3,4	90%	x	4	3.60
BIA Lab	1,4	1,3,4	94%	x	4	3.76
Skinfold Lab	1,4	1,3,4	82%	x	4	3.28
Hydrostatic Lab	1,4	1,3,4	85%	x	4	3.40
Bod Pod Lab	1,4	1,3,4	95%	x	4	3.80
Spirometry Lab	1,4	1,3,4	75%	x	4	3.00
Joint ROM/Muscle Length Lab	1,4	1,3,4	78%	x	4	3.12
Posture Lab	1,4	1,3,4	94%	x	4	3.76
Balance Lab	1,4	1,3,4	92%	x	4	3.68
Strength & Power Lab	1,4	1,3,4	87%	x	4	3.48
Activity Assessment Lab	1,4	1,3,4	95%	x	4	3.80
Health & Fitness Lab	1,4	1,3,4	88%	X	4	3.52
Assessment Project	1,2,4,5	1,2,3,4,5,6,7	88%	x	10	8.80
Competencies	1,4	1,2	95%	X	10	9.50
Professionalism	4	1	95%	x	2	1.90
Pre-Lab Questions	1	1,3	Avg = 91%	X	5	4.55
Quizzes	1	1,3	Avg = 74%	x	10	7.40
Written Final Exam	1,2,5	1,3,4,5,6,7	82%	x	15	12.30
				TOTAL		**86.65 B plus**
0.5 and above rounded up; below 0.5 rounded down						

Your laboratory instructor will assign 70% of the points in the class. The lecture instructor will assign 30% of the points in the class (pre-lab questions, quizzes, and the written final exam.

Labs and Assessment Project

Guidelines and forms are in the course reader and/or posted on Canvas. 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)
Tuesday	After class Tues. through Thurs.	1 grade step (e.g., B plus to B)
	Fri. or Sat.	2 grade steps (e.g., B plus to B minus)
	Sun. through following Tues.	1 full grade (e.g., B plus to C plus)
Wednesday .	After class Wed. through Fri.	1 grade step (e.g., B plus to B)
	Sat. through Mon.	2 grade steps (e.g., B plus to B minus)
	Tues. or following Wed.	1 full grade (e.g., B plus to C plus)
Thursday	After class Thurs. through Sat.	1 grade step (e.g., B plus to B)
	Sun. through Tues.	2 grade steps (e.g., B plus to B minus)
	Wed. through following Thurs.	1 full grade (e.g., B plus to C plus)
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 joint range of motion/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 listed on the laboratory schedule.

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 syllabus and course reader for answers to many of their procedural questions.)
  - Bring textbook, calculator, course reader or Canvas files, 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.

Pre-Lab Questions, 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. There are 12 in-class quizzes; the lowest quiz score will be dropped.
- Pre-lab questions will be completed online in Canvas. Pre-labs **MUST** be completed before 7:00 am on the due date. Each pre-lab will open at 7:00 pm the Thursday before 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. There are 9 sets of pre-lab questions; the lowest score will be dropped. The pre-lab questions will cover material from assigned readings, including your textbook and material posted on Canvas. You may refer to these assigned materials to complete the pre-lab questions; however, there is a time limit so you should be familiar with the material **BEFORE** starting the pre-lab questions. You may **NOT** consult with other people to complete the pre-lab questions – they **MUST** be completed independently – NOT with another person, in a group, or shared with others. **Carefully read the University Academic Integrity Policy S07-2 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!**

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%	A = 93-96%	A minus = 90-92%
B plus = 87-89%	B = 83-86%	B minus = 80-82%
C plus = 77-79%	C = 73-76%	C minus = 70-72%
D plus = 67-69%	D = 63-66%	D minus = 60-62%
	F = 0-59%	

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on the Office of Graduate and Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/

Academic Integrity

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. "Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development." For this class, all assignments are to be completed by the individual student unless otherwise specified.

Dropping and Adding

According to University policy, dropping this course after Sept. 6 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 13; however, students who receive add codes should use them as soon as possible.

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 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 Lecture 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. 28	BIA	Chaps. 6, 10	
Mon., Sept. 4	**LABOR DAY**		
Mon., Sept. 11	Skinfolds **Quiz 1:** Anthropometric Meas.	Chaps. 2, 4	**Pre-Lab:** Skinfolds
Mon., Sept. 18	Hydrostatic Weighing **Quiz 2: BIA**	pp. 27-33, 37-40, Chap. 15	**Pre-Lab:** Hydrostatic Weighing
Mon., Sept. 25	Air Displacement Plethysmography (ADP or Bod Pod) & DXA **Quiz 3:** Skinfolds	pp. 33-37, 40-47, Chap. 11	**Pre-Lab:** ADP & DXA
Mon., Oct. 2	Spirometry **Quiz 4:** Hydrostatic Weighing	Posted on Canvas	**Pre-Lab:** Spirometry
Mon., Oct. 9	Spirometry (con't) Body Comp Summary **Quiz 5**: Bod Pod & DXA		
Mon., Oct. 16	ROM/Muscle Length **Quiz 6:** Body Composition	Posted on Canvas	**Pre-Lab**: ROM/Muscle Length
Mon., Oct. 23	Posture Assessment **Quiz 7**: Spirometry	Posted on Canvas	**Pre-Lab**: Posture Assessment
Mon., Oct. 30	Balance Assessment **Quiz 8**: ROM/Muscle Length	Posted on Canvas	**Pre-Lab**: Balance
Mon., Nov. 6	Catch Up, TBA **Quiz 9:** Posture		
Mon., Nov. 13	Strength & Power Assessment **Quiz 10**: Balance	Posted on Canvas	**Pre-Lab**: Strength & Power
Mon., Nov. 20	Physical Activity Assessment	Posted on Canvas	**Pre-Lab:** Physical Activity Assessment

Date	Topics	Readings	Due
Mon, Nov. 27	Health & Fitness Screenings **Quiz 11:** Strength & Power	Posted on Canvas	
Mon., Dec. 4	TBA **Quiz 12:** Physical Activity Assmt.		
Mon., Dec. 11	Review		
Wed., Dec. 13 7:15-9:30 am	**FINAL EXAM**		

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

TBA = To Be Announced

Proposed Lab Schedule (MW Labs)

Date	Topics	Readings	Due
Wed., Aug. 23	Introduction & Course Overview Body Composition Assessment Anthropometric Measurements (Height, Weight, Circumferences, Diameters)	Chaps. 1, 5	
Mon., Aug. 28	BIA, Height, Weight, Circs, Diams		
Wed., Aug. 30	BIA, Height, Weight, Circs, Diams		
Mon., Sept. 4	**LABOR DAY**		
Wed., Sept. 6	BIA		Anthropometric Lab CT: Height & Weight
Mon., Sept. 11	Skinfolds, BIA		
Wed., Sept. 13	Skinfolds		BIA Lab
Mon., Sept. 18	Hydrostatic Weighing, Skinfolds		
Wed., Sept. 20	**NO 10:30 am LAB** **EXERCISE IS MEDICINE SEMINAR I ***		
Mon., Sept. 25	Bod Pod, Hydrostatic Weighing		Skinfold Lab
Wed., Sept. 27	Bod Pod, DXA, Hydrostatic Weighing		
Mon., Oct. 2	Spirometry, Bod Pod, DXA		Hydostatic Lab
Wed., Oct. 4	Spirometry, Bod Pod, DXA		Bod Pod Lab & Body Comp Summary CT: Circs & Diams
Mon., Oct. 9	Spirometry		
Wed., Oct. 11	Spirometry		CT: Skinfolds
Mon., Oct. 16	ROM/Muscle Length, Spirometry		
Wed., Oct. 18	ROM/Muscle Length		Spirometry Lab

Date	Topics	Readings	Due
Mon., Oct. 23	Posture, ROM/Muscle Length		
Wed., Oct. 25	Posture		ROM/Muscle Length Lab
Mon., Oct. 30	Balance, Posture		
Wed., Nov. 1	Balance		CT: Muscle Length Posture Lab
Mon., Nov. 6	Balance, Assessment Project		
Wed., Nov. 8	Assessment Project		Balance Lab
Mon., Nov. 13	Strength & Power		
Wed., Nov. 15	Strength & Power		
Mon., Nov. 20	Physical Activity Assessment, Strength & Power		Assessment Project
Wed., Nov. 22	**NO CLASS**		
Mon., Nov. 27	Health & Fitness Screenings, Physical Activity Assessment		Strength & Power Lab
Wed., Nov. 29	Health & Fitness Screenings, Physical Activity Assessment		
Mon., Dec. 4	Health & Fitness Screenings		Physical Activity Assessment Lab
Wed., Dec. 6	Open Lab		Health & Fitness Lab
Mon., Dec. 11	Last Day for Competency Testing		

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

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

*Attendance is expected between 10:30-12:00 for lab sec 2. Location TBA

Proposed Lab Schedule (TR Labs)

Date	Topics	Readings	Due
Thurs, Aug. 24	Introduction & Course Overview Body Composition Assessment Anthropometric Measurements (Height, Weight, Circumferences, Diameters)	Chaps. 1, 5	
Tues, Aug. 29	BIA, Height, Weight, Circs, Diams		
Thurs, Aug. 31	BIA, Height, Weight, Circs, Diams		
Tues, Sept. 5	BIA, Height, Weight, Circs, Diams		
Thurs, Sept. 7	BIA		Anthropometric Lab CT: Height & Weight
Tues, Sept. 12	Skinfolds, BIA		
Thurs, Sept. 14	Skinfolds		BIA Lab
Tues, Sept. 19	Hydrostatic Weighing, Skinfolds		
Thurs, Sept. 21	Hydrostatic Weighing, Skinfolds		
Tues, Sept. 26	Bod Pod, Hydrostatic Weighing		Skinfold Lab
Thurs, Sept. 28	Bod Pod, DXA, Hydrostatic Weighing		
Tues, Oct.3	Spirometry, Bod Pod, DXA		Hydostatic Lab
Thurs, Oct. 5	Spirometry, Bod Pod, DXA		Bod Pod Lab & Body Comp Summary CT: Circs & Diams
Tues, Oct. 10	Spirometry		
Thurs, Oct. 12	Spirometry		CT: Skinfolds
Tues, Oct. 17	ROM/Muscle Length, Spirometry		
Thurs, Oct. 19	ROM/Muscle Length		Spirometry Lab
Tues, Oct. 24	Posture, ROM/Muscle Length		

Date	Topics	Readings	Due
Thurs, Oct. 26	Posture		ROM/Muscle Length Lab
Tues, Oct. 31	Balance, Posture		
Thurs, Nov. 2	Balance		CT: Muscle Length Posture Lab
Tues, Nov. 7	Balance, Assessment Project		
Thurs, Nov. 9	Assessment Project		Balance Lab
Tues, Nov. 14	Strength & Power		
Thurs, Nov. 16	Strength & Power		
Tues, Nov. 21	Physical Activity Assessment, Strength & Power		Assessment Project
Thurs, Nov. 23	**THANKSGIVING HOLIDAY**		
Tues, Nov. 28	Health & Fitness Screenings, Physical Activity Assessment		Strength & Power Lab
Thurs, Nov. 30	Health & Fitness Screenings, Physical Activity Assessment		
Tues, Dec. 5	Health & Fitness Screenings		Physical Activity Assessment Lab
Thurs, Dec. 7	Last Day for Competency Testing		Health & Fitness Lab

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

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