

GEORGE MASON UNIVERSITY  
 School of Recreation, Health, and Tourism  
 Division of Health and Human Performance

KINE 370-001: Measurement and Evaluation of Physical Fitness  
 Spring 2015 (3)

DAY/TIME:	MW 10:30-11:45 am	LOCATION:	RAC 2203
PROFESSOR	Dr. David Bever	EMAIL ADDRESS:	dbever@gmu.edu
OFFICE LOCATION:	RAC 2107	PHONE NUMBER:	703-993-2071
OFFICE HOURS:	MW 2:00-3:30 pm	FAX NUMBER:	703-993-2126

PREREQUISITES: BIO 124 and 125, ATEP 300, KINE 310

**COURSE DESCRIPTION:**

This course provides students with an opportunity to develop a solid understanding of the assessment and evaluation process used in physical education and exercise science.

**NATURE OF COURSE DELIVERY:**

This course will be delivered in both classroom and laboratory settings. Instruction will consist of lecture, small group discussion, and the utilization of fitness testing protocols..

**COURSE OBJECTIVES**

At the completion of this course students should be able to:

1. Apply basic statistical techniques in the analysis of data collected in the assessment process.
2. Develop health-related fitness assessment plans for students as well as adult clients.
3. Develop sport / motor fitness assessments for school and work settings.
4. Identify fitness- related psychological testing protocols.
5. Interpret and apply fitness assessment information in the development of job- related work performance tests.

**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
	<b>GENERAL POPULATION/CORE: PATHOPHYSIOLOGY AND RISK FACTORS</b>	
1.2.2	Knowledge of cardiovascular, pulmonary, metabolic, and musculoskeletal risk factors that may require further evaluation by medical or allied health professionals before participation in physical activity.	Lecture
	<b>GENERAL POPULATION/CORE: HEALTH APPRAISAL, FITNESS AND CLINICAL EXERCISE TESTING</b>	
1.3.2	Knowledge of the value of the health/medical history.	Lecture
1.3.3	Knowledge of the value of a medical clearance prior to exercise participation.	Lecture
1.3.4	Knowledge of and the ability to perform risk stratification and its implications	Lecture

	towards medical clearance prior to administration of an exercise test or participation in an exercise program.	
1.3.5	Knowledge of relative and absolute contraindications to exercise testing or participation.	Lecture
1.3.6	Knowledge of the limitations of informed consent and medical clearance prior to exercise testing.	Lecture
1.3.7	Knowledge of the advantages/disadvantages and limitations of the various body composition techniques including but not limited to: air displacement plethysmography (BOD POD <sup>®</sup> ), dual energy X-ray absorptiometry (DEXA), hydrostatic weighing, skinfolds and bioelectrical impedance.	Lecture/Lab
1.3.8	Skill in accurately measuring heart rate, blood pressure, and obtaining rating of perceived exertion (RPE) at rest and during exercise according to established guidelines.	Lab
1.3.9	Skill in measuring skinfold sites, skeletal diameters, and girth measurements used for estimating body composition.	Lab
1.3.11	Ability to locate the brachial artery and correctly place the cuff and stethoscope in position for blood pressure measurement.	Lecture/Lab
1.3.12	Ability to locate common sites for measurement of skinfold thicknesses and circumferences (for determination of body composition and waist-hip ratio).	Lecture/Lab
1.3.13	Ability to obtain a health history and risk appraisal that includes past and current medical history, family history of cardiac disease, orthopedic limitations, prescribed medications, activity patterns, nutritional habits, stress and anxiety levels, and smoking and alcohol use.	Lecture
1.3.14	Ability to obtain informed consent.	Lecture
1.3.15	Ability to explain the purpose and procedures and perform the monitoring (HR, RPE and BP) of clients prior to, during, and after cardiorespiratory fitness testing.	Lecture
1.3.16	Ability to instruct participants in the use of equipment and test procedures.	Lecture/Lab
1.3.17	Ability to explain purpose of testing, determine an appropriate submaximal or maximal protocol, and perform an assessment of cardiovascular fitness on the treadmill or the cycle ergometer.	Lecture
1.3.18	Ability to describe the purpose of testing, determine appropriate protocols, and perform assessments of muscular strength, muscular endurance, and flexibility.	Lecture
1.3.19	Ability to perform various techniques of assessing body composition.	Lecture/Lab
1.3.21	Ability to identify appropriate criteria for terminating a fitness evaluation and demonstrate proper procedures to be followed after discontinuing such a test.	Lecture
1.3.23	Ability to identify individuals for whom physician supervision is recommended during maximal and submaximal exercise testing.	Lecture/Lab
	<b>GENERAL POPULATION/CORE: PROGRAM ADMINISTRATION, QUALITY ASSURANCE, AND OUTCOME ASSESSMENT</b>	
1.11.13	Knowledge of the importance of tracking and evaluating health promotion program results.	Lecture
	<b>CARDIOVASCULAR: PATHOPHYSIOLOGY AND RISK FACTORS</b>	
2.2.1	Knowledge of cardiovascular risk factors or conditions that may require consultation with medical personnel before testing or training, including inappropriate changes of resting or exercise heart rate and blood pressure, new onset discomfort in chest, neck, shoulder, or arm, changes in the pattern of discomfort during rest or exercise, fainting or dizzy spells, and claudication.	Lecture
	<b>PULMONARY: PATHOPHYSIOLOGY AND RISK FACTORS</b>	
3.2.1	Knowledge of pulmonary risk factors or conditions that may require consultation	

	with medical personnel before testing or training, including asthma, exercise-induced asthma/bronchospasm, extreme breathlessness at rest or during exercise, bronchitis, and emphysema.	Lecture
	<b>METABOLIC: PATHOPHYSIOLOGY AND RISK FACTORS</b>	
4.2.1	Knowledge of metabolic risk factors or conditions that may require consultation with medical personnel before testing or training, including obesity, metabolic syndrome, thyroid disease, kidney disease, diabetes or glucose intolerance, and hypoglycemia.	Lecture

## REQUIRED READING

- Bever, David L.; (2014) *LawFit: Fitness Leadership Program*, National Center for Public Safety Fitness, George Mason University, 156 pages.
- American College of Sports Medicine (ACSM), *ACSM's Guidelines for Exercise Testing and Prescription*, 9<sup>th</sup> Ed., Lippincott Williams & Wilkins, 2013.  
ISBN-13: 978-1609139551

## EVALUATION

This course will be graded on a point system, with a total of 400 possible points.

	<u>Points</u>
4 Exams	240
7 Biweekly Quizzes	70
2 Physical Fitness Tests	40
2 Data Collection Assignments	20
2 Work Performance Tests	20
1 Occupational Injury Review	10
<b>Total</b>	<b>400</b>

### **Grading Scale % of Total Points (400)**

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	

\*\*\*Cell phones, laptop computers, and I-pads must be turned off and stored prior to all classes. For exams requiring math computations, cell phones may not be used; students must bring approved calculators.

\*\*\*All students must bring notebooks and pens or pencils to every lecture and lab session.

\*\*\*Students are required to wear appropriate fitness gear and shoes for every class session.

\*\*\* **Hard Copy** of all assignments must be turned in at the beginning of class on the specified date due or **no credit will be given.**

# TENTATIVE COURSE SCHEDULE

Week #1 (1/21-1/23)	Introduction to Physical Fitness and Work Performance Testing	Chapter 1
Week #2 (1/26-1/28)	Health & Fitness Assessment A. Health History B. Informed Consent C. Fitness Batteries	Chapter 2 (pp. 145-152)
Week #3 (2/2-2/4) <b>Exam #1</b>	Fitness vs. Work Performance	Chapter 2
Week #4 (2/9-2/11)	Fitness Assessment Tools and Scoring Protocols A. Normative Data B. Criterion Referenced Data	(pp. 120-153)
Week #5 (2/16-2/18)	Data Collection: Measures of Central Tendency	Assigned Readings
Week #6 (2/23-2/25) <b>Exam #2</b>	Measures of Variability & Statistical Analysis	Assigned Readings
Week #7 (3/2-3/4)	Fitness and Its Relationship to Injury Reduction (Occupational Injury Review)	Assigned Readings
<b>SPRING BREAK: 3/9 – 3/15</b>		
Weeks #8 & 9 (3/16-3/25)	Cardiorespiratory Fitness A. Blood Pressure B. RPE, Target Heart Rate C. Submaximal vs. Maximal Testing	Chapter 3 Assigned Readings “ “
<b>Exam #3</b>		
Weeks #10 & 11 (3/30-4/8)	Body Composition A. Body Mass Index B. Bioelectrical Impedance C. Skinfold Testing D. Bod Pod E. Body Weight Calculations	Chapter 6 Chapter 8
Weeks #12 & 13 (4/13-4/22)	Sport Skill Testing Protocols	Assigned Readings
Week #14 (4/27-5/4)	Fitness Post Testing	

## Final Exam: Wednesday 6 May 2015, 10:30 am – 1:15 pm

### *Student Expectations*

- Students must adhere to the guidelines of the George Mason University Honor Code [See <http://oai.gmu.edu/the-mason-honor-code-2>]
- 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.
- Students are expected to exhibit professional behaviors and dispositions at all times.
- ***Don't Cheat The Dr.***

### *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. [See <http://cehd.gmu.edu/values/>].