



Course Syllabus

HBIO 205Lxg – The Science of Sport

4 Units

Fall 2023

Lecture: MWF 9:00--9:50 AM

Classroom Location: [WPH B27](#)

Instructor: Helen Soultanakis, Ph.D.

Office: [AHF B37](#)

Office Hours: M-W 13:30 - 14:30 or by appointment

Contact Info: soul@usc.edu

Laboratory Director: Anh-Khoi Nguyen, Ph.D.

Office: PED 109

Office Hours: by appointment

Contact Info: agnguyen@usc.edu

Labs & Lab Instructors:

(Attendance in Labs is mandatory)

Monday:

12:00-1:50pm, Helaine Lopes, Ph.D. Contact Info: lopes@usc.edu

2:00-3:50pm, Lisa Le, M.A. Contact Info: lelisa@usc.edu

4:00-5:50pm, Joshua Carlos, M.S. Contact Info: jcarlos6@usc.edu

6:00-7:50pm, Joshua Carlos, M.S. Contact Info: jcarlos6@usc.edu

Thursday:

2:00-3:50am, Bara Floyd, M.A. Contact Info: gbfloyd@usc.edu

4:00-5:50pm, Lisa Le, M.A. Contact Info: lelisa@usc.edu

6:00-7:50pm, Lisa Le, M.A. Contact Info: lelisa@usc.edu

Friday:

10:00-11:50am, Bara Floyd, M.A. Contact Info: gbfloyd@usc.edu

12:00-1:50pm

2:00-3:50pm

Lab Location: PED B16

Lab Instructors' Office: PED 109

Office Hours: TBA

Course Description

This course will deal mainly with the physiological basis of human performance. It will be a combination of lecture and laboratory exercises to better help students understand the biological factors that facilitate and limit optimal performance. This course is addressed to individuals who have the desire to exercise and wish to better understand their physical capabilities and the factors involved in exercise tolerance as well as to elite athletes participating in collegiate or professional sports.

Learning Objectives

- To understand the responses and adaptations of the exercising muscle,
- To understand the responses and adaptations of the cardiorespiratory system to sport and exercise,
- To understand the physiological responses and challenges imposed by exercise of varying intensity and duration,
- To develop and understanding of the various processes that support the elevated energy consumption observed with exercise,
- To understand the biological factors that facilitate and limit optimal performance,
- To gain knowledge of how sport and exercise combined with healthy nutrition can combat chronic diseases and improve health,
- To conduct and understand measurements of body composition and energy expenditure at rest and during exercise.

Required Text

Physiology of Sport & Exercise, 8th Edition, by Kenney, Wilmore, Costill (2021). Human Kinetics; Hardcopy ISBN-10: 1718201729/ ISBN13: 978-1718201729; E-Textbook ISBN: 9781718210387.

Description and Assessment of Assignments

- Lecture material will be evaluated via two midterm exams (2x20% of grade), a comprehensive final exam (25% of grade), and in-class participation projects (10% of grade).
- Material covered in labs will be evaluated via laboratory exercises and quizzes as well as classroom exams (25% of grade).
- Extra credit (2.5% of grade) can be acquired by attending the JEP program and signing in: <https://dornsife.usc.edu/joint-educational-project/sign-up/>

Technological Proficiency and Hardware/Software Required

All course materials and grading will be provided via Blackboard, so students must have access to that platform for this course.

Attendance

Class attendance for lectures is not monitored and does not count towards your course grade, but students are responsible for all material presented in lecture as well as participating in presentations (to be assigned) during lectures. Attendance is highly recommended as the in-class discussions will help you better grasp the material presented. Lecture slide sets will be shared with students via Blackboard and generally provided prior to the lecture. Lectures will **not** be provided online or recorded, and student's missing lectures are encouraged to seek out classmates for any information not included in the slide-sets.

In contrast to the lectures, **attendance in the labs is required** for participation and timely submission of lab assignments. Student athletes with approved "Travel Request Letters" and students who give advance notice of religious observation conflicts, as well as verified medical issues, will be allowed to make-up the lab assignments.

Course Specific Policies

- A midterm exam can be taken at another date ONLY if the student has a **documented** medical excuse or athletic/competition excuse.
- Exams and lab grades will not be given a letter grade. Only the final grade will be given a letter grade.
- The final exam is **cumulative** (and must be taken at the scheduled time and date as dictated by University policy.)

- A request to take a make-up exam must be accompanied by evidence of necessity (eg. letter from a doctor, letter from the athletic department for traveling/competing athlete, etc). When allowed, a make-up exam will be different in content and format from the originally scheduled exam. Make-up exams may also be proctored by personnel who do not have extensive knowledge in the area being tested.
- Extra credit will be offered for this course by either JEP or extra assignment (not both). JEP offers students the unique opportunity to combine academic coursework with experiences in the community surrounding the campus. Early in the semester, a JEP representative will visit our class to discuss the opportunities available this semester. To register for JEP, visit <http://dornsife.usc.edu/joint-educational-project/>

Zoom Etiquette

As noted above lectures will not be provided via Zoom (or recorded) on a regular basis. However, extenuating circumstances (eg. Instructor illness) may require the instructor to make such presentations. When at all possible, such exceptions will be announced ahead of schedule. During any Zoom lecture you are encouraged to leave your camera/video on but are not required to do so. However, audio should be muted unless you are asking a question.

Grading Timeline

Midterm I – Wednesday, Sept. 27, 2023

Midterm II – Wednesday, Nov. 1, 2023

Final Exam – Monday, December 11, 2023 (11:00 AM-1:00 PM)

(Laboratory grading schedule is provided separately in the lab syllabus/handbook).

Grading Breakdown

Assessment Tool (assignments)	Points	% of Grade
Midterm 1		20
Midterm 2		20
In Lecture Participation Assignments		10
Final Exam		25
Lab		25
TOTAL		100
JEP (extra Credit)		2.5

Grading Scale

- The lecture portion of this course uses a “relative” grading scheme (i.e. curve), based on the class mean (average) and SD (variance). Essentially, you are graded based on your performance in the class relative to the performance of other students.
- The lab portion of the course employs a separate grading scheme that will be discussed in your first lab section meeting.
- At the end of the course you will receive separate letter grades for the “Lecture” and “Lab” portions of the course. These will be converted to Grade Points utilizing a standard scale (e.g. A=4.0; A-=3.7; B+=3.3; B=3.0, B-=2.7; C+=2.3; C=2.0, etc.), assigned the appropriate weighting (Lecture = 0.75; Lab = 0.25), then added together to generate your final Course Grade.

For example: If you get the following grades in Lecture and Lab (your course grade would be computed as follows:

Lecture: B= 3.0 x 0.75 =2.25 & in

Lab: A= 4.0 x 0.25= 1.00

Final Grade: 3.25 = B+

Course Schedule: A Weekly Breakdown

	Date	Lecture Topic	Reading Assignment
Week 1	Aug. 21	-Introduction to HBIO-205 and Sports Science -Research in Exercise Science	PPT
	Aug. 23		PPT
	Aug. 25		
Week 2	Aug. 28	-Class Participation Project description -Basic Principles of Anatomy and Physiology	PPT
	Aug. 30		PPT
	Sept. 1		
Week 3	Sept. 4	<i>Labor Day Holiday (no class)</i>	
	Sept. 6	Exercising Muscle -Structure and Function, Fuel for Exercise, -Neural & Hormonal Control of the Exercising Muscle	Chapter 1 Chapter 2
	Sept. 8		Chapter 3 Chapter 4
Week 4	Sept.11	Muscle Energy -Energy Expenditure, Determinant of Fatigue	Chapter 5
	Sept.13		Chapter 6
	Sept.15		
Week 5	Sept. 18	The Cardiac Cycle -Cardiovascular and Respiratory Function	Chapter 7
	Sept.20		Chapter 8
	Sept.22		
Week 6	Sept.25	Review	
	Sept. 27	MIDTERM 1	
	Sept. 29	Cardiorespiratory Responses to Acute Exercise	Chapter 9
Week 7	Oct. 2	Exercise training -Principles of Exercise Training -Adaptations to Training	Chapter 10
	Oct. 4		
	Oct. 6		
Week 8	Oct. 9	-Adaptations to Resistance Training, -Adaptations to Aerobic and Anaerobic Training	Chapter 11
	Oct. 11		Chapter 12
	Oct. 12-13	<i>Fall Recess (no class)</i>	
Week 9	Oct. 16	Prescription of Exercise for Health and Fitness	Chapter 13
	Oct. 18		
	Oct. 20		
Week 10	Oct. 23	Environmental Influences on Performance -Thermoregulation, -Hyperbaric Environments and Microgravity	
	Oct. 25		Chapter 14
	Oct. 27		Chapter 15
Week 11	Oct. 30	Review	
	Nov. 1	MIDTERM 2	
	Nov. 3	Optimizing Performance in Sport	

(Course Schedule: A Weekly Breakdown, continued)

Week 12	Nov. 6	-Training for Sport and Overtraining & -Ergogenic Aids	Chapter 16
	Nov. 8		Chapter 18
	Nov. 10	Veterans Day (no class)	
Week 13	Nov. 13	Nutrition -Nutritional Requirements in Sport -Body Composition and Obesity	
	Nov. 15		Chapter 17
	Nov. 17		
Week 14	Nov. 20	The Biological impact of Biomechanics and Psychology on Optimizing Performance	PPT
	Nov. 22-26	Thanksgiving Holiday (no class)	
Week 15	Nov. 27	-Cardiovascular Disease and Physical Activity -Sport throughout our Lifetime	Chapter 22
	Nov. 29		Chapter 19 Chapter 20
	Dec. 1	Review for FINAL	
	Monday Dec. 11	FINAL EXAM (11 am - 1 pm)	

Academic Integrity

The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university's mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the [USC Student Handbook](#). All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the [student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Course Content Distribution and Synchronous Session Recordings Policies

USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment. Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the

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academic freedom of other students as well as the instructor. ([Living our Unifying Values: The USC Student Handbook](#), page 13). Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the internet, or via any other media. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Course Evaluations

Course evaluation occurs at the end of the semester. This evaluation process allows students to comment and rate their experience in the class. The process is conducted online, and you are encouraged to take advantage of this opportunity.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or otfp@med.usc.edu

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.