

EXERCISE PHYSIOLOGY LAB

01:377:371

Semester: Fall, 2023

Department of Kinesiology and Health
Rutgers University

Course information:

Pre/co-requisites: Exercise Physiology – 01:377:370

Learning site: Canvas <https://canvas.rutgers.edu/>

Format: In-Person

Schedule: See lab schedule under files in canvas

Technology requirements for this course: Computer with standard software (Microsoft Office), high-speed internet access.

Instructor information:

Instructor: Morgan Murray, MS, CSCS

Email: msm272@kines.rutgers.edu

In person office hours: By appointment

Virtual office hours: By appointment

Virtual office hours format: Zoom

Canvas email will be used for all information/communication related to this course.

Section(s): 01, 03, 08, 11

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Section(s): 06

Required Course Materials:

None Required

Suggested: McArdle WD, Katch FI, Katch VL. *Exercise Physiology: Nutrition, Energy, and Human Performance*. Eighth edition. Wolters Kluwer Health/Lippincott Williams & Wilkins; 2015.

ISBN: 1451191553

Course Description:

The purpose of this course is to provide a practical and hands-on approach to exercise physiology methods. Shared topics are covered from the Exercise Physiology lecture and a focus is placed on demonstration of methods that pertain to previously learned topics. Students engage in the methods to better understand the measurement techniques and physiological systems engaged during testing.

This course counts as 1 credit for the Exercise Science / Sport Management major / minor.

Course Learning Objectives:

By the conclusion of this course, you will:

- a. Have a foundational understanding the human body's response to exercise.
- b. Be able to describe various methods for measuring physiological responses to exercise.
- c. Explain how to assess and interpret metabolic, vascular, respiratory, and skeletal muscle function.
- d. Identify and discuss the science behind instruments that assess athletic and health outcomes.
- e. Be able to critically think about validity and reliability of measurement techniques.
- f. Be able to perform basic data analyses and visualizations.

Grading Policy:

- This class uses a points-based system to calculate grades. The description of each assignment includes how many points it is worth. The total number of points for this class is 700. Assignments are due by 11:59 PM on the due dates listed below unless otherwise noted.
- Assignments turned in late will be accepted starting at half-credit unless the student communicates with the instructor BEFORE the due date and receives written approval of an extension.
- Concerns about a graded assignment must be brought to the instructor within seven days of receiving the grade. Assignment grades are finalized after this seven-day period.
- Grades on Canvas will be updated regularly; if you notice any discrepancies or have questions, please do not wait until the end of the semester – let your instructor know right away.

Letter Grade	Percent	Points Needed
A	90-100	630 – 700
B+	85-89.9	595 – 629
B	80-84.9	560 – 594
C+	75-79.9	525 – 559
C	70-74.9	490 – 524
D	60-69.9	420 – 489
F	0-59.9	0 – 419

Assignments:

Quizzes (10 pts/quiz – 100 pts total – 14% of total grade):

After the first week of labs, each week begins with a short quiz. The purpose of the quiz is to ensure that the lab manuals have been reviewed before the start of class. You should enter each lab prepared to engage with the material and the lab activities.

Participation (100 pts total – 14% of total grade):

This is an Exercise Lab, so you should be dressed to exercise. We will **ALL** be expected to administer and participate in lab activities. This means that you need to come to the lab wearing the appropriate attire and shoes you can move in. If your religious practice requires you to wear

specific attire this will, of course, be respected and you will not be penalized.

Here is a general list of acceptable attire:

- g. T-shirts/sweatshirts/tank-tops/etc.
- h. Workout shorts/sweatpants/joggers/running pants/yoga pants/etc.
- i. Sneakers/running shoes/etc.

Here is a general list of unacceptable attire:

- j. Dress-shirts/suits/etc.
- k. Jeans/khakis/dresses/etc.
- l. Dress shoes/boots/flip-flops/crocks(even in sport-mode)/etc.

Be prepared to discuss topics, think critically, and engage with your classmates. Attendance will count toward your participation, so be sure to attend each lab. If you need to miss a lab, you will need to communicate with your instructor to determine if accommodations can be made.

Lab Reports / Homework (25 pts/lab – 250 pts total – 36% of total grade):

In the Ex Phys Lab, we collect data on ourselves and contemplate how this data fits into the “big picture”. We use our data to drive home the overarching concepts within exercise physiology. Therefore, it is required that you come to the lab each week prepared to work hard, think critically, and collect data!

The lab manuals consist of objectives, key terms, important concepts, experimental procedures, datasheets, and questions. You will be responsible for reviewing the objectives, key terms, and important concepts before you come to class. You will collect any necessary data in your datasheet and then respond to questions pertaining to the lab activity for homework. Your completed datasheets and questions are to be uploaded to Canvas and submitted by 11:59 pm the night before your next lab session.

Midterm & Final Lab Reports (125 pts/report – 250 pts total – 36% of total grade):

The first and second halves of the course will culminate with comprehensive lab reports that require you to use the data and visualizations you’ve made for the preceding 5 labs to answer questions about the most important topics and learning objectives. The questions will be open-ended and will generally require you to provide support for your responses using data and data visualizations generated in the previous 5 labs.

Summary of Assignments with Due Dates:

Quizzes:

Quizzes are to be completed on canvas and will be due by 11:59pm THE DAY BEFORE your lab section.

Lab Write – Ups/Homework:

Lab homework is due by 11:59pm THE DAY BEFORE the following week’s lab section.

Midterm Lab Report:

The midterm lab report is due on the 8th week of classes.

Final Lab Report:

The final lab report is due the final week of class.

Course Policies and Procedures:

Academic Integrity:

Students are responsible for becoming familiar with the definitions, procedures and sanctions outlined in

Rutgers University Academic Integrity Policy before submitting any assignment or exam. The policy can be found at: <http://nbacademicintegrity.rutgers.edu/>.

All students should conduct themselves with the highest standards of academic honesty. Examples of academic dishonesty include: copying others' written work, not citing sources, and submitting the same assignments/papers multiple times in different courses. All incidences of questionable academic integrity are a serious matter and may result in a no grade (0.0) for the assignment or course. Academic dishonesty will not be tolerated and will be treated in accordance with Rutgers University Academic Integrity Policy.

By enrolling in this course, you are indicating implicitly that you have read, understood, and accepted Rutgers University's policies and procedures regarding academic integrity and dishonesty. Plagiarism and cheating will not be tolerated, and all University policies apply. Specifically, if plagiarism or cheating is suspected, the student(s) will be asked to meet with the instructor. If the instructor concludes that an instance of plagiarism or cheating has occurred, the student(s) will be subject to an appropriate sanction or penalty outlined in Rutgers University Academic Integrity Policy.

Please note that plagiarism is using the ideas or writings of another as one's own. It varies in degree and severity. The most severe is the use of another's entire paper word-for-word. Less severe is the use of another's sentence, paragraph, or ideas without giving credit to that individual (i.e., without providing a reference).

Expectations:

- Engage with any online class material.
- Complete all assignments on time.
- Actively participate in all class activities.
- Follow the honor code when completing all quizzes and exams.
- Ask questions to enhance understanding of the material.
- Communicate with the instructor if you have questions pertaining to the material or the course.
- Check your email and Canvas announcements regularly to stay informed about class updates.

Email Etiquette:

When emailing your instructor, please use your Rutgers e-mail address and identify yourself by full name and course number. Students are expected to place the course number, followed by the subject, in the subject line, use appropriate e-mail etiquette, and maintain reasonable expectations for instructor responses. The instructor will respond to student emails within 1-2 business days.

Make-up Policy:

No make-ups or extensions will be offered for missed assignments except in one of the following situations, provided that the instructor is notified in advance:

- Athletic or other Rutgers sponsored trips: Travel dates and times accompanied by a signed memo from the group's advisor/coach must be presented to the instructor prior to travel dates.
- Religious observances.
- Extenuating circumstances: This includes (but is not limited to) family emergencies, severe illnesses, accidents, etc. It will be up to the prerogative of the instructor whether or not the student will be allowed to take the make-up or receive an extension.

Diversity & Inclusion:

The Department of Kinesiology and Health supports an inclusive learning environment wherein diversity and authenticity are valued. We are committed to creating a culture of equality that respects the diverse voices of our students, faculty and staff. We will continuously strive to create a curriculum and academic

environment to reflect the community we serve, and drive innovation, social responsibility and excellence. Our diversity in thought, skill, and academic discipline is a resource and strength, which stands to benefit the whole and positively contribute to University and global reach.

RUTGERS UNIVERSITY STUDENT SERVICES

Service	Description	Contact Information
Student Accommodations	If you are a student in need of accommodations, please register with the Office of Disability Services in order to initiate the accommodations process. Please present your letter of accommodation to your instructor during the first week of the semester. Please note that accommodations are not retroactive.	(848) 445-6800 Lucy Stone Hall, Suite A 145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 https://ods.rutgers.edu/
Just In Case Web App	Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.	http://health.rutgers.edu/medical-counseling-services/counseling/caps-next-step/
Counseling, ADAP & Psychiatric Services (CAPS)	CAPS is a university mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.	(848) 932-7884 17 Senior Street, New Brunswick, NJ 08901 www.rhscaps.rutgers.edu/ Medical Services: http://health.rutgers.edu/medical-counseling-services/medical/ Counseling Services: http://health.rutgers.edu/medical-counseling-services/counseling/
Violence Prevention & Victim Assistance (VPVA)	The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.	(848) 932-1181 3 Bartlett Street New Brunswick, NJ 08901 www.vpva.rutgers.edu/
Scarlet Listeners	Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.	(732) 247-5555 scarlet.listeners@gmail.com https://scarletlisteners.wixsite.com/scarletlisteners
Academic Support	School of Arts and Sciences Academic Advising for personal, career, and educational goals. Department of Kinesiology & Health Academic Advising for questions about Exercise Science or Sport Management major/minor requirements.	SAS: https://sasundergrad.rutgers.edu/ Dept. of Kinesiology & Health: Lin Williams lin.williams@rutgers.edu Loree Gym, Room 148 Becky DeMarco becky.demarco@rutgers.edu https://kines.rutgers.edu/academics/academic-advising

Last Updated: 7-26-2023

COURSE OUTLINE:

WEEK #	MONDAY	LAB TITLE
1	9/4/2023	NO LAB
2	9/11/2023	Introduction to Exercise Physiology Lab
3	9/18/2023	Body Composition
4	9/25/2023	Flexibility
5	10/2/2023	Muscular Strength & Endurance
6	10/9/2023	Anaerobic Exercise
7	10/16/2023	LAB RECESS
8	10/23/2023	Cardiovascular Response to Exercise / MIDTERM LAB REPORTS DUE
9	10/30/2023	Introduction to Oxygen Consumption & RMR
10	11/6/2023	Energy for Exercise: From Rest to Steady-State
11	11/13/2023	Predicting VO ₂ max
12	11/20/2023	THANKSGIVING RECESS
13	11/27/2023	Maximal Aerobic Capacity (VO ₂ max)
14	12/4/2023	FINAL LAB REPORTS DUE