

**George Mason University**  
**College of Education and Human Development**  
**Masters in Kinesiology**

KINE 601.001 – Advanced Exercise Physiology  
3 Credits, Fall 2021  
Tuesday/10:30-11:50am KJH 248– Science and Technology Campus  
Thursday/ 10:30am-12:00pm- Online

**Faculty**

Name: Dr. Charles Robison  
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**Prerequisites/Corequisites**

Admission to the Kinesiology MS graduate program or approval of course instructor.

**University Catalog Course Description**

Explores in-depth topics on the effects of physical activity on physiological function. Includes the examination of exercise physiology concepts through analysis of research publications.

**Course Overview**

This course builds upon previous coursework in anatomy, physiology, and exercise physiology. Various physiological systems will be thoroughly examined with an emphasis on their response to physical activity, including implications for health and performance. Exercise physiology research publications will also be critically reviewed and discussed.

**Course Delivery Method**

This course will be delivered using lecture, lab, seminar formats and hybrid online formats.

**Learner Outcomes or Objectives**

This course is designed to enable students to do the following:

1. Explain the physiological process of skeletal muscle contraction and its response to acute and chronic physical activity.
2. Assess carbohydrate, lipid, and protein metabolism and how bioenergetics systems respond to acute and chronic physical activity.
3. Examine the endocrine system and how various hormones aid in the response to acute and chronic physical activity.

4. Analyze the physiology of the cardiovascular and pulmonary systems along with its response to acute and chronic physical activity
5. Evaluate current research in exercise physiology and extend findings to topics discussed in class through formal and informal class presentations.

### **Professional Standards**

Not Applicable

### **Required Texts**

McArdle, W.D., Katch, F.I, and Katch, V.L. (2014). *Exercise Physiology: Nutrition, Energy, and Human Performance*, 8<sup>th</sup> edition. Lippincott, Williams & Wilkins.

### **Course Performance Evaluation**

Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard, Tk20, hard copy).

- **Assignments and/or Examinations**

Final Examination (30%)  
*Cumulative exam.*

Quizzes, Lab Reports and Assignments (50%)  
*Periodic quizzes and assignments will be assigned throughout the modules.*

Article Discussions (20%)  
*Students will discuss assigned research article.*

- **Other Requirements**

- **Attendance**

- Students are expected to be on time, attend all class meetings and be prepared for in class assignments and projects. Excused absences include the following: illness (must bring a receipt or note from a doctor), family death, athletic/academic event, and others at the discretion of the instructor. For known upcoming absences, students must contact the instructor at least one week in advance to the missed class to make up work. In the case of illness or some other unforeseen absence, the student must contact the instructor via e-mail or telephone. At the next attended class meeting the student will discuss material that is to be completed. It is the student's obligation to pursue any make-up work.

- **Academic Load**

- Although many students must work to meet living expenses, employment and personal responsibilities are not acceptable reasons for late arrivals, missed classes, or incomplete assignments. Employment must not take priority over academic responsibilities. For additional information on this subject, please see the GMU

Academic Catalog

([http://catalog.gmu.edu/content.php?catoid=5&navoid=104#Registration\\_attendance](http://catalog.gmu.edu/content.php?catoid=5&navoid=104#Registration_attendance)).

Students failing to observe these guidelines should expect no special consideration for academic problems arising from the pressures of employment.

○ **Honor Code**

- Students are held to the standards of the George Mason University Honor Code (see <http://honorcode.gmu.edu> for details). Violations, including cheating and plagiarism, will be reported to the Honor Committee. Student assignments may be put through plagiarism detecting software.

○ **Written Assignments**

- All assignments must be typed in Microsoft Word, and formatted as follows (*unless otherwise specified*): double spaced, 12 point Times New Roman font, 1 inch margins, your name and title in the running header at top left hand corner, continuous line numbers on left margin, and page numbers centered in footer. Failure to comply with any or all parts of this format will result in an unacceptable assignment, which corresponds to zero (0) points.
- Pay close attention to spelling and grammar as these will count towards your grade on written assignments. American Medical Association Manual (AMA) of Style (10<sup>th</sup> edition) format must be used for all written work in this class (e.g., in referencing, creation of tables, and formatting headers for paper sections).
- Assignments must be turned in on Blackboard/MyMason Portal by the beginning of class on the specified date due (*unless otherwise specified*). No late assignments will be accepted. It is recommended that students keep copies of all submitted work.

○ **Technology Use During Class**

- As per GMU policy, all sound emitting technology is required to be turned off during the class meeting time. No sound emitting technology (e.g., cell phones, smart phones, iPads, Tablets, pagers, etc.) is allowed at any time during the class period. Students who are observed using any form of technology inappropriately (e.g., sending text messages from cell phones, visiting social networking sites from laptops, etc) will be dismissed from class for the day, counted as an absence, and not permitted to make up missed assignments. Additionally, no laptop computers (e.g., netbooks, notebooks, etc.) will be permitted for use during class time unless with permission from the instructor.

○ **E-mail Correspondence**

Only messages that originate from a George Mason University address will be accepted. Please address the subject line for all email pertaining to this course as: *KINE 601: Last Name – purpose of email*. The following is an appropriate professional format:

Subject: KINE 601: Help with (fill in blank)

Dear Dr. Name, (*Introductory salutation*)

I have a question regarding one of the assignments. (*Text body*)

Regards, (*Ending Salutation*)

Mr./Mrs. Student (*Your name*)

*Note:* All email will be responded to in the order in which it is received. Students should allow 48 hours for a response.

- **Grading**

A = 94 – 100	B+ = 87 – 89	C+ = 77 – 79	D = 60 – 69
A- = 90 – 93	B = 84 – 86	C = 74 – 76	F = 0 – 59
	B- = 80 – 83	C- = 70 – 73	

Final letter grades do not round up. For example, a final percentage of 89.99% will result in a B+.

Although a B- is a satisfactory grade for a course, students must maintain a 3.00 average in their degree program and present a 3.00 GPA on the courses listed on the graduation application.

### Professional Dispositions

See <https://cehd.gmu.edu/students/polices-procedures/>

Students are expected to exhibit professional behaviors and dispositions at all times.

### Class Schedule

Week	Meeting date /format	Topic	Chapter	Assignments
1	8/24 face to face	Course introduction Energy	Chapters 5 & 6	
	Online Asynchronous	ATP, Phosphagen System, Carbohydrate Metabolism	Chapter 6	Quiz 1 Pathway Creation Activity Quiz 2
2	8/31 face to face	Wingate with Lactate Lab Treadmill VO <sub>2</sub> , Fat, CHO Assessment Lab		Lab reports
	<b>9/2 Online Synchronous</b>	Fat and Protein Metabolism, How Exercise Training Impacts the Anaerobic and Aerobic Systems Synchronous Journal Article Discussion	Chapters 6, 21 & 15	Quiz 3 Article Discussion Quiz 4

		The Cardiovascular System		
3	9/7 face to face	Functional Capacity of the Cardiovascular System Concept Map Activity	Chapter 17	Quiz 5 Concept Map Activity
	Online Asynchronous	Cardiovascular Regulation and Integration, Cardiovascular Adaptations Pulmonary	Chapters 16 & 21 Chapters 13 & 14	Quiz 6 Quiz 7
4	9/14 face to face	HR & BP Lab ECG Lab		Lab reports
	<b>9/16 Online Synchronous</b>	Synchronous Journal Article Discussion Skeletal Muscle: Structure and Function	Chapter 18	Article Discussion Quiz 8
5	9/21 face to face	Steps of Muscle Contraction	Chapter 18	Steps of Muscle Contraction Activity
	Online Asynchronous	Muscular Adaptations to Endurance, Strength, and Power Training	Chapter 22-Part 2	Quiz 9
6	9/28 face to face	In class journal article discussion		Article Discussion
	Online Asynchronous	Muscle Fatigue	Chapter 20	Quiz 10
7	10/5 face to face	Hormones Exercise and Insulin	Chapter 20	Infographic Creation Quiz 11
	<b>10/7 Online Synchronous</b>	Synchronous Journal Article Discussion		Article discussion Take home exam given
8	<b>10/12- No meeting due to Fall Break</b>			
	Online Asynchronous	Cumulative final exam		Take home exam due 10/14 at 10:30am

Note: Faculty reserves the right to alter the schedule as necessary, with notification to students.

### Core Values Commitment

The College of Education and Human Development is committed to collaboration, ethical leadership,

innovation, research-based practice, and social justice. Students are expected to adhere to these principles: <http://cehd.gmu.edu/values/>.

## **GMU Policies and Resources for Students**

### *Policies*

- Students must adhere to the guidelines of the Mason Honor Code (see <https://catalog.gmu.edu/policies/honor-code-system/>)
- Students must follow the university policy for Responsible Use of Computing (see <http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>).
- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students **solely** through their Mason email account.
- Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see <https://ds.gmu.edu/>).
- Students must follow the university policy stating that all sound emitting devices shall be silenced during class unless otherwise authorized by the instructor.

### *Campus Resources*

- Support for submission of assignments to Tk20 should be directed to [tk20help@gmu.edu](mailto:tk20help@gmu.edu) or <https://cehd.gmu.edu/aero/tk20>. Questions or concerns regarding use of Blackboard should be directed to <https://its.gmu.edu/knowledge-base/blackboard-instructional-technology-support-for-students/>.
- For information on student support resources on campus, see <https://ctfe.gmu.edu/teaching/student-support-resources-on-campus>

### **Notice of mandatory reporting of sexual assault, interpersonal violence, and stalking:**

As a faculty member, I am designated as a “Responsible Employee,” and must report all disclosures of sexual assault, interpersonal violence, and stalking to Mason’s Title IX Coordinator per University Policy 1202. If you wish to speak with someone confidentially, please contact one of Mason’s confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance from Mason’s Title IX Coordinator by calling 703-993-8730, or emailing [titleix@gmu.edu](mailto:titleix@gmu.edu).

**For additional information on the College of Education and Human Development, please visit our website <https://cehd.gmu.edu/students/>.**