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## KINES 3091- SPRING 2021 Course Syllabus

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**Instructor:** Arwen Fuller, PhD  
**Email:** **PLEASE use Canvas Messaging** for course concerns, *but here is my email:* [arwen.fuller@utah.edu](mailto:arwen.fuller@utah.edu)  
**Office Hours:** Virtual Office Hours TBD or by appt.  
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### Course Description:

Movement is a basic human behavior that generates and sustains health, prevents disease and enables leisure activity & sport performance. The primary objective of this course is to examine the physiological basis of human movement. In particular, it examines acute neuromuscular, metabolic, endocrine, and cardiorespiratory responses to exercise. Physiological adaptations to chronic exercise training will also be explored as will the body's response to environmental challenges during exercise in the heat and cold, and at high altitudes.

- Prerequisites: BIOL 2325 and MATH 1050 or higher. This course fulfills general education quantitative intensive (QI) BS credits.

### Teaching & Learning Methods:

Due to the COVID-19 pandemic, this course is being delivered as an asynchronous fully-online course. This means that though students are encouraged to connect with the instructor during weekly virtual office hours, students will not be required to attend any meetings. Students are cautioned to expect to dedicate a substantial amount of time to working independently to learn the material that is presented and complete the assessments by their due dates. The instructor will make recorded lectures, PowerPoint presentations, and other supplemental resources available to students via Canvas along with a tentative course timeline/schedule. Assessments of the learning objectives will include assignments, quizzes and exams that will be delivered and submitted via Canvas.

Finally, students MUST block off time to take exams sometime between 8:00am and 11:59pm on the following dates:

- **Wednesday, FEBRUARY 24-** Midterm #1 (~60 min.)
- **Wednesday, APRIL 7-** Midterm #2 (~60 min.)
- **Wednesday, MAY 5-** Final Exam (120 min.)

### Learning Objectives:

By the end of this course, students will be able to:

1. recognize how fundamental concepts from physics, biochemistry, and biology pertain to exercise physiology
2. recognize how cellular, organ, and systems-level physiology concepts are the basis for how the body responds to exercise
3. recall specific physiological mechanisms responsible for the body's systemic and cellular adjustments to acute and chronic exercise
4. employ SI units of measure to solve algebraic problems related to mechanical work and power, mechanical efficiency, human energy expenditure, estimates of oxygen consumption and caloric expenditure, cardiac output and the arterial-venous oxygen difference, estimates of mean arterial blood pressure and systemic vascular resistance, and indirect estimates of myocardial oxygen consumption
5. explain several ways in which exercise physiology concepts are critical to the improvement of human health and fitness and discuss some of the unresolved issues in exercise physiology research
6. interpret and evaluate exercise physiology-related data trends in tables, charts, and figures

### Course Materials:

- Course material including lecture recordings, assessments, and links to external resources will be posted to the course Canvas webpage throughout the term

- Recommended Textbook: **Exercise Physiology: Integrating Theory and Application, 2<sup>nd</sup> Edition**  
William J. Kraemer; Steven J. Fleck; Michael R. Deschenes. ISBN: 978-1-4511-9319-0\*\*

\*\* **The textbook is *NOT* required.** Though there is significant overlap between the lectures and the textbook, the textbook covers additional material that is not covered in the lecture videos. There will be 4 assignments worth 7 points each that reflect information from the textbook. Students do *not* need to complete any of these assignments to get an A in the course. Quiz and exam questions will reflect **only** the material that is presented in the lecture videos. For students who have more time to read the text in addition to studying the lectures, or for those who are wanting an additional challenge, I have listed page numbers to read from the textbook on the course schedule.

### Evaluation Methods & Grade Distribution:

<i>Graded Item</i>	<i>Points Available</i>	<i>% of Total Grade</i>
6 Lecture HW Assignments	12 pts. each week (72 total)	3% each (15% total)
4 <i>Optional</i> Textbook HW Assignments	7 pts. each week (28 total)	2% each (10% total)
5 Math Assignments	10 pts. each week (50 total)	2.5% each (12.5% total)
5 Lecture Quizzes	20 pts. each (100 total)	5% each (25% total)
2 Midterm Exams	45 pts. each (90 total)	11.25% each (22.5% total)
1 Cumulative Final Exam	60 pts. total	15% total
	400 points	100%

Late assignments will NOT be accepted except in very unusual circumstances. Computer, Canvas, and internet issues are not grounds for a late assignment submission. Unexcused late submissions will receive a score of "0". To avoid these issues, students are encouraged to allow ample time to complete, upload & submit their assignments AND to double check that the correct document has been successfully uploaded prior to the due date/time. Canvas users are encouraged to use the web browser Google Chrome or Firefox as the platform upon which to run Canvas.

- Lecture Homework & Math Assignments: These assignments will be posted on Canvas, and students will submit their completed assignments according to the instructions by uploading a file or completing the assignment directly on Canvas. These assignments will not have a time limit, only a due date. Assignments will be due on Sundays before midnight.
- Textbook Assignments: There are 4 assignments that reflect material from the textbook readings. Like the other assignments, these assignments will be posted on Canvas, and students will submit their completed assignments according to the instructions by uploading a file or completing the assignment directly on Canvas. These assignments will not have a time limit, only a due date. Assignments will be due on Sundays before midnight.
- Quizzes & Midterm Exams: Quizzes and exams will be given online and may include multiple choice, matching, true/false, fill-in-the-blank and short answer questions. It is expected that students will use a calculator during quizzes and exams when necessary. Students will have a time limit within which they must complete and submit the quizzes and exams. Quizzes will be due on Sundays. Midterms 1 and 2 will be available on Canvas by 8am and due by 11:59 pm on Wednesdays 2/24 & 4/7, respectively. Students will have approximately 1 hour to complete these exams once they begin them.
- Final Exam: There will be a semi-cumulative final exam given at the end of the semester during finals week. The final exam will be available on Canvas beginning by 8am on Wednesday, 5/5 and it will be due by 11:59 pm the same day. Students will have 2 hours to complete the exam once they begin it.

## Instructor's Course Policies:

1. **All class members must behave in a respectful manner.** Quality teaching and learning occurs when there is little concern for harassment or ridicule. As such, *all* members of this class (instructor, TAs and students alike) must treat each other with respect both on and offline.
2. **Students are expected to check Canvas regularly.** Because this is an online course, Canvas is the platform through which this course will be administered. Students are expected to log on to Canvas regularly (i.e. at least twice a week) in order to be aware of all announcements, available course materials, course progression, assignment due dates, grades, etc.
3. **Students are expected to engage with the class.** As compared with traditional in-person classes, online course delivery gives students more freedom in deciding how and when to review course material and complete assignments. However, with the online format, students also have a *much* greater responsibility for ensuring that they engage with the class material in a way that promotes their own success. Class engagement includes reviewing lecture videos, asking questions when concepts are not clear, checking Canvas, seeking input from the instructor, TAs and peers, studying the information and completing assignments, etc.
  - If you are struggling, **you should ask for help** from me or a TA. Ultimately, you are responsible for your own learning. It doesn't make sense to struggle in silence; if I don't know you're struggling, I can't help you.
  - Students are strongly encouraged to establish a weekly schedule early in the semester that will create the structure and routine necessary to succeed. This requires a lot of self-discipline and self-awareness, particularly for students who have not taken an online class before.
4. **Students are expected to complete all assessments according to their scheduled dates.** Students are expected to submit assignments and take quizzes and exams as scheduled. The assessment due dates are listed on Canvas. If any of these dates must be changed, students will be notified in a timely manner on Canvas. Missed assessments may only be made up according to the policies discussed below. Students are responsible for knowing the registration, drop, and withdrawal dates and for tracking their grades throughout the term.
5. **Late assignments will not be accepted.** All work must be submitted online via the class Canvas page. Assignments will not be accepted via email except in very unusual circumstances according to the policies discussed below.
6. **Students may not negotiate course grades.** Students will be graded according to their performance on the assessments (which may or may not reflect the student's effort). Letter grades will correspond to the course percentages below, without exception. A student who earns a 72.5% will be awarded a C grade. Likewise, a student who earns a 72.4% will receive a C- grade. The ONLY basis for a change in a letter grade is a grading error so please keep track of your assignments. If a student suspects a grading error has been made, they must email me within 1 week of getting the assignment, quiz or exam back.
  - Asking for a grade that you did not earn based on your performance is not professional, mature, or ethical.

93% and above	A	73-76	C
90-92%	A-	70-72%	C-
87-89%	B+	67-69%	D+
83-86%	B	63-66%	D
80-82%	B-	60-62%	D-
77-79%	C+	59% or lower	E

7. **Students must demonstrate academic honesty and integrity.** Students are expected to demonstrate integrity, and in doing so, not endeavor to cheat or misrepresent their circumstances. Examples of misbehavior include, but aren't limited to submitting work completed by another student (i.e. from another course section), completing another student's assignments, looking at or copying off of a neighbor's quiz or exam, and lying about the circumstances of an absence. These kinds of incidents are classified as academic misconduct and will be handled according to the Student Code. <http://regulations.utah.edu/academics/6-400.php>. In doing so, the first time a student is caught cheating, they will receive a warning. If caught a second time, the student will be given a "0" for the assessment. If the student is caught a third time, they will fail the course and be referred to the College of Health's Assistant Dean of Students or the Associate Dean for Faculty and Academic Affairs. Please keep in mind that these kinds of offenses may result in dismissal from the University.

### **Instructor's Policy on Make-up Assessments (Assignments, Quizzes, Exams):**

Assessments can only be made up **after** their original due date and only for the reasons listed below:

- **Officially sanctioned University activities:** Examples of these include band, debate, student government intercollegiate athletics, and government or religious obligations. In these cases, students must provide the instructor with official documentation ***in advance of*** the absence.
  
- **Absences caused by other compelling reasons beyond the student's control:** Examples of these include physical or mental illness, injury, and death or illness in the family or of a significant other, and the birth of *your* child. In these cases, **authentic official documentation (signed and dated) of the extenuating circumstance is required.**
  - Work-related absences will not be excused except in the case of unforeseen *employment* changes.
  - Vacations are NOT an extenuating circumstance. ***Please share this with family members who may be prone to make travel plans for you without consulting you first.***
  - Weddings (yours or a friend's) do not qualify as excused absences.
  - You should inquire ***at the start of the semester*** if you are unsure if a specific absence qualifies as an excused absence

**Procedures for arranging to make up an assessment:** Except in unforeseen circumstances (i.e. sudden illness, etc.), students *must* notify the instructor about the circumstances requiring rescheduling of an assessment **prior to the absence.** **Notification should be given to the instructor by Canvas Message.** Make-ups should be completed within 3 days of the missed assessment whenever possible.

### **Non-Contract Note:**

This syllabus is not a binding legal contract. Students will be given reasonable notice of any modification.

### **University Policies:**

#### **University Safety Statement**

The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit [safeu.utah.edu](http://safeu.utah.edu).

### Student Code

All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. Students should read the Code carefully and know they are responsible for the content. <http://regulations.utah.edu/academics/6-400.php>

### Americans with Disabilities Act (ADA) Statement

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD), <http://disability.utah.edu/>. CDS will work with you and the instructor to arrange for accommodations. All information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

### Sexual Misconduct

Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted on the basis of your sex, including sexual orientation or gender identity/expression, you are encouraged to report it to the University's Title IX Coordinator: Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or to the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to police, contact the Department of Public Safety, 801-585-2677(COPS). Additional information about reporting and victim supportive resources are available at the offices listed above.

### **University Resources:**

#### Center for Student Wellness

Personal concerns such as relationship difficulties, depression, cross-cultural differences, etc., can interfere with *anyone's* ability to succeed. There are people available who are trained to help you. All you need to do is ask. For helpful resources, please contact the Center for Student Wellness - [www.wellness.utah.edu](http://www.wellness.utah.edu); 801-581-7776.

#### Veterans Center

If you are a student veteran, please be aware that the University of Utah has a Veteran's Support Center on campus. They are located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information: <http://veteranscenter.utah.edu/>.

#### LGBT Resource Center

If you are a member of the LGBT community, please know that **this class is considered a safe zone**. Additionally, please know that the University of Utah has an LGBT Resource Center on campus. They are located in Room 409 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information: <http://lgbt.utah.edu/>.

#### Learners of English as an Additional/Second Language

If you are an English language learner, please be aware of several resources on campus that will support you with your language development and writing. These resources include: the Department of Linguistics ESL Program (<http://linguistics.utah.edu/esl-program/>); the Writing Center (<http://writingcenter.utah.edu/>); the Writing Program (<http://writing-program.utah.edu/>); the English Language Institute (<http://continue.utah.edu/eli/>).

### The Center for Disability and Access

The Center for Disability and Access provides accommodations and services to students at the University of Utah whose condition significantly impacts their ability to function in the academic setting. Specific accommodations that are available to students depend on the documentation of the disability, the essential elements of the course, and the functional limitations created by the student's disability. In order to qualify for accommodation, students must schedule an appointment with CDA. More information about accommodations and services as well as how to qualify for services can be found on their website: <https://disability.utah.edu>

#### **Instructor's Tips on how to succeed in KINES 3091:**

- Be an active participant, and ask questions! Look for ways to *engage with* the information beyond simply looking at or "reading over" your course notes and textbook chapters. Examples of this kind of learning engagement include hand-writing your notes, using flashcards, re-writing your notes, constructing your own questions to cover class material, taking your own tests & challenging yourself to verbalize the concepts covered. Try teaching the material to your best friend, your roommate, your dog, your partner or your parent...if you can teach it, you likely know it well.
- There's no substitute for time. The most successful students in KINES 3091 usually devote considerable time outside of class to watch lecture videos, read supplemental material, seek out clarification via online resources, and study. In addition to excellent engagement, repetitious & active review of the class material is nearly always the best strategy for doing well in this class.
- Finally, seek help early! If you find you are struggling with learning the material or performing on exams, *please don't wait* to contact me or the TAs...we are here to help, but **YOU** must make the first move towards getting assistance.

Tentative Course Schedule (\*\*any changes will be announced on Canvas\*\*)

Week (Dates)	Course Topics, Assignments & Due Dates
Week 1 (1/18- 1/22)	<p><b>Course Introduction; Skeletal Muscle &amp; Nervous System Intro.</b></p> <ul style="list-style-type: none"> <li>• Get oriented with the class content on Canvas</li> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 111-120, 125-130</i></li> <li>• <b>Introduction Survey Due on Sunday 1/24</b> by 11:59 pm</li> <li>• <b>Lecture HW #1 Due on Sunday 1/24</b> by 11:59 pm</li> </ul>
Week 2 (1/25- 1/29)	<p><b>Skeletal Muscle &amp; Nervous System cont.</b></p> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 77-83, 88-92, 83-87</i></li> <li>• <b>Quiz #1 Due on Sunday 1/31</b> by 11:59pm</li> </ul>
Week 3 (2/1- 2/5)	<p><b>Skeletal Muscle &amp; Nervous System cont.</b></p> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Read: 95-105, 131-142, Chapter 2</i></li> <li>• <b>Lecture HW #2 Due on Sunday 1/31</b> by 11:59 pm</li> <li>• <b>Math #1 Due on Sunday 2/7</b> by 11:59pm</li> </ul>
Week 4 (2/8- 2/12)	<p><b>Metabolism Foundations</b></p> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 47-55</i></li> <li>• <b>Quiz #2 Due on Sunday 2/14</b> by 11:59pm</li> </ul>
Week 5 (3/15- 3/19)	<p><b>Exercise Metabolism</b></p> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 57-71</i></li> <li>• <b>Math #2 Due on Sunday 2/21</b> by 11:59 pm</li> <li>• <b>Optional Textbook Assign. #1 Due on Sunday 2/21</b> by 11:59pm</li> </ul>
<p><b>MIDTERM #1 on WEDNESDAY, FEBRUARY 24<sup>th</sup>- Due by 11:59 pm</b></p>	

<p>Week 6 (2/22- 2/26)</p>	<p><b>Cardiovascular Physiology Intro.</b></p> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 147-155,</i></li> <li>• <b>Lecture HW #3 Due on Sunday 2/28</b> by 11:59pm</li> </ul>
<p>Week 7 (3/1- 3/5)</p>	<p><b>Cardiovascular Physiology Intro.</b></p> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 156-165</i></li> <li>• <b>Quiz #3 Due on Sunday 3/7</b> by 11:59pm</li> </ul>
<p>Week 8 (3/8- 3/12)</p>	<p><b>Cardiovascular Exercise Physiology</b></p> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 166-173</i></li> </ul>
<p>Week 9 (3/15- 3/19)</p>	<p><b>CV Ex. Phys. &amp; Pulmonary Respiration Intro.</b></p> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 179-185, 187-200</i></li> <li>• <b>Math #3 Due on Sunday 3/21</b> by 11:59 pm</li> <li>• <b>Optional Textbook Assign. #2 Due on Sunday 3/21</b> by 11:59pm</li> </ul>
<p>Week 10 (3/22- 3/26)</p>	<p><b>Exercise Respiration &amp; Environmental Challenges</b></p> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 310-315, 321-325</i></li> <li>• <b>Lecture HW #4 Due on Sunday 3/28</b> by 11:59pm</li> <li>• <b>Quiz #4 Due on Sunday 3/28</b> by 11:59pm</li> </ul>
<p>Week 11 (3/29- 4/2)</p>	<p><b>Environmental Challenges</b></p> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 327-329, 331-335</i></li> <li>• <b>Math #4 Due on Sunday 4/4</b> by 11:59 pm</li> <li>• <b>Optional Textbook Assign. #3 Due on Sunday 4/4</b> by 11:59pm</li> </ul>
<p style="text-align: center;"><b>MIDTERM #2 on WEDNESDAY, APRIL 7<sup>th</sup>- Due by 11:59 pm</b></p>	



Week 12 (4/5- 4/9)	<b>Endocrinology Intro.</b> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 209-217</i></li> <li>• <b>Lecture HW #5 Due on Sunday 4/11</b> by 11:59 pm</li> </ul>
Week 13 (4/12- 4/16)	<b>Exercise Endocrinology</b> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <i>Optional Textbook Reading: 238-241</i></li> <li>• <b>Quiz #5 Due on Sunday 4/18</b> by 11:59 pm</li> </ul>
Week 14 (4/19- 4/23)	<b>Endocrine Control of Metabolism during Exercise</b> <ul style="list-style-type: none"> <li>• Watch &amp; Study Lecture Videos</li> <li>• <b>Lecture HW #6 Due on Sunday 4/25</b> by 11:59pm</li> <li>• <b>Math #5 Due on Sunday 4/25</b> by 11:59 pm</li> <li>• <i>Optional Textbook Assign. #4 Due on Sunday 4/25</i> by 11:59pm</li> </ul>
Week 15 (4/26 & 4/27)	<b>Semester Wrap-Up!</b>
<b>FINAL EXAM on WEDNESDAY, MAY 5<sup>th</sup>- Due by 11:59 pm</b>	