

Department of Kinesiology
Kin 256 – Environmental Exercise Physiology, Section 01
Spring Semester, 2015

Contact Information

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Office Hours:	W 1100-1400 (Posted Outside of YuH 242)
Class Days/Time:	W 1600-1845
Classroom:	YuH 233
Prerequisites:	Kin 155 – Exercise Physiology or equivalent

Faculty Web Page and MYSJSU Messaging (Optional)

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on my faculty web page at <http://www.sjsu.edu/people/craig.cisar/courses/kin256/>. You are responsible for regularly checking with the messaging system through MySJSU (or other communication system as indicated by the instructor) to learn any updates.

Course Description

Survey and critical evaluation of current concepts and literature regarding various environmental (heat, cold, altitude, etc.) conditions as they affect the typical responses to exercise. Both acute effects and chronic adaptations will be examined. KIN 155 - Exercise Physiology or equivalent is a pre-requisite.

Course Goals and Learning Objective

Graduate Program Learning Outcomes (PLOs)

Upon successful completion of this course, students will:

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 Learning Outcomes (CLOs)

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

1. demonstrate an understanding of the current concepts and research literature in the area of environmental effects on physical work capacity and physiological responses to exercise.
2. demonstrate an understanding of the limitations imposed by the environment on human performance.
3. sensitively identify and explain age, gender, cultural, and other individual differences that may exist in acute physiological responses, chronic adaptations, and performance capabilities under various environmental extremes.
4. demonstrate proficiency in the ability to read, understand, and critically evaluate the literature in environmental exercise physiology.
5. demonstrate skill in writing abstract summaries of published research articles and a review of literature.
6. have acquired the skills which will enable them to integrate and synthesis physiological principles and concepts related to environmental factors into coherent models and apply these models in the evaluation of factors limiting human performance.
7. demonstrate skill in oral presentations of abstracts and review of literature topic.
8. have had the opportunity to participate in the exchange of new ideas and concepts in the area of environmental exercise physiology.

Required Texts/Readings

Textbook and Course Reader

1. Cheung, S.S. (2010). Advanced Environmental Exercise Physiology. Champaign, IL: Human Kinetics.
2. Cisar, C. J. (2013). Environmental Exercise Physiology Notebook. San Jose, California: Maple Press (available at Maple Press, 481 East San Carlos).

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three 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>.

1. Students will be required to read two research articles pertaining to current weekly topics during the semester. Students will be required to submit a brief abstract of each article indicating the purpose, methods, results, conclusions, strengths and weaknesses (if any), and practical applications of the research study. Students should submit a copy of the research article along with the prepared abstract.

Students are responsible for making a copy of their abstracts for each of the other students in the class. The abstracted article must directly relate to the topic for the week in which it is prepared and submitted. Only one abstract can be submitted for credit on a given weekly topic. Students are expected to present a brief PowerPoint overview and discuss their abstracted articles with the other students in the class as well as relate their abstracted articles to the weekly lecture topic.

2. A review paper, which identifies and focuses on at least one environmental factor limiting human performance will be written. The review of literature should focus on the physiological mechanisms affected by the environmental factor(s). The review paper should contain a minimum of 10 primary (refereed) references and these references should be integrated into a physiological model, which has application and implications for an area of physical performance. Citation of the actual data collected in research studies is desirable when appropriate. The review paper must be an original paper written exclusively for this course. Referencing and text citations should be done in American Psychological Association (APA) format. The paper should be double-spaced, typed, and approximately 10-12 pages in length. Students should submit an electronic copy of the paper for grading. In addition, students should type a brief abstract of their paper and copies of the abstract will be distributed to the other members of the class. Also, a copy of the abstract should be included in the front of the paper submitted for grading. It is recommended that students discuss and clear their topic with the instructor prior to writing the review paper. The electronic submission of the paper is due on or before the beginning of class on May 13, 2013. Electronic submission of the paper will not be accepted late. Students will present a brief informal summary presentation of their review paper to the class. Grades for the review paper and presentation will be based on the following criterion: quality of paper abstract, purpose of assignment, organization of paper, grammar and spelling in paper, paper introduction, body of review in the paper (content depth and quality as well as inclusion of data-based research), paper summary, citations and references within the paper, utilization of primary (refereed) research articles, and presentation of the paper on May 13, 2013.
3. Two written examinations will be given during the course. The second examination will not be cumulative. Both examinations will consist of objective examination questions (i.e., multiple choice, matching, and true-false questions).

Grading Policy

Grading will be as follows:

Two written examinations (25% each)	50%
Two abstracted research articles (5% each)	10%
Review paper and presentation	30%
Contributions to class discussions	<u>10%</u>
	100%

Final grades will be assigned as follows:

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%		

Classroom Protocol

This course will be conducted both as lecture and as a seminar. Each class period will consist of both a lecture and discussion over the assigned readings for the week. In addition, the research articles abstracted by the students will be presented and integrated into the discussion portion of the class. Students should be prepared to discuss and exchange the information in their abstracted articles and their ideas with the other students during the discussion portion of class. Effective utilization of these course procedures should enhance the development of an advanced knowledge and understanding of environmental exercise physiology within the students during the semester.

University Policies

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 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 at http://www.sjsu.edu/provost/services/academic_calendars/. The Late Drop 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 at <http://www.sjsu.edu/advising/>.

Consent for Recording of Class and Public Sharing of Instructor Material

University Policy S12-7, <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.”
 - The students have the permission of the instructor to make audio or video recordings of the class during the semester.
 - In classes where active participation of students or guests may be on the recording, permission of those students or guests 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.”

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 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 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.

Campus Policy in Compliance with the American 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 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 (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability.

In 2013, the Disability Resource Center changed its name to be known as the Accessible Education Center, to incorporate a philosophy of accessible education for students with disabilities. The new name change reflects the broad scope of attention and support to SJSU students with disabilities and the University's continued advocacy and commitment to increasing accessibility and inclusivity on campus.

Student Technology Resources (Optional)

Computer labs for student use are available in the Academic Success Center at <http://www.sjsu.edu/at/asc/> located on the 1st floor of Clark Hall and in the Associated Students Lab on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.

A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include DV and HD digital camcorders; digital still cameras; video, slide and overhead projectors; DVD, CD, and audiotape players; sound systems, wireless microphones, projection screens and monitors.

SJSU Peer Connections (Optional)

Peer Connections, a campus-wide resource for mentoring and tutoring, strives to inspire students to develop their potential as independent learners while they learn to

successfully navigate through their university experience. You are encouraged to take advantage of their services which include course-content based tutoring, enhanced study and time management skills, more effective critical thinking strategies, decision making and problem-solving abilities, and campus resource referrals.

In addition to offering small group, individual, and drop-in tutoring for a number of undergraduate courses, consultation with mentors is available on a drop-in or by appointment basis. Workshops are offered on a wide variety of topics including preparing for the Writing Skills Test (WST), improving your learning and memory, alleviating procrastination, surviving your first semester at SJSU, and other related topics. A computer lab and study space are also available for student use in Room 600 of Student Services Center (SSC).

Peer Connections is located in three locations: SSC, Room 600 (10th Street Garage on the corner of 10th and San Fernando Street), at the 1st floor entrance of Clark Hall, and in the Living Learning Center (LLC) in Campus Village Housing Building B. Visit Peer Connections website at <http://peerconnections.sjsu.edu> for more information.

SJSU Writing Center (Optional)

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 all students at all levels within all disciplines to become better writers. In addition to one-on-one tutoring services, the Writing Center also offers workshops every 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 at <http://www.sjsu.edu/writingcenter>. For additional resources and updated information, follow the Writing Center on Twitter and become a fan of the SJSU Writing Center on



Facebook. (Note: You need to have a QR Reader to scan this code.)

SJSU Counseling Services (Optional)

The SJSU Counseling Services is located on the corner of 7th Street and San Fernando Street, in Room 201, Administration Building. Professional psychologists, social workers, and counselors are available to provide consultations on issues of student mental health, campus climate or psychological and academic issues on an individual, couple, or group basis. To schedule an appointment or learn more information, visit Counseling Services website at <http://www.sjsu.edu/counseling>.

Tentative Course Schedule

Topic	Date
Introduction to Course	1-28
General Environmental Influences on Physical Activity	1-28
General Characteristics of the Thermal Environment and Mechanisms of Thermal Regulation	2-4
Biophysics of Heat Transfer and General Clothing Considerations	2-4
Basic Mechanisms of Thermal Regulation and Acute Physiological Responses to Heat Stress During Exercise	2-11
Hypohydration, Hyperhydration, and Body Fluid Responses	2-11
Adaptations to Heat Stress	2-18
Physical Training, Cardiorespiratory Fitness, and Exercise-Heat Tolerance	2-18
Effects of Gender, Circadian Rhythms, Sleep, and Age on Thermal Responses During Exercise	2-25
Acute Cold Responses	3-4
Adaptations to the Cold and the Effects of Physical Training on Cold Tolerance	3-11
First Lecture Examination	3-18
Spring Break – No Class	3-25
Acute Effects of High Altitude	4-1
Adaptations to High Altitude and the Effects of Training at Altitude	4-8
Hyperoxia and Hyperbaria	4-15
Air Pollution	4-22
Global Warming and Other Sustainability Issues Related to Human Performance	4-29
Microgravity	5-6
Student Review Paper Presentations	5-13
Second Lecture Examination (17:15-19:30)	5-20