

**Department of Kinesiology**  
**Kin 256 – Environmental Exercise Physiology, Section 01**  
**Spring Semester, 2021**

**Contact Information**

<b>Instructor:</b>	Craig J. Cisar, Ph.D., FACSM, CSCS, NSCA-CPT, ACSM-ETT
<b>Office Location:</b>	SPX 117
<b>Telephone:</b>	(408) 649-4520
<b>Email:</b>	craig.cisar@sjsu.edu
<b>Office Hours:</b>	Virtual MW 9:30-10:30 AM and by appointment via email and telephone conference.
<b>Class Days/Time:</b>	Asynchronous Online Course – No Scheduled Days and Times
<b>Classroom:</b>	Asynchronous Online Course – No Scheduled Classroom
<b>Prerequisites:</b>	Kin 155 – Exercise Physiology or equivalent

**Faculty Web Page and MYSJSU Messaging (Optional)**

Course materials such as PowerPoint presentations can be found on my faculty web page at <http://www.sjsu.edu/people/craig.cisar/courses/kin256/>. You are responsible for regularly checking your email address used to register for the course to receive all course information and material as well as exams and 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 (PLO 1, 2, and 4).
2. demonstrate an understanding of the limitations imposed by the environment on human performance (PLO 2 and 4).
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 (PLO #3 and 4).
4. demonstrate proficiency in the ability to read, understand, and critically evaluate the literature in environmental exercise physiology (PLO #1, 3, and 4).
5. demonstrate skill in writing abstract summaries of published research articles and a review of literature (PLO 1 and 3).
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 (PLO 1, 2, 3, and 4).
7. demonstrate skill in oral presentations of abstracts and review of literature topic (PLO 1, 2, 3, and 4).
8. have had the opportunity to participate in the exchange of new ideas and concepts in the area of environmental exercise physiology (PLO 2, 3, and 4).

### **Classroom Protocol**

This course is an online asynchronous course, which will not meet during the semester.

This course was originally scheduled to meet in person on Tuesday's from 4:00-6:45 PM. Although we will not be meeting during the semester, the tentative course syllabus was developed based on the Tuesday 4:00-6:45 PM format. Students are responsible for information and material in the weekly lecture sessions identified in the tentative course schedule, which will be sent to the email address that was used to enroll in the course. Check your email regularly for incoming lecture information and material, student research abstracts and PowerPoint presentations, student review paper abstracts, student class contributions, and exams, which will be emailed to you by the instructor. Communication with the instructor can best be accomplished via email. Please email the instructor directly at [craig.cisar@sjsu.edu](mailto:craig.cisar@sjsu.edu) with all questions, issues, and concerns rather than reply to mass emails sent to all students. Phone conferences with the instructor can also be arranged by appointment made through email as needed. 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.

## Required Texts/Readings

### Course Reader and Other Materials

1. Cisar, C. J. (2020). Environmental Exercise Physiology Notebook. San Jose, California: Maple Press (available at Maple Press, 481 East San Carlos). The course reader can be ordered for mail delivery at (408)297-1000 or <https://maplepress.net/readers/>.
2. Computer with printer/scanner, calculator, and cell phone.

### Course Requirements and Assignments

1. 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>.
2. Exams will be conducted as individual effort open book exams, which will be sent to you via email with a blank answer sheet to use. You will have approximately 6 hours from 3:00 PM TO 9:00 PM to complete each exam. The first exam is scheduled for Tuesday, March 23<sup>rd</sup>, and the second lecture exam is scheduled for May 25<sup>th</sup>, as indicated in the tentative course schedule. The second exam is not a cumulative exam. The exams will be objective exams consisting of multiple choice, matching, and/or true-false questions covering lecture information and material presented by the instructor, student research abstracts and PowerPoint presentations, student review paper abstracts, and student class contributions covered during the first half of the course (first/mid-term lecture exam) and during second half of the course (second/final lecture exam). **EXAMS WILL BE GIVEN AT THE SCHEDULED DAY AND TIME ONLY AND NO MAKE-UP EXAMS WILL BE GIVEN**, except for dire and serious illnesses. If this should occur, the instructor must be notified personally PRIOR to the exam. Students should be aware that more than a superficial understanding of concepts would be necessary in order to apply the information in class exam questions.
3. Students will be required to read and critique one research article pertaining to the current weekly topic during the semester. See the tentative course schedule as the end of this syllabus. Students will be required to submit an abstract critique of each article indicating the purpose, methods, results, conclusions, strengths and weaknesses, and practical applications of the research study. Students should submit a copy of the research article along with the prepared abstract to the instructor. The abstracted article must directly relate to the topic for the week in which it is prepared and submitted. Students are also required to prepare a PowerPoint presentation of the abstract critique and send it also to the instructor. The instructor will distribute both the written abstract and PowerPoint presentation to the other students in the course.
4. 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 human 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 a double-spaced, typed, and approximately 10-12 page in length. Students should submit an electronic copy of the paper for grading to [craig.cisar@sjsu.edu](mailto:craig.cisar@sjsu.edu). In addition, students should type a brief abstract of their paper and the instructor will distribute copies of the abstract 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 11, 2021. Electronic submission of the paper will not be accepted late. Grades for the review paper 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, and utilization of primary (refereed) research articles.

- There are 12 days of course topics listed in the tentative course schedule, 6 in the first half of the course and 6 in the second half of the course. Students will select 5 of the course topic days to find an environmental article on the course topic and write a brief abstract (250 words or less) critiquing summarizing the article and findings. The environmental article can come from research studies, Internet postings, textbooks, and perhaps other sources. The class contribution is due on the day of the course topic day. The class contribution should be emailed to [craig.cisar@sjsu.edu](mailto:craig.cisar@sjsu.edu). Each class contribution is worth 2 points.

## Grading Policy

Grades will be based solely on accumulated points in the following manner.

	<u>Points</u>
Two Examinations - 25 Points Each (PLO 2, 3, and #4)	50
Abstract research article critique and PowerPoint presentation (PLO 1, 2, 3, and 4)	10
Review paper and abstract (PLO 1, 2, 3, and 4)	30
Class Contributions (PLO 1, 2, 3, and, 4)	<u>10</u>
<b>Total Points</b>	<b>100</b>

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

A plus	98 to 100	B plus	88 to 89	C plus	78 to 79	D plus	68 to 69
A	92-97	B	82 to 87	C	72 to 77	D	62 to 67
A minus	90 to 91	B minus	80 to 81	C minus	70 to 71	D minus	60 to 61
F	equal to or less than 59						

## **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/](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 Public Sharing of Instructor Material**

- “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](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.

## **Tentative Course Schedule**

### **Tentative Course Schedule**

<u>Topic</u>	<u>Date</u>
Introduction to Course	2-2
General Characteristics of the Thermal Environment and Mechanisms of Thermal Regulation	2-2
Biophysics of Heat Transfer and General Clothing Considerations	2-2
Basic Mechanisms of Thermal Regulation and Acute Physiological Responses to Heat Stress During Exercise	2-9
Hypohydration, Hyperhydration, and Body Fluid Responses	2-9
Adaptations to Heat Stress	2-16
Physical Training, Cardiorespiratory Fitness, and Exercise-Heat Tolerance	2-16
Effects of Gender, Circadian Rhythms, Sleep, and Age on Thermal Responses During Exercise	2-23
Acute Cold Responses	3-9
Adaptations to the Cold and the Effects of Physical Training on Cold Tolerance	3-16
<b>First Lecture (Mid-Term) Examination (3:00 PM to 9:00 PM)</b>	<b>3-23</b>
<b>Spring Break – No Class</b>	<b>3-30</b>
Acute Effects of High Altitude	4-6
Adaptations to High Altitude and the Effects of Training at Altitude	4-13
Hyperoxia and Hyperbaria	4-20
Air Pollution	4-27
Global Warming, Climate Change, and Other Environmental Issues Related to Human Performance	5-4
Microgravity	5-11
Student Review Paper Presentations	5-11
<b>Second (Final) Lecture Examination (3:00 PM to 9:00 PM)</b>	<b>5-25</b>