

**Department of Kinesiology
San José State University
KIN 255, Advanced Exercise Physiology
Fall 2013**

Contact Information

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|-------------------------|--|
| Instructor: | Peggy Plato, Ph.D. |
| Office Location: | SPX 84 |
| Telephone: | (408) 924-3032 |
| Email: | Peggy.Plato@sjsu.edu |
| Office Hours: | Thursdays 11:00 am – 1:00 pm |
| Class Days/Time: | Tuesdays 4:00 – 6:45 pm |
| Classroom: | SPX 208 |
| Prerequisites: | KIN 155, an equivalent course, or instructor's permission. This course is intended for graduate students who have completed introductory courses in human physiology and exercise physiology. |

Course Description

Survey and critical evaluation of current concepts and literature regarding physiological regulatory mechanisms of oxygen transport and muscle metabolism. Both acute and chronic effects of exercise will be examined with emphasis placed on physiological limitations.

Graduate Program Learning Objectives (PLOs)

Upon successful completion of the Kinesiology graduate program, students will be able to:

- (1) conduct and critique research using theoretical and applied knowledge.
- (2) interpret and apply research findings to a variety of disciplines within Kinesiology.
- (3) effectively communicate essential theories, scientific applications, and ethical considerations in Kinesiology.
- (4) acquire skills to become agents of change to address issues in Kinesiology through the application of knowledge and research.

Course-Specific Student Learning Outcomes (SLOs)

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

- (1) identify and describe physiological factors underlying physical performance, including factors limiting performance, acute responses to exercise, and long-term training adaptations.
- (2) identify and describe the effects of physical activity on the aging process, and the relationship of physical activity and fitness to lifestyle-related diseases.
- (3) sensitively identify and explain age, gender, cultural, and other individual differences that may exist in physiological responses during exercise, long-term training adaptations, and performance capabilities in sports and physical activities.
- (4) effectively utilize traditional library resources as well as other technical and professional resources to obtain information on exercise physiology topics.
- (5) demonstrate skill in critical reading and evaluation of published research articles on exercise physiology topics.
- (6) demonstrate oral and written communication skills by participating in the exchange of new ideas and concepts related to class topics and projects.

Required Texts/Readings

McArdle, W.D., Katch, F.I., & Katch, V.L. (2009). *Exercise physiology: Energy, nutrition, and human performance* (7th ed). Baltimore, MD: Lippincott Williams & Wilkins.

Course reader available at Maple Press (481 E. San Carlos, 297-1000)

Library Liaison

The KIN library liaison is Silke Higgins (silke.higgins@sjsu.edu, 408-808-2020).

Evaluation and Grading

| | |
|------------------------------------|------|
| Written Critique | 7.5% |
| Presentation of Critiqued Study | 7.5% |
| Review Paper | 15% |
| Presentation of Review Paper | 10% |
| Contributions to Class Discussions | 10% |
| Midterm Exam | 25% |
| Final Exam (comprehensive) | 25% |

Grades signify the following quality of work:

A = Excellent, B = Good, C = Fair, D = Below Average, F = Unacceptable

Assignment of Grades

| | | |
|--------------------------|------------|-------------|
| A+ = 100-97% | A = 96-93% | A- = 92-90% |
| B+ = 89-87% | B = 86-83% | B- = 82-80% |
| C+ = 79-77% | C = 76-73% | C- = 72-70% |
| D+ = 69-67% | D = 66-63% | D- = 62-60% |
| F = 59-0% Unsatisfactory | | |

Example

| Component | PLO | SLO | Letter Grade | % | X | Points Possible | Points | |
|------------------------------------|-------|---------|--------------|----|---|-----------------|--------|---|
| Written Critique | 1,2 | 4,5,6 | B | 85 | x | 7.5 | 6.4 | |
| Presentation of Critiqued Study | 2,3 | 6 | B+ | 88 | x | 7.5 | 6.6 | |
| Review Paper | 2,3,4 | 1,4,5,6 | A- | 91 | x | 15 | 13.7 | |
| Presentation of Review Paper | 2,3 | 1,6 | A | 95 | x | 10 | 9.5 | |
| Contributions to Class Discussions | 3 | 1,2,3,6 | B | 85 | x | 10 | 8.5 | |
| Midterm | 2,3 | 1,3 | C+ | 78 | x | 25 | 19.5 | |
| Final Exam | 2,3 | 1,2,3 | B+ | 88 | x | 25 | 22.0 | |
| Total | | | | | | | 86.2 | B |

Written Critique

- This assignment provides an opportunity to develop analytic and critical reading skills. Each student will submit a written critique of a published research study (primary source, 2003 or later) pertaining to the scheduled topic for that evening. Select articles that are research presentations (introduction, methods, results, discussion format). A photocopy of the research article should be submitted the week before the class presentation. For the written critique, state the purpose of the study (1-2 sentences), then critique the study; do not summarize the study. Refer to the IFIC article for suggestions on how to critique a study. Grading will be based on quality of content, identification of strengths and weaknesses of the study, quality of writing (syntax, grammar, spelling), and adherence to assignment guidelines.
- Critiques should be typed, double-spaced, using a 12-point (or easily readable) font and 1" margins. Critiques should not exceed 3 pages.

Presentation of Critiqued Study

- This assignment provides the opportunity to develop oral communication skills and to practice presenting concepts and ideas. Students will present the study that was critiqued in the written paper. The presentation to the class is different from the critique. (In the written critique, the science, methodology, results, and conclusions are critically evaluated.) During the presentation, students should provide a brief background for the study, including purpose and hypothesis. Explain the methods in sufficient detail for class members to understand the study; present some of the pertinent results (it is not necessary to present all the data and results); and summarize the findings/conclusions. In the oral presentation, you present the study as though you conducted it; in the written critique, you critically evaluate the study. The presentation should last between 7-10 minutes. Less than 7 minutes is too short; presenters will be stopped at 10 minutes. Following the presentation, the paper is open for class discussion. At this time, discussion should focus on the study, including the quality of the science. Care should be taken to select an article that is relevant to the topic for the class, and which you feel you can present well. It may be necessary to do additional research to explain the background for the study and/or the methods used to conduct the research. Remember to submit a photocopy of the research article 1 week before your scheduled presentation.
- Evaluation will be based on: adherence to time limit, connection with audience (rapport, poise, ability to interest audience), content, application of study, and delivery (clarity, organization, voice, pace, use of audio-visual aids).

Review Paper

- This assignment provides the opportunity to complete an in-depth review of a specific, well-defined area of interest.
- Students will write an original (not previously submitted or being submitted for another class), comprehensive review paper that focuses on one physiological factor affecting human performance.
- The paper should synthesize information from a minimum of 10 primary research articles (generally published since 2003).
- The paper should be a minimum of 2000 words and not exceed 3000 words (approx. 8-12 pages in length, not including abstract and reference list), typed, double-spaced, using a 12 point (or easily readable) font and 1" margins.
- All references must be appropriately cited in the text and reference list using APA format (6th edition). Papers that deviate significantly from this format will be rejected (just as journal editors and Graduate Studies will reject papers or theses that fail to use the proper format). Carefully review the attached information on plagiarism. Use of direct quotations should be LIMITED (less than 100 words)! The reference list only contains references cited in the paper. (Note: Students in majors other than Kinesiology may use the citation style appropriate for their discipline.)

- Headings are helpful to direct the reader's attention to the major subtopics.
- When writing the paper, tell the reader what you will cover (introduction), cover the material (body of paper), and tell the reader what you covered (summary/conclusions).
- An abstract of the paper should be provided for each class member.
- Evaluation will be based on: quality of abstract; organization of paper; introduction of topic; review of the literature (content depth and quality, as well as integration of primary references); summary; utilization of appropriate, primary research articles; and quality of writing (syntax, grammar, spelling, conciseness, coherence).

Presentation of Review Paper

- This assignment provides the opportunity to develop oral communication skills in a format similar to that which is used at annual meetings of professional organizations such as ACSM, NATA, NSCA, and AAHPERD.
- Students will present a 8-10 minute summary of their papers followed by a question and answer period. Provide "take home" points for the audience.
- Evaluation will be based on: adherence to time limit, connection with audience (rapport, poise, ability to interest audience), content, application, and delivery (clarity, organization, voice, pace, use of audio-visual aids).

Midterm and Final Exams

- Exams provide the opportunity to demonstrate mastery of course content. Exams may include true-false, multiple choice, matching, and essay questions that require integration and synthesis of knowledge. Excellent responses will demonstrate advanced and in-depth understanding of physiological systems, factors limiting performance, acute responses to exercise, and long-term training adaptations. Responses should include material from assigned readings, class discussions, and presentations by other students.
- Exams are to be taken on the dates scheduled. The final exam will NOT be given early. 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 midterm exam must be completed before the next class meeting. All requests for make-up exams will be evaluated on an individual basis.

Policies and General Information

Class Structure

This course will be conducted using a combined lecture and seminar format. Lecture material will be integrated with class discussion and research presented by students. All students should be prepared to discuss and exchange information during each class session. Students will sign up to present information from published research reports, and students will present and exchange information from their review papers.

Consistent with University policy, 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, etc.

Participation

Because this course uses a lecture/seminar format, all students are expected to actively participate in, and contribute to, each class. This requires that students are prepared to discuss assigned readings, respond to material presented, and contribute their unique thoughts and knowledge. 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.

Late Assignments

All written assignments are due on the scheduled date. Late work may be graded down as follows: Papers submitted Tuesday after class through Wednesday drop 1 grade step (e.g., A → A-, B+ → B). Papers turned in Thursday through Friday drop 2 grade steps (e.g., A → B+). Papers turned in Saturday through the following Tuesday drop 1 full grade (e.g., A → B). Students should talk with the instructor if a paper cannot be completed within 1 week of the due date.

In most cases, oral presentations will not be rescheduled, and students will receive a 0 score if unable to present when scheduled. Truly extraordinary circumstances should be discussed with the instructor at the earliest possible moment.

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.drc.sjsu.edu/) at <http://www.drc.sjsu.edu/> to establish a record of their disability.

Academic Integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose 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. All assignments submitted for a grade must be original and the work of the student. 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.

Consent for Recording of Class and Public Sharing of Instructor Material

[University Policy S12-7](http://www.sjsu.edu/senate/docs/S12-7.pdf), <http://www.sjsu.edu/senate/docs/S12-7.pdf>, requires students to obtain instructor's permission to record the course. "Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. 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." During class discussions, permission of students should be obtained as well.

"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 questions, lecture notes, or homework solutions without instructor consent."

Enrollment

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 calendar document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/) at http://www.sjsu.edu/provost/services/academic_calendars/. September 3 is the last day to drop this course without a "W" being assigned. According to University policy, dropping this course after Sept. 3 "is permissible only for serious and compelling reasons. Unsatisfactory performance in coursework is not a serious and compelling reason in itself for requesting permission to drop" (SJSU 2008-2010 Catalog, p. 480). The last day to add is September 10; however, students who receive add codes should use them as soon as possible. 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/>.

SJSU Writing Center

The SJSU Writing Center is located in Clark Hall, Suite 126. All writing specialists have gone through a rigorous hiring process, and they are well trained to assist students at all levels to become better writers. In addition to one-on-one tutoring services, the Writing Center also offers workshops each semester on a variety of writing topics. To make an appointment or to refer to the numerous online resources offered through the Writing Center, visit the [Writing Center website](http://www.sjsu.edu/writingcenter) at <http://www.sjsu.edu/writingcenter>.

PLAGIARISM

"Plagiarism in student writing is often unintentional, as when an elementary school pupil, assigned to do a report on a certain topic, goes home and copies down, word for word, everything on the subject in an encyclopedia. Unfortunately, some students continue to use such 'research methods' in high school and even in college without realizing that these practices constitute plagiarism. You may certainly use other persons' words and thoughts in your research paper, but you must acknowledge the authors" (Gibaldi & Achtert, 1988, p. 22).

Writing research papers requires that you use the work and ideas of others; however, these ideas are the property of the original author -- the original author **MUST** be indicated by a reference citation [e.g., (author, year), footnote, or (#) corresponding to the citation in the reference list]. Every source listed in the reference list must be cited in your paper, and every source cited in your paper must be included in the reference list. (Exception: Personal communications are cited in the paper, but are not included in the reference list.) It is not necessary to cite sources of common knowledge; common knowledge is what any knowledgeable person in the field would know (Corder & Ruszkiewicz, 1989). However, any information that is not common knowledge **MUST** be cited whether or not it is a direct quotation. If in doubt, credit your source.

Example:

In general, physical activity is associated with positive psychological well-being in older adults (McAuley & Rudolph, 1995). However, training programs designed to improve physical fitness are not always associated with enhanced psychological well-being. Nieman, Warren, Dotson, Butterworth, and Henson (1993) found that women aged 67-85 years who participated in a 12 week walking program improved aerobic capacity 12.6%, but did not significantly improve psychological well-being or mood state compared to a control group that participated in mild stretching exercises.

To avoid unintentional plagiarism, read the reference, then **SET IT ASIDE** while you summarize what you read **IN YOUR OWN WORDS**. You may **THEN** go back to the reference to check the accuracy of your notes and to ensure that you have not inadvertently taken direct quotes from the reference. **DO NOT TAKE NOTES DIRECTLY FROM THE REFERENCE** and **DO NOT WRITE YOUR PAPER DIRECTLY FROM YOUR REFERENCES** -- plagiarism frequently results from these practices.

When taking notes, you may paraphrase the author's words or you may summarize the author's words. In both cases, you **MUST** cite the original author. "If you merely rearrange a few words in an original passage, or include a few words of your own, and then pass the idea along as yours, you have committed plagiarism" (Bingham, 1982, p. 163).

Direct quotations should be used VERY SPARINGLY. It is appropriate to use direct quotations in the following circumstances: (a) when giving the wordings of laws and official rulings (b) when exact wording is crucial (c) when the original is worded so well that you cannot improve upon it (Campbell & Ballou, 1978). Direct quotations must be indicated by quotation marks (longer passages may require block quotations, depending on the style manual used). When citing direct quotations, include the page number in the reference citation.

If you do not sufficiently understand what you have read to summarize and integrate it into your paper, do NOT use that reference. It is NOT acceptable to use a direct quotation in place of understanding the ideas.

Bingham, E. G. (1982). *Pocketbook for technical and professional writers*. Belmont, CA: Wadsworth.

Campbell, W. G., & Ballou, S. V. (1978). *Form and style. Theses, reports, term papers* (5th ed.). Boston: Houghton Mifflin.

Corder, J. W., & Ruszkiewicz, J. J. (1989). *Handbook of current English* (8th ed.). Glenview, IL: HarperCollins.

Gibaldi, J., & Ahtert, W. S. (1988). *MLA handbook for writers of research papers* (3rd ed.). New York: Modern Language Association of America.

McAuley, E., & Rudolph, D. (1995). Physical activity, aging, and psychological well-being. *Journal of Aging and Physical Activity*, 3, 67-96.

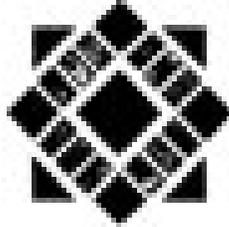
Nieman, D. C., Warren, B. J., Dotson, R. G., Butterworth, D. E., & Henson, D. A. (1993). Physical activity, psychological well-being, and mood state in elderly women. *Journal of Aging and Physical Activity*, 1, 22-33.

Note: For professional journal articles, cite the following information:

Author(s), (Year of publication), Article title, *Journal title*, *Volume number of journal*, Inclusive page numbers. doi

For on-line professional journal articles, cite the above information, if available, AND include the URL. Example:

Fredrickson, B. L. (2000). Cultivating positive emotions to optimize health and well-being. *Prevention & Treatment*, 3, Article 0001a. Retrieved from <http://journals.apa.org/prevention/volume3/pre003001a.html>



San José State **UNIVERSITY**

The following information on academic integrity has been excerpted from the San José State University Academic Integrity Policy (policy S04-12). The complete policy is available at <http://www2.sjsu.edu/senate/S04-12.pdf>.

ACADEMIC INTEGRITY POLICY

The University emphasizes responsible citizenship and an understanding of ethical choices inherent in human development. Academic honesty and fairness foster ethical standards for all those who depend upon the integrity of the university, its courses, and its degrees. This policy sets the standards for such integrity and shall be used to inform students, faculty and staff of the university's Academic Integrity Policy. The public is defrauded if faculty and/or students knowingly or unwittingly allow dishonest acts to be rewarded academically and the university's degrees are compromised.

Student Role

It is the role and obligation of each student to:

1. Know the rules that preserve academic integrity and abide by them at all times. This includes learning and following the particular rules associated with specific classes, exams and/or course assignments. Ignorance of these rules is not a defense to the charge of violating the Academic Integrity Policy.
2. Know what the consequences of violating the Academic Integrity Policy will be, students' appeal rights, and the procedures to be followed in the appeal.
3. Foster academic integrity among peers.

1.0 Definitions of Academic Dishonesty

1.1 Cheating

At SJSU, cheating is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. Cheating at SJSU includes but is not limited to:

- 1.1.1 Copying, in part or in whole, from another's test or other evaluation instrument including homework assignments, worksheets, lab reports, essays, summaries, quizzes, etc.;
- 1.1.2 Submitting work previously graded in another course unless this has been approved by the course instructor or by departmental policy;
- 1.1.3 Submitting work simultaneously presented in two courses, unless this has been approved by both course instructors or by the department policies of both departments;
- 1.1.4 Using or consulting, prior to, or during an examination, sources or materials not authorized by the instructor;
- 1.1.5 Altering or interfering with the grading process;
- 1.1.6 Sitting for an examination by a surrogate, or as a surrogate;
- 1.1.7 Any other act committed by a student in the course of their academic work which defrauds or misrepresents, including aiding or abetting in any of the actions defined above.

1.2 Plagiarism

At SJSU plagiarism is the act of representing the work of another as one's own without giving appropriate credit, regardless of how that work was obtained, and/or submitting it to fulfill academic requirements. Plagiarism at SJSU includes but is not limited to:

- 1.2.1 The act of incorporating the ideas, words, sentences, paragraphs, or parts of, and/or the specific substance of another's work, without giving appropriate credit, and/or representing the product as one's own work;
- 1.2.2 Representing another's artistic/scholarly works such as musical compositions, computer programs, photographs, paintings, drawing, sculptures, or similar works as one's own.

2.0 Notification of Standards of Detecting Plagiarism

- 2.1 SJSU or its faculty may subscribe to and/or use plagiarism detection services.

Proposed Schedule

Subject to change with fair notice

| DATE | TOPIC | READING ASSIGNMENT |
|----------|--|---|
| Aug. 27 | Introduction to Course and Factors Limiting Performance; Introduction to Bioenergetics | |
| Sept. 3 | Bioenergetics, Nutrients & Exercise | Chaps. 4-8 Rankin, 2000 Hargreaves, 2005 |
| Sept. 10 | Bioenergetics, Nutrients & Exercise Cardiovascular System | Cairns, 2006 Chaps. 15-17 |
| Sept. 17 | Cardiovascular System & Aerobic Training | Chap. 21 Jones & Carter, 2000 |
| Sept. 24 | Pulmonary System Lab | Chaps. 12-14 Sheel & Guenette, 2008 |
| Oct. 1 | Pulmonary System Catch-Up & Review Topic for Review Paper Due | |
| Oct. 8 | MIDTERM EXAM | |
| Oct. 15 | Neuromuscular System Exercise-Induced Muscle Damage | Chaps. 18-19 Tee et al., 2007 |
| Oct. 22 | Anaerobic & Resistance Training Concurrent Training Detraining | Chap. 22 (skim) Folland & Williams, 2007 |
| Oct. 29 | Endocrine Regulation | Chap. 20 Crewther et al., 2006 Vingren et al., 2010 |
| Nov. 5 | Physical Activity, Fitness, & Health | Chap. 31, skim Chap. 32 Cotman & Engesser-Cesar, 2002 Ferris et al., 2007 Wannamethee & Shaper, 2001 |
| Nov. 12 | Physical Activity & Aging | Chap. 31 Hawkins & Wiswell, 2003 Murias et al., 2010 Hunter et al., 2004 |
| Nov. 19 | Catch Up, TBA REVIEW PAPERS DUE | |

| DATE | TOPIC | READING ASSIGNMENT |
|-------------------------|----------------------------|---------------------------|
| Nov. 26 | Review Paper Presentations | |
| Dec. 3 | Review Paper Presentations | |
| Dec. 17 5:15-7:30 pm | FINAL EXAM | |