

GEORGE MASON UNIVERSITY
School of Recreation, Health, and Tourism
Division of Health and Human Performance
KINE 310 – DL4 — Exercise Physiology I (3)
Fall 2015

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OFFICE LOCATION:	Online – E-Mail	PHONE NUMBER:	919-753-6654
OFFICE HOURS:	By Appointment	FAX NUMBER:	
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PREREQUISITES/COREQUISITES
BIOL 124, BIOL 125, ATEP 300, Coreq. KINE 200

COURSE DESCRIPTION

Introduces students to the physiologic, neuroendocrine, and biochemical changes of the human body that are associated with exercise and work.

DELIVERY METHOD:

This course will be delivered online using an “asynchronous” format via the Blackboard learning management system (LMS) housed in the MyMason portal. You will log in to the Blackboard course site using your Mason email name (everything before “@masonlive.gmu.edu) and email password. Asynchronous has no set class times which requires you to stay on top of all readings and assignment. The Course week is defined as Monday to Saturday. The course site will be available on Tuesday August 25 at 12:01am EST and will close Monday December 21st at 11:59pm EST.

TECHNICAL REQUIREMENTS

To participate in this course, students will need the following resources:

- High-speed Internet access with a standard up-to-date browser, either Internet Explorer or Mozilla Firefox. Opera and Safari are **not** compatible with Blackboard;
- Consistent and reliable access to their GMU email and Blackboard, as these are the official methods of communication for this course
- Students may be asked to create logins and passwords on supplemental websites and/or to download trial software to their computer or tablet as part of the course requirements.
- The following software plug-ins for Pcs and Macs respectively, available for free downloading by clicking on the link next to each plug-
 - Adobe Acrobat Reader: <http://get.adobe.com/reader/>
 - Windows Media Player: <http://windows.microsoft.com/en-US/windows/downloads/windows-media-player>
 - Apple QuickTime Player: www.apple.com/quicktime/download/
 - Respondus Lockdown Browser
- A headset microphone for use with the Blackboard Collaborate web conferencing tool.
- Update Software (Respondus Lockdown Browser and all others) regularly.

EXPECTATIONS

- **Course Week:** The Course week is defined as Monday to Saturday. The course site will be available on Tuesday August 25 at 12:01am EST and will close Monday December 21st at 11:59pm EST.

- Students must actively check the course Blackboard site and their GMU email for communications from the instructor, at a minimum this should be **6 times per week**.
- Students are expected to actively engage in all course activities throughout the semester, which include viewing of all course materials, completing course activities and assignments, and participating in course discussions and group interactions.
- Students are expected to demonstrate competence in the use of all course technology. Students are expected to seek assistance if they are struggling with technical components of the course.
- Students should expect that they could experience some technical difficulties at some point in the semester and should, therefore, budget their time accordingly. Late work will not be accepted based on individual technical issues.
- **Workload:** Expect to log in to this course **at least SIX times a week** to read announcements, participate in the discussions, and work on course materials. Remember, this course is **not** self-paced. There are **specific deadlines** and **due dates** listed in the **SYLLABUS** section of this syllabus to which you are expected to adhere. It is the student's responsibility to keep track of the weekly course schedule of topics, readings, activities and assignments due.
- **Advising:** If you would like to schedule a one-on-one meeting to discuss course requirements, content or other course-related issues, and you are unable to come to the Mason campus, we can meet via telephone or web conference. Send me an email to schedule your one-on-one session and include your preferred meeting method and suggested dates/times.
- **Netiquette:** Our goal is to be **collaborative**, not combative. Experience shows that even an innocent remark in the online environment can be misconstrued. I suggest that you always re-read your responses carefully before you post them to encourage others from taking them as personal attacks. **Be positive in your approach to others and diplomatic with your words.** I will do the same. Remember, you are not competing with each other but sharing information and learning from one another as well as from the instructor.

COURSE OBJECTIVES

Upon successful completion of this course students will:

1. Have a theoretical knowledge regarding the physiological responses and capacity for exercise by the human body.
2. Be able to differentiate the physiological metabolic processes that govern human movement and apply each of these processes to physical performance.
3. Be able to compare and contrast the physiological principles of the support systems of the body and appraise how each system is affected by and adapts to exercise.
4. Demonstrate the ability to make recommendations regarding exercise programs based on basic exercise physiology knowledge.
5. Attain knowledge of current issues in exercise physiology research and be able to critically evaluate published literature

REQUIRED READINGS

Kennedy, W.L., Wilmore, J.H., Costill, D.L. (2012) *Physiology of Sport and Exercise (6th edition)*. Human Kinetics.

EVALUATION

This course will be graded on a percentage system.

Assignment	Percentages
Exam #1	10%
Exam #2	10%
Exam #3	10%
Exam #4	10%
Final Exam	20%
Homework Assignments	15%
Research Paper and Presentation	15%
Professionalism	10%
Total	100%

Grading Scale

A = 94 – 100	B+ = 88 – 89	C+ = 78 – 79	D = 60 – 69
A- = 90 – 93	B = 84 – 87	C = 74 – 77	F = 0 – 59
	B- = 80 – 83	C- = 70 – 73	

Exams and Final Exam (Objectives 1, 2, 3 & 4)

There will be **4** exams and a final exam (**5** total exams). The final exam will be cumulative. The format for all exams will be multiple choice, true/false, and fill in the blank questions. **IMPORTANT** – the exams will be timed. Once you start the exam you must complete within a set amount of time (90 minutes for mid-term exams; 120 minutes for the final exam).

Homework Assignments (Objectives 1, 4 & 5)

Regular homework will be assigned. There will be **8** total HW assignments. No late homework assignments will be accepted. All homework assignments must be submitted on Blackboard.

Research Paper and Presentation (Objective 5)

Students will be required to submit a research paper. The research paper will be a literature review of a specific topic in the field of exercise physiology. The literature review must summarize the **major** papers related to the topic chosen. The literature review should be 4-6 pages (typed, double-spaced, 12 pt font). A **minimum of 10** references must be used. The paper should be formatted using APA guidelines. A more detailed description of the research paper requirements will be made available on Blackboard. Additionally, students must create a 8-10 minute PowerPoint presentation of their research paper. Students will be required to record audio of them presenting the presentation using the built in audio recording in the PowerPoint software. Directions as to how to perform this will be given if needed. The research paper and presentation must be submitted on Blackboard.

TENTATIVE COURSE SCHEDULE

DATE			TOPIC	READINGS/ASSIGNMENT DUE
Week 1	August/September	31-2	Read: Syllabus Study PowerPoint slides: Introduction to Exercise Physiology, Macronutrients and Micronutrients	Read Chapter 15 pp 367-391
Week 1	September	3-5	Study for Quiz; Start HW #1; Continue reviewing materials (Readings, PPT, & supplemental materials) for Exam #1	Complete Quiz on Respondus Lockdown Browser Due by 5 pm on Saturday, September 5th

DATE			TOPIC	READINGS/ASSIGNMENT DUE
Week 2	September	7 – 9	Read/Listen/Watch: Supplement Materials on Blackboard for Exam #1; Read Book; Work on HW #1	
Week 2	September	10-12	Study PowerPoint slides: Optimum Nutrition for Exercise; Ergogenic Aids to Performance	1) Read Chapter 16 2) HW #1 Due by 5 pm on Saturday, September 12th
Week 3	December	14-16	Review for Exam #1, Work on HW #2	
Week 3	September	17-19	Exam #1	1) Exam 1 completed by 5 pm on Saturday, September 19th 2) HW #2 Due by 5 pm on Saturday, September 19th
Week 4	September	21-23	Study PowerPoint slides: Fundamentals of Human Energy Transfer During Exercise;	Read Chapter 2
Week 4	September	24-26	Read/Listen/Watch: Supplement Materials on Blackboard for Exam #2; Read Book; Work on HW #3	
Week 5	September	28-30	Study PowerPoint slides: Measuring and Evaluating Human Energy – Generating Capacities During Exercise; Energy Expenditure During Rest and Physical Activity	1) Read Chapter 5 2) HW#3 Due by 5 pm on Wednesday, September 30th
Week 5	October	1-3	Review for Exam #2, Work on HW #4	
Week 6	October	5-7	Exam #2 completed by 5 pm on Wednesday October 7 th	Exam #2 completed by 5pm Wednesday October 7 th HW #4 D Due by 5 pm on Wednesday, October 7th
Week 6	October	8 –10	Research paper/PowerPoint project topic selection; Work on HW #5	Research paper/PowerPoint topics Selections due by 5PM on Saturday, October 10th
Week 7	October	12–14	Study PowerPoint slides: The Cardiovascular System and Exercise	Read Chapter 6 Read Chapter 8 pp 181-196 HW #5 due by 5PM on Wednesday, October 14th
Week 7	October	15-17	Read/Listen/Watch: Supplement Materials on Blackboard for Exam #3; Read Book; Work on HW #6	
Week 8	October	19-21	Study PowerPoint slides: The Respiratory System and Exercise	Read Chapter 7 Read Chapter 8 pp 196-203 HW #6 due by 5PM on Wednesday, October 21st
Week 8	October	22-24	Read/Listen/Watch: Supplement Materials on Blackboard for Exam #3; Read Book; Work on HW #7	
Week 9	October	26-28	Study PowerPoint slides: The Neuromuscular System	Read Chapter 1 Read Chapter 3

DATE			TOPIC	READINGS/ASSIGNMENT DUE
Week 9	October	29-31	Read/Listen/Watch: Supplement Materials on Blackboard for Exam #3; Read Book;	
Week 10	November	2 - 4	Study PowerPoint slides: The Endocrine System - Hormones, Exercise and Training	Read Chapter 4 HW #7 Due by 5 pm on Wednesday, November 4th
Week 10	November	5 - 7	Review for Exam #3	
Week 11	November	9 –11	Exam #3	Exam #3 completed by 5 pm on Wednesday, November 11th
Week 11	November	12–14	Study PowerPoint slides: Exercise Training and Adaptations	Read Chapters 9,10,11,12,13
Week 12	November	16-18	Read/Listen/Watch: Supplement Materials on Blackboard for Exam #4; Read Book; Work on HW #8	HW #8 Due by 5 pm on Wednesday, November 18 th
Week 12	November	19-21	Study PowerPoint slides: Body Composition, Obesity, Children, Aging and Obesity	Read Chapters 15 pp355-366 Read Chapters 17, 18, 22
Week 13	November	23-25	Study PowerPoint slides: Sex Differences; Prescription of Exercise for Health&Fitness; CV Disease Prevention	Read Chapters 19, 20, 21
Week 13	November	26-28	Thanks giving Break Finish Research paper and PowerPoint	
Week 14	November/ December	30-2	Turn in Research paper and PowerPoint presentation; Study for Exam #4	Research/PowerPoint project is due by 5PM on Wednesday, December 2nd
Week 14	December	3 - 5	Study for Exam #4	
Week 15	December	7 – 9	Exam #4	Exam #4 completed by 5 pm on Wednesday, December 9th
Week 15	December	10-12	Study for Final	
Week 16	December	14-16	Finals Week – Study for FINAL EXAM – 100 Questions on ALL PowerPoint slides, Readings, Supplemental Materials, and HW	
Week 16	December	17-19	Study for Final	
Week 17	December	20-21	FINAL EXAM Monday the 15 th – 100 Questions on ALL PowerPoint slides, Readings, Supplemental Materials, and HW	Final Exam completed by 5 pm on Monday, December 15 th

Note: Faculty reserves the right to alter the schedule as necessary.

Professionalism 10% of Final Grade (Objectives 1,2,3,4 & 5)

Kinesiology students are expected to behave in a professional manner. Depending upon the setting professionalism may appear different, but typically consists of similar components. For undergraduate Kinesiology students in a classroom setting and the online learning professionalism generally comprises the following components:

Attendance and Participation Evaluation: Since this is an online class with no scheduled meeting times attendance will not count towards the professionalism grade. You are expected to participate in class discussions and activities (discussion boards, blogs, etc.). All homework and exams are scheduled to be completed by specific dates and times, no exceptions will be made. See syllabus for these dates and times

Communication – When communicating with the instructor and classmates, either face-to-face or via email, students should address the other person appropriately, use appropriate language and maintain a pleasant demeanor.

Example email with instructor:

Dr. *Instructor Last Name*,

I have a question regarding....

Regards,
Student's Name

Example in-person interaction with instructor:

Student: Professor (*instructor's last name*) I have a question regarding....

Professor: (Student's name) I would be happy to help you. What is your question?

Student: My question is.....

Professor: The answer to that question is...

Student: Professor (*instructor's last name*) thank you for your time and availability to answer my questions.

Communication Evaluation: For every instance in which the student does not use proper communication points will be deducted. All incidents will be documented by the instructor. The Professor reserves the right to not answer emails and questions in person, if the student does not appropriately address the Professor.

Responsibility/Accountability/– Professionals take responsibility for their actions and are accountable. This can occur at multiple levels but generally consists of completing assignments on time, submitting work that is of the appropriate quality, honoring commitments and owning up to mistakes.

Honesty/Integrity - Students are expected to be honest with the instructor, classmates and themselves. Professionals keep their word when committing to something and act in an ethical manner. See George Mason University policy for further guidance.

Responsibility/Accountability/ Honesty/Integrity Evaluation: For every instance in which the student is irresponsible, not accountable for their actions, dishonest or fail to act in an ethical manner points will be deducted. All incidents will be documented by the instructor.

Self-Improvement/Self-awareness – One should be aware of their strengths/weaknesses and constantly seek to improve. Professionals regularly seek out opportunities to increase their knowledge and improve their current skill set.

Self-Improvement/Self-awareness Evaluation : For every instance in which the student does not take advantage of an opportunity to increase their knowledge in the subject area of the class and/or their personal skill set, deductions will be made. All incidents will be documented by the instructor.

ACCREDITATION STANDARDS

This course meets the Commission on Accreditation of Allied Health Education Programs (CAAHEP) requirements and covers the following American College of Sports Medicine's Knowledge-Skills-Abilities (KSA's):

KSA	Description	Lecture, Lab or Both
	GENERAL POPULATION/CORE: EXERCISE PHYSIOLOGY AND RELATED EXERCISE SCIENCE	
1.1.9	Ability to describe the systems for the production of energy.	Lecture
1.1.13	Knowledge of the heart rate, stroke volume, cardiac output, blood pressure, and oxygen consumption responses to exercise.	Lecture
1.1.17	Knowledge of the physiological adaptations that occur at rest and during submaximal and maximal exercise following chronic aerobic and anaerobic exercise training.	Lecture
1.1.19	Knowledge of the structure and function of the skeletal muscle fiber.	Lecture
1.1.20	Knowledge of the characteristics of fast and slow twitch muscle fibers.	Lecture
1.1.21	Knowledge of the sliding filament theory of muscle contraction.	Lecture
1.1.22	Knowledge of twitch, summation, and tetanus with respect to muscle contraction.	Lecture
1.1.26	Knowledge of the response of the following variables to acute static and dynamic exercise: heart rate, stroke volume, cardiac output, pulmonary ventilation, tidal volume, respiratory rate, and arteriovenous oxygen difference.	Lecture
1.1.27	Knowledge of blood pressure responses associated with acute exercise, including changes in body position.	Lecture
1.1.31	Knowledge of how the principles of specificity and progressive overload relate to the components of exercise programming.	Lecture
	GENERAL POPULATION/CORE: NUTRITION AND WEIGHT MANAGEMENT	Lecture
1.8.1	Knowledge of the role of carbohydrates, fats, and proteins as fuels for aerobic and anaerobic metabolism.	Lecture
1.8.4	Knowledge of the effects of diet, exercise and behavior modification as methods for modifying body composition.	Lecture
1.8.7	Knowledge of the importance of maintaining normal hydration before, during, and after exercise.	Lecture
1.8.14	Knowledge of common nutritional ergogenic aids, the purported mechanism of action, and any risk and/or benefits (e.g., carbohydrates, protein/amino acids, vitamins, minerals, herbal products, creatine, steroids, caffeine).	Lecture
	GENERAL POPULATION/CORE: SAFETY, INJURY PREVENTION, AND EMERGENCY PROCEDURES	Lecture
1.10.6	Knowledge of the effects of temperature, humidity, altitude, and pollution on the physiological response to exercise and the ability to modify the exercise prescription to accommodate for these environmental conditions.	Lecture

Student Expectations

- Students must adhere to the guidelines of the George Mason University Honor Code [See <http://oai.gmu.edu/the-mason-honor-code/>].
- Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See <http://ods.gmu.edu/>].
- 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 George Mason University 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 must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.

Campus Resources

- The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See <http://caps.gmu.edu/>].
- The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See <http://writingcenter.gmu.edu/>].
- For additional information on the College of Education and Human Development, School of Recreation, Health, and Tourism, please visit our website [See <http://rht.gmu.edu/>].

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

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.