

GEORGE MASON UNIVERSITY
School of Recreation, Health, and Tourism
Division of Health and Human Performance
KINE 310-002: Exercise Physiology I (3)
Fall 2013

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|---------------|--------------------|----------------|--|
| DAY/TIME: | M, W 3:00 – 4:15 | LOCATION: | PW – Bull Run Hall 257 |
| PROFESSOR: | LeaAnn Fritsch, MS | EMAIL ADDRESS: | lfritsch@gmu.edu |
| OFFICE HOURS: | By appointment | PHONE NUMBER: | 703-472-7530 |

PREREQUISITES

BIOL 124, BIOL 125, ATEP 300

COREQUISITES

KINE 200

COURSE DESCRIPTION

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

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.

COURSE OVERVIEW

This course provides a theoretical basis for understanding the body's physiological responses to exercise. Specifically, the course investigates how the support systems of the body (respiratory, cardiovascular, muscular, etc.) function in cooperation with human energy production to insure that energy is provided for exercise. Emphasis will be placed upon the practical application of exercise physiology principles to coaching, teaching, and other physical training practices.

ATTENDANCE & PARTICIPATION

Attendance is **required** for this class. Arriving to class late or leaving early will be counted as an absence. Students are expected to show up prepared to class and participate during class

activities. Students who know they will need to miss class for a legitimate reason should contact the instructor BEFORE the class. Students who know they will need to miss a class for an excused reason should contact the instructor within 24 hours of missing the class. Make-up tests, quizzes, assignments, or other grades will be granted for excused absences only. Excused absences include: serious illness, official university excused absences and extenuating circumstances. It is the student's responsibility to contact the instructor in order to obtain the make-up work.

ACADEMIC LOAD

In addition to attending the lectures there will be regular homework assignments and projects that may require anywhere from 2-10 hours of work per week. Additionally, regular readings will be assigned. Students are expected to complete all outside work on time. Extensions will not be granted on assignments unless an extenuating circumstance arises. Students may be asked to provide official documentation in certain instances. The purpose of the assignments is to aid students in learning the material. *Students who attend lectures and complete all assignments on time will be better prepared for the exams than students who do not do so.*

ASSIGNMENTS

All assignments must be typed unless specifically told otherwise. A loss of points may occur for improper grammar and spelling. It is recommended students save all assignments on their personal computers and/or back-up device.

CLASS DELIVERY

This course is primarily a lecture class. However, other approaches may be used to facilitate learning. These include: class discussions, videos, demonstrations, and in-class activities.

TECHNOLOGY USE

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, visiting social networking sites, etc.) will be dismissed from class for the day, counted as absent, and not permitted to make up missed assignments.

CORRESPONDENCE

The preferred method of communication outside of class is email. Emails should originate from a George Mason email account and be in professional format (i.e. emails should not look like a text message!).

REQUIRED READINGS

Kenney, Larry W., Wilmore, Jack H., Costill, David L. (2012) *Physiology of Sport and Exercise (5th Edition)*. Human Kinetics.

EVALUATION

This course will be graded on a point system, with a total of 1045 possible points.

| Assignment | Points |
|----------------------------|----------------|
| Exam #1 | 100 |
| Exam #2 | 100 |
| Exam #3 | 100 |
| Exam #4 | 100 |
| FINAL EXAM | 200 |
| Homework | 120 (20 each) |
| Activity Labs | 300 (100 each) |
| Attendance & Participation | 25 |
| Total | 1045 |

GRADING SCALE

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|----------|----------|----------|---------|
| 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 | | |

TENTATIVE COURSE SCHEDULE

| DATE | | | TOPIC | READINGS/ASSIGNMENT DUE |
|------|-----------|----|---|---|
| M | August | 26 | <i>Lecture Day</i> – Syllabus; Introduction to Exercise Physiology; Chapter 1 Structure and Function of Exercising Muscle | Read chapters 1, 2, & 3 |
| W | August | 28 | <i>Lecture Day</i> – Chapter 2 Fuel for Exercise; Chapter 3 Neural Control of Exercising Muscle | Work on Homework Assignment #1 |
| M | September | 2 | NO CLASS—LABOR DAY | Read chapters 4 & 5 |
| W | September | 4 | <i>Lecture Day</i> – Chapter 4 Hormonal Control During Exercise; Chapter 5 Energy Expenditure and Fatigue | Homework assignment #1 Due Study! |

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| M | September | 9 | EXAM #1 (Chapters 1-5) | Review Lab #1, print instructions, come to class prepared for activity |
| W | September | 11 | NON-Lecture Day – Activity Lab #1 | Work on Homework assignment #2 |
| M | September | 16 | <i>Lecture Day</i> – Chapter 6 The Cardiovascular System; Chapter 7 The Respiratory System | Read chapters 6 & 7; Homework assignment #2 Due |
| W | September | 18 | NON-Lecture Day – No Class | Work on Activity Lab #1 |
| M | September | 23 | <i>Lecture Day</i> – Chapter 8 Cardiorespiratory Responses to Acute Exercise; Chapter 9 Principles of Exercise Training | Read chapters 8 & 9; Activity Lab #1 Due |
| W | September | 25 | NON-Lecture Day – No Class | Work on Homework assignment #3 |
| M | September | 30 | <i>Lecture Day</i> – Chapter 10 Adaptations to Resistance Training; * | Read chapter 10; Homework assignment #3 Due |
| W | October | 2 | NON-Lecture Day – No Class | Study! |
| M | October | 7 | EXAM #2 (Chapters 6-10) | |
| W | October | 9 | <i>Lecture Day</i> – Chapter 11 Adaptations to Aerobic and Anaerobic Training; Chapter 12 Exercise in Hot and Cold Environments | Read chapters 11 & 12 |
| M | October | 14 | NO CLASS—COLUMBUS DAY | Work on Homework assignment #4 |
| W | October | 16 | <i>Lecture Day</i> – Chapter 14 Training for | Read chapters 14 & 15; |

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| | | | Sport; Chapter 15 Body Composition and Nutrition for Sport | Work on Homework assignment #4 |
| M | October | 21 | <i>Lecture Day</i> – Chapter 16 Ergogenic Aids and Sport | Read chapter 16; Homework assignment #4 Due |
| W | October | 23 | <i>NON-Lecture Day – No Class</i> | Study! |
| M | October | 28 | EXAM #3 (Chapters 11,12,14-16) | Work on Homework assignment #5; Review Lab #1, print instructions, come to class prepared for activity |
| W | October | 30 | <i>NON-Lecture Day; Activity Lab #2</i> | Homework assignment #5 Due |
| M | November | 4 | <i>Lecture Day</i> – Chapter 17 Children and Adolescents in Sport and Exercise; Chapter 18 Aging in Sport and Exercise | Read chapters 17 & 18 |
| W | November | 6 | <i>NON-Lecture Day – No Class</i> | |
| M | November | 11 | <i>Lecture Day</i> – Chapter 20 Prescription of Exercise; Chapter 21 Cardiovascular Disease | Read chapters 20 & 21 Activity Lab #2 Due |
| W | November | 13 | <i>NON-Lecture Day – No Class</i> | Work on Homework assignment #6 |
| M | November | 18 | <i>Lecture Day</i> – Chapter 22 Obesity, Diabetes, and Physical Activity; * | Read chapter 22; Homework assignment #6 Due; Review Lab #1, print instructions, come to class prepared for activity |
| W | November | 20 | <i>NON-Lecture Day; Activity Lab #3</i> | |

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|---|----------|----|--|-----------------------------------|
| M | November | 25 | EXAM #4 (Chapters 17, 18, 20-22) | Study! |
| W | November | 27 | NO CLASS—THANKSGIVING | |
| M | December | 2 | “Housekeeping” | <u>Activity Lab #3 Due</u> |
| W | December | 4 | <i>NON-Lecture Day – No Class</i> | Study! |
| M | December | 16 | FINAL EXAM 1:30 – 4:15 | |

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

Midterm Exams and Final Exam

There will be 4 midterm exams and one final exam (5 total). The final exam will be cumulative. The format for all exams will be multiple choice, true/false, and fill in the blank questions.

Homework Assignments

Regular homework will be assigned. There will be 6 total homework assignments that will be due at the start of the class in which it is due. No late homework assignments will be accepted. A hard copy of the homework must be handed in and homework submitted via email will NOT be accepted, unless there are approved extenuating circumstances. Points will be taken off for homework that is not stapled with a single staple in the upper left corner.

Activity Labs

There will be 3 activity-based labs. These are intended to give students hands-on, practical experience with concepts covered in the course. The data will be collected in class. For each lab, students will be required to answer several short questions based on the data. A formal, short lab report will be typed and submitted. Additional details will be provided on the day the lab is conducted.

Attendance and Participation

Regularly attending class is mandatory and will count toward the final grade. Participation during the activity labs is mandatory. Participation does not necessarily mean performing physical activity – lab groups will need members to perform the physical activity, instruct the person performing the activity, take measurements, and record data.

ACADEMIC INTEGRITY

Students are expected to follow the George Mason University Honor Code. All assignments are subject to evaluation under plagiarism detection software. In the event that students hand in

written assignments that are identical to another students assignment both students will be given a zero for the assignment.

Student Expectations

- Students must adhere to the guidelines of the George Mason University Honor Code [See <http://oai.gmu.edu/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.

