

Course Information

I Instructor Name:	Saied Jalal Aboodarda	Classroom #:	ES 162
Phone Number:	403-220-3649	Day(s) Class Meets:	Mon/Wed/Fri
Email Address:	saiedjalal.aboodarda@ucalgary.ca	Time Class Meets:	11:00-11:50
Office #:	KNB 420	Course Website:	D2L
Office Hours:	Monday 12:00-14:00	Labs:	KNB 128

Teaching Assistant Names and emails: Refer to D2L

Course Description:

The physiology of muscular exercise, physical conditioning, and training. The course will cover aspects of the nervous, muscular, cardiovascular, and respiratory systems and also present the material in the context of the effects of exercise on an integrated system. Short- and long-term adaptations to exercise will be examined relative to health and human activity.

Prerequisites:

Kinesiology 203, 213, 323 and admission to the Faculty of Kinesiology.

Course Objectives:

Upon completion of this course, students should be able to:

1. Explain fundamental aspects of exercise physiology, including topics related to energy transfer and expenditure during exercise; exercise metabolism; respiratory, cardiovascular, and neuromuscular responses to acute exercise; exercise testing, prescription, and performance; and applied exercise physiology.
2. Explain how various human physiological systems adapt to exercise training (or the lack thereof) and the consequences for exercise performance and health;
3. Apply concepts in exercise physiology to solve practical problems related to task analysis, exercise testing, prescription, and performance;
4. Calculate and estimate relevant physiological variables at rest and during various intensities of exercise;
5. Create valid hypotheses related to exercise physiology; and
6. Analyze and interpret physiological data and communicate data to scientific and general audiences.

Course Content:

<u>Date</u>	<u>Topic</u>
January 9 – 11 – 13	Introduction – Human movement Neuromuscular system – structure Neuromuscular system – function
January 16 – 18 – 20	Force, velocity, and power Mechanisms of exercise-induced fatigue I

	Mechanisms of exercise-induced fatigue II
January 23 – 25– 27	Resistance exercise Strength and muscle hypertrophy I Strength and muscle hypertrophy II
January 30 – February 1	Energy expenditure and body weight Measuring body composition
February 3	Quiz #1
February 6 – 8 – 10 – 13 – 15 – 17	Energy transfer in the body Energy systems - ATP and PCr Anaerobic metabolism I Aerobic metabolism II Aerobic metabolism III Fuel use during exercise
Mid-Term Break (February 19 – February 25)	NO CLASSES (Mid-term break)
February 27 – March 1 – 3 – 6	Blood glucose regulation Metabolic adaptations to exercise training Ventilatory responses to exercise Respiratory physiology
March 8	Quiz #2
March 10 – 13 – 15 – 17 – 20 – 22	Cardiac physiology Cardiac responses to exercise Maximal oxygen uptake ($\dot{V}O_{2\max}$) Assessment of $\dot{V}O_{2\max}$ Exercise thresholds Exercise-intensity domains
March 24 – 27 – 29	Aerobic training principles Aerobic training adaptations What determines aerobic endurance?
March 31 – April 3 – 5	Hot topics in exercise physiology: Principles of training prescription Exercise tolerance limit Muscle damage and repeated bout effect
April 12	REVIEW

Lab Schedule

Lab	Dates (week of)	Topic
1	January 16	Introduction to exercise physiology laboratory
2	January 23	Anaerobic power
3	January 30	Ventilatory adjustments to dynamic exercise
4	February 6	Cellular Respiration: Online Asynchronous Lab*†
5	February 13	Exercise efficiency/economy
	February 20	MIDTERM BREAK*
6	February 27	Maximal Oxygen Uptake
7	March 6	Fatigue
	March 13	NO LABS
8	March 20	Inquiry-based learning project–Planning
9	March 27	Inquiry-based learning project–Experimenting
10	April 3	Inquiry-based learning project–Presenting

*Note that there are no in-person laboratories the week of February 6 (asynchronous online lab), February 20 (Mid-term break) or March 13

†The online asynchronous lab will be available from Monday, February 6 at 12:01 AM until the start of your next lab.

Required Reading Materials:

Lecture slides

Recommended Reading Materials: (Optional)

McArdle, WD., Katch F., Katch V. (2015) Exercise Physiology: Energy Nutrition and Human Performance (8th edition). Philadelphia: Lippincott Williams and Wilkins

Assessment Components/Expectations

Grading Scale:

Letter	Percent	Grade Point Value	Description
A+	93.0 and above	4.00	Outstanding
A	89.0-92.9	4.00	Excellent – Superior performance, showing comprehensive understanding of subject matter
A-	85.0-88.9	3.70	
B+	81.0-84.9	3.30	
B	77.0-80.9	3.00	Good – Clearly above average performance with knowledge of subject matter generally complete.
B-	73.0-76.9	2.70	
C+	69.0-72.9	2.30	
C	65.0-68.9	2.00	Satisfactory – Basic understanding of the subject matter. Grade point average below 2.00 is not sufficient for promotion.
C-	61.0-64.9	1.70	Minimum grade required if needed as a prerequisite course.
D+	55.0-60.9	1.30	
D	50.0-54.9	1.00	Minimal pass – Marginal performance, generally insufficient preparation for subsequent courses in the same subject.
F	49.9 and below	0	Fail – Unsatisfactory performance of failure to meet course requirements.

Evaluation of Course Content:

Two quizzes on Feb 3 rd & March 8 th (each quiz is 15% of the total grade)	30%
Final Exam (set by registrar, April 15-26 2023)	20%
Total lecture	50%
Pre-Lab Quizzes (6 total; Labs 1-3, 5-7)	3 (0.5% each)
Post-Lab Assignments (6 total; Labs 1-3, 5-7)	24 (4% each)
Post-Lab Reflections (3 total)	3 (1% each)
SimBio Completion (Lab 4)	4
Inquiry-Based Learning Project	16
Planning	2
Professionalism/Data Collection	2
Final Report	6
Final Presentation	6
Total lab	50%
Total grade	100%

Exam (Quiz) Policy:

The Faculty of Kinesiology policy is that all students are expected to write midterm exams on the dates listed on the course outline. Special accommodation may be granted by the instructor in **exceptional circumstances only**, which includes

illness, participation in athletic events (varsity, national or international), domestic affliction, and religious conviction. It is the student's responsibility to supply proper documentation and/or notification **prior to** the originally scheduled midterm to support their circumstance. Personal travel plans and arrangements are not valid reasons for requesting a special accommodation for a midterm exam.

Final Exam:

The date of the final exam will be scheduled by the registrar (April 15-26, 2023). The exam will be scheduled for 3 hours.

Late Policy:

Pre-lab quizzes and post-lab reflections will not be accepted past their respective deadlines (i.e., will be marked as zero).

Post-lab assignments will only be accepted a maximum of 24 hours past the due date at half their initial value (i.e., 1.5%). After 24 hours, these assignments will not be accepted, and you will receive a zero for that assignment.

Additional Course Information:

Quizzes: The course will include 2 quizzes, which will take place on February 3rd and March 8th. Both quizzes will be conducted in-person in the same location (ES 162) and at the same time as the weekly lectures (11:00-11:50). Students will have 50 minutes to write this quiz. To review quizzes or ask questions about the grades, students need to book an appointment with Dr. Aboodarda. Further details will be presented about the quizzes in online classes.

Laboratory Attendance

1. Labs will be held in person; the lab schedule is provided in **KNES 373 Lab Schedule and Lab Manual**. Attendance at labs is mandatory, including the Orientation lab. The first **unexcused** absence will result in a mark of zero for the associated assignments. **A second unexcused** absence will result in failure of the course.
2. Anyone arriving one minute after the scheduled start time of the lab is considered LATE for lab and will be deducted 1% from their overall lab mark. This 1% deduction will be applied to every lab for which a student is late.
3. Varsity athletes who would like to request a lab accommodation (maximum of 2) must submit this specific request accompanied by their competition schedule and note from their coach by **Monday January 30th at noon** to the KNES 373 Lab Coordinator (Colton Quinn, cpquinn@ucalgary.ca), after which time no lab accommodations will be approved.
4. Students must attend the section in which they are registered.
5. Lab manual content will be posted to D2L.
6. Students have a maximum of 10 business days after receiving feedback on an assignment to request that the graded assignment be reappraised.
7. For the "Cellular respiration" lab, students will complete an online module using SimBio software. Students will be provided with registration information on D2L and access to the prepaid software (i.e., students will not incur any expenses). TAs will provide support for the laboratory content; however, technical support will be available through the following link: <http://simutext.zendesk.com>.
8. For more information about laboratory schedule, mark breakdown, safety procedure, emergency procedure and general laboratory rules, please read **KNES 373 Lab Schedule and Lab Manual**.

Students are responsible for completing a Get Active Questionnaire (GAQ -- formerly PAR-Q) and obtaining a medical clearance if required. Also known as: (formerly Kinesiology 473)

Contacting the Instructor:

Students requiring assistance are encouraged to speak with their instructor during class or office hours. If you wish to meet with the instructor outside of office hours, please phone or email the instructor to make an appointment.

Email, while commonly used, does limit the effectiveness of communications and may not be the best way for instructors to answer student questions. Therefore, the instructor may request a telephone call or personal meeting. Your instructor will inform you as to their expectations about emails.

Students' Union:

The Faculty of Kinesiology representative is Jessie Dinh and can be reached at kinesrep@su.ualgary.ca.

Supplementary Course Information

Plagiarism/Cheating/Other Academic Misconduct

(see Calendar <https://www.ualgary.ca/pubs/calendar/current/k.html>):

A **single** offence of cheating, plagiarism or other academic misconduct is a serious act that will not be tolerated in the Faculty of Kinesiology. Penalties for such acts will be determined by the Dean and may result in a failing grade, probation, suspension, or expulsion. Any student who is uncertain if an action falls into this category should consult the instructor and/or the Calendar in advance.

Academic Misconduct

Academic Misconduct refers to student behavior which compromises proper assessment of a student's academic activities and includes: cheating; fabrication; falsification; plagiarism; unauthorized assistance; failure to comply with an instructor's expectations regarding conduct required of students completing academic assessments in their courses; and failure to comply with exam regulations applied by the Registrar.

For information on the Student Academic Misconduct Policy and Procedure please visit:

<https://www.ualgary.ca/legal-services/university-policies-procedures/student-non-academic-misconduct-policy>

<https://www.ualgary.ca/legal-services/university-policies-procedures/student-non-academic-misconduct-procedure>

Additional information is available on the Academic Integrity Website at <https://ualgary.ca/student-services/student-success/learning/academic-integrity>

Academic Accommodation Policy and Information on Student Accessibility Services:

It is the student's responsibility to request academic accommodation. If you are a student with a documented disability or medical condition who may require academic accommodation and have not registered with Student Accessibility Services, please contact their office at 403-220-8237. SAS will process the request and issue letters of accommodation to instructors. You are also required to discuss your needs with your instructor preferably within the first fourteen (14) days of this course. Students who have not registered with Student Accessibility Services **are not** eligible for formal academic accommodation. For further information, go to <http://www.ualgary.ca/access/>.

[ualgary.ca/student-services/access/prospective-students/academic-accommodations](http://www.ualgary.ca/student-services/access/prospective-students/academic-accommodations).

<https://www.ualgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf>

Accommodations on Protected Grounds other than Disability:

Students who require an accommodation in relation to their coursework or to fulfil requirements for an undergraduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to Jodie McGill, Manager of Student Advising at jdmcgill@ualgary.ca. Students who require an accommodation unrelated to their coursework or the requirements for an undergraduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Vice-Provost (Student Experience). For additional information on support services and accommodations for students with disabilities, visit www.ualgary.ca/access/.

Intellectual Property:

Course materials created by instructors (including presentations and posted notes, labs, case studies, assignments, and exams) remain the intellectual property of the instructor. These materials may NOT be reproduced, redistributed, or copied without the explicit consent of the instructor. The posting of course materials to third party websites such as

note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing.

Freedom Of Information and Protection Of Privacy Policy:

Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary. The University of Calgary is under the jurisdiction of the Provincial Freedom of Information and Protection of Privacy (FOIP) Act. Please refer to the website for further details.

<https://www.ucalgary.ca/legal-services/access-information-privacy>

Copyright Legislation

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (<https://www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright-policy.pdf>) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorised sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy <https://www.ucalgary.ca/pubs/calendar/current/k.html>.

Internet and Electronic Communication Device Information:

Any surfing of the Internet during lectures that is not directly related to the class discussion is distracting and strictly forbidden. Additionally, the use of any electronic devices (i.e., cellular phones) for emailing, texting, etc., is strictly prohibited. Please turn **OFF** your phone before the beginning of each lecture unless permitted. Instructors have the authority, at the discretion of the Dean to require that specific course assignments, term papers and academic exercises be submitted in an electronic format.

<https://www.ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-electronic-resources-and-information-policy>

Library and Resources in the Library:

Visit the University of Calgary's library at <http://library.ucalgary.ca/>.

Wellness and Mental Health Resources

The University of Calgary recognizes the pivotal role that mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive support when needed. We encourage you to explore the excellent mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through Student Wellness Services (Room 370 MacEwan Student Centre,

<https://www.ucalgary.ca/wellness-services/services/mental-health-services>) and the Campus Mental Health Strategy (<http://www.ucalgary.ca/mentalhealth/>).

Sexual Violence Policy

The University recognizes that all members of the University Community should be able to learn, work, teach and live in an environment where they are free from harassment, discrimination, and violence. The University of Calgary's sexual violence policy guides us in how we respond to incidents of sexual violence, including supports available to those who have experienced or witnessed sexual violence, or those who are alleged to have committed sexual violence. It provides clear response procedures and timelines, defines complex concepts, and addresses incidents that occur off-campus in certain circumstances. Please see the policy available at <https://www.ucalgary.ca/legal-services/university-policies-procedures/sexual-and-gender-based-violence-policy>

Student Success

The Student Success Centre provides services and programs to ensure students can make the most of their time at the University of Calgary. Our advisors, learning support staff, and writing support staff assist students in enhancing their skills and achieving their academic goals. They provide tailored learning support and advising programs, as well as one-on-one

services, free of charge to all undergraduate and graduate students. For more information visit: <https://www.ucalgary.ca/student-services/student-success>

Student Ombuds Office

The Student Ombuds Office supports and provides a safe, neutral space for students. For more information, please visit www.ucalgary.ca/ombuds/ or email ombuds@ucalgary.ca

Student Union (SU) Information

The SU Vice-President Academic can be reached at (403) 220-3911 or suvpaca@ucalgary.ca; Information about the SU, including elected Faculty Representatives, can be found here: <https://www.su.ucalgary.ca>

Graduate Students' Association (GSA) Information

The GSA Vice-President Academic can be reached at (403) 220-5997 or gsa.vpa@ucalgary.ca; Information about the GSA can be found here: <https://gsa.ucalgary.ca>

Emergency Evacuation/Assembly Points

Assembly points for emergencies have been identified across campus. Assembly points are designed to establish a location for information updates from the emergency responders to the evacuees; from the evacuated population to the emergency responders. For more information, see the University of Calgary's Emergency Management website: <https://www.ucalgary.ca/risk/emergency-management/evac-drills-assembly-points/assembly-points>

Safewalk

Campus security will escort individuals, day or night, anywhere on campus (including McMahon Stadium, Health Sciences Centre, Student Family Housing, the Alberta Children's Hospital and the University LRT station). Call 403-220-5333 or visit <http://www.ucalgary.ca/security/safewalk>. Use any campus phone, emergency phone or the yellow phone located at most parking lot pay booths. Please ensure your personal safety by taking advantage of this service.