

GEORGE MASON UNIVERSITY
School of Recreation, Health, and Tourism

KINE 410: Advanced Work Physiology (3)
Summer 2012

DAY/TIME:	M-Th 12:00 – 2:15 pm	LOCATION:	PW 256 Bull Run Hall
PROFESSOR:	Dr. Charles Robison	EMAIL ADDRESS:	crobiso4@gmu.edu
OFFICE LOCATION:	PW 205 Bull Run Hall	PHONE NUMBER:	703-993-7115
OFFICE HOURS:	M-Th 2:15 – 3:00pm, or by appointment	FAX NUMBER:	703-993-2025

PREREQUISITES:

BIOL 124, 125, or BIOL 103, 228; and KINE 310

COURSE DESCRIPTION:

This course provides study in advanced theory of exercise physiology. Its purpose is to advance knowledge gained in previous courses related to the physiologic, neuroendocrine, and biochemical changes of the human body which are associated with either a single bout of exercise or chronic work.

COURSE OBJECTIVES:

Upon completion of KINE 410 students should be able to:

1. Obtain theoretical knowledge relative to the human's physiologic responses to and capacity for performing work
2. Apply the principles of mammalian physiology to help themselves and others achieve optimum work performance
3. Provide intelligent and factual answers related to the effects of work on the human body and effectively communicate the implications of those effects.

COURSE OVERVIEW:

Material for the course will be drawn from the required textbook and assigned readings of published research. Class lectures will be presented in PowerPoint with handouts posted on Blackboard in advance of class meetings.

- Assignments must be turned in at the beginning of class on the specified date due or **no credit will be given**.
- Attendance - Students are expected to attend all classes. A grade of zero will be assigned to any missed presentation without prior permission from the instructor.
- Classroom Demeanor - Students are expected to attend all class sections, actively participate in class discussions, complete in-class exercises, and fulfill all assignments. Anyone exhibiting inappropriate behavior may be asked to leave (e.g. sleeping in class, texting). University policy states that all sound emitting devices shall be turned off during class unless otherwise authorized by the professor.

REQUIRED READINGS:

McArdle, W.D., Katch, F.I, and Katch, V.L. (2010) *Exercise Physiology: Nutrition, Energy, and Human Performance*, 7th edition. Lippincott, Williams & Wilkins. ISBN: 978-0-7817-9781-8

EVALUATION:

A. Written Examinations (4)	40%
B. Lab Reports	25%
C. Performance Enhancing Substance Paper	20%
D. Performance Enhancing Substance Presentation	10%
C. Class Participation	5%

FINAL EXAM:

1:30-4:15pm Thursday, August 2nd

Grading Scale

A = 93.5 – 100	B+ = 87.5 – 89.4	C+ = 77.5 – 79.4	D = 59.5 – 69.4
A- = 89.5 – 93.4	B = 82.5 – 87.4	C = 72.5 – 77.4	F = 0 – 59.4
	B- = 79.5 – 82.4	C- = 69.5 – 72.4	

Tentative Course Schedule

Date	Topic	Readings/Assignments Due
7/2	Course Introduction Bioenergetics- Energy	Chapter 5 Introduction to Energy Transfer
7/3	Bioenergetics- Photosynthesis, ATP and the Phosphagen System	Chapter 6 Energy Transfer in the Body Chapter 7 Energy Transfer during Exercise
7/4	Bioenergetics- Carbohydrate Metabolism	Chapter 6 Energy Transfer in the Body Chapter 7 Energy Transfer during Exercise
7/5	Lactate Lab Bioenergetics- Fat and Protein Metabolism	Chapter 6 Energy Transfer in the Body Chapter 7 Energy Transfer during Exercise
7/9	Cardiovascular Anatomy and Physiology Cardiovascular Physiology 1	Lactate lab report due Chapter 15 The Cardiovascular System Chapter 16 Cardiovascular Regulation and Integration Chapter 17 Functional Capacity of the Cardiovascular System
7/10	Exam 1	
7/11	Cardiovascular Physiology 2 Cardiovascular-BP, HR, and Work Rate Lab	Chapter 16 Cardiovascular Regulation and Integration Chapter 17 Functional Capacity of the Cardiovascular System
7/12	Cardiovascular Physiology 2 Compatibility of Endurance and Strength Training	Cardiovascular lab report due Chapter 16 Cardiovascular Regulation and Integration

		Chapter 17 Functional Capacity of the Cardiovascular System
7/16	Neuromuscular Physiology- Anatomy	Chapter 18 Skeletal Muscle: Structure and Function Chapter 19 Neural Control of Human Movement
7/17	Exam 2	
7/18	Neuromuscular Physiology- Muscle Contraction	Chapter 18 Skeletal Muscle: Structure and Function
7/19	Neuromuscular Physiology- Muscle Fiber Types Neuromuscular Physiology- Adaptations Muscle Activation Lab	Chapter 18 Skeletal Muscle: Structure and Function Chapter 22 Muscular Strength: Training Muscles to Become Stronger
7/23	Neuromuscular Physiology- Muscle Fiber Types Neuromuscular Physiology- Muscle Soreness	Muscle lab report due
7/24	Exam 3	
7/25	Fatigue	Chapter 19 Neural Control of Human Movement Chapter 25 Exercise and Thermal Stress
7/26	Recovery from Exercise	Chapter 7 Energy Transfer during Exercise Research article
7/30		
7/31		
8/1	Exam 4	
8/2	1:30-4:15pm, Performance Enhancing Substance Presentations	All Papers Due

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

Student Expectations

- Students must adhere to the guidelines of the George Mason University Honor Code [See <http://academicintegrity.gmu.edu/honorcode/>].
- 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/1301gen.html>].
- 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.
- Students are expected to exhibit professional behaviors and dispositions at all times.

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/>].

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.

