

George Mason University
College of Education and Human Development
Kinesiology

KINE 370.C02 — Measurement and Evaluation of Physical Fitness
3 Credits, Summer 2018
M-R 10:30AM – 12:35PM, AFC 112

FACULTY

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PREREQUISITES/COREQUISITES

BIOL 124 and 125, ATEP 300, KINE 310

UNIVERSITY CATALOG COURSE DESCRIPTION

This course provides students with an opportunity to develop understanding of the assessment and evaluation process used in exercise science. This is a designated writing intensive course.

COURSE OVERVIEW

Lecture focus will include understanding, practicing and applying information related to exercise testing in healthy populations. Topics covered will include benefits of exercise, risk stratification, exercise responses, metabolic calculations, data collection and analysis, and performing screenings, assessments and measurements related to exercise testing (flexibility, body composition, cardiovascular, etc.).

COURSE DELIVERY METHOD

This course will be delivered using a lecture and lab format. However, other approaches may be used to facilitate learning. These include: videos, demonstrations and in-class activities. Overall this will be a highly interactive class and students will be encouraged to participate.

LEARNING OUTCOMES OR OBJECTIVES

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

1. Apply basic statistical analysis of data collected in the assessment process.
2. Interpret and apply assessment results and understand the application of formative and summative evaluative techniques in relation to fitness, skill, and performance measurement.
3. Administer health-related assessments of body composition, cardiorespiratory fitness, strength, endurance and flexibility.
4. Demonstrate adequate skill in and knowledge of risk factor and health status identification and fitness appraisal
5. Perform laboratory and field tests that assess functional capacity
6. Educate and/or counsel individuals regarding assessment results
7. Organize and administer health and fitness assessments for individuals with no known disease or with controlled disease

PROFESSIONAL STANDARDS

This course meets the Commission on Accreditation of Allied Health Education Programs (CAAHEP) requirements and upon completion of this course, students will have met the following American College of Sports Medicine's Knowledge-Skills-Abilities (KSA's):

KSA	Description	Lecture, Lab, or both
	GENERAL POPULATION/CORE: PATHOPHYSIOLOGY AND RISK FACTORS	
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
	GENERAL POPULATION/CORE: HEALTH APPRAISAL, FITNESS AND CLINICAL EXERCISE TESTING	
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 towards medical clearance prior to administration of an exercise test or participation in an exercise program.	Lecture
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 [®]), 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
	GENERAL POPULATION/CORE: PROGRAM ADMINISTRATION, QUALITY ASSURANCE, AND OUTCOME ASSESSMENT	
1.11.13	Knowledge of the importance of tracking and evaluating health promotion program results.	Lecture
	CARDIOVASCULAR: PATHOPHYSIOLOGY AND RISK FACTORS	
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
	PULMONARY: PATHOPHYSIOLOGY AND RISK FACTORS	
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
	METABOLIC: PATHOPHYSIOLOGY AND RISK FACTORS	
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 TEXTS

American College of Sports Medicine (ACSM), *ACSM's Guidelines for Exercise Testing and Prescription*, 9th Ed., Lippincott Williams & Wilkins, 2013.
ISBN-13: 978-1609139551

Recommended Readings

American College of Sports Medicine (ACSM), *ACSM's Resource Manual for Guidelines for Exercise Testing and Prescription*, 7th Ed., Lippincott Williams & Wilkins, 2013.
ISBN-13: 978-1609139568

Additional readings/articles may be assigned. These will be posted on Blackboard.

COURSE PERFORMANCE EVALUATION

Midterm Examination – 20%

Final Examination (includes practical component) – 25%

Quizzes (unannounced, usually weekly) – 10%

Assignments and Labs – 45%

GRADING

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		

PROFESSIONAL DISPOSITIONS

Students are expected to exhibit professional behaviors and dispositions at all times. Students are held to the standards of the George Mason University Honor Code. You are expected to attend all class sections, actively participate in class discussions, complete in-class exercises and fulfill all assignments. 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. Assignments must be turned in at the beginning of class on the specified date due or **no credit will be given**.

CLASS SCHEDULE

WEEK OF		TOPIC	READINGS/ASSIGNMENT DUE
	June 25	Review syllabus, Benefits and Risks of Exercise and Physical Activity	Chapter 1 ACSM
		Pre-participation Health Screening and Risk Stratification	Chapter 2 ACSM/ 5&6 RM
		Risk Stratification	
	July 2	Informed Consent and Pre-exercise Evaluation	Medical History/Chapter 3 ACSM
		Data Collection/ Measures of Central Tendency/Variability/Validity Test	
		Data Collection/ Measures of Central Tendency/Variability/Validity Test	Test Review
	July 9	Midterm Exam /Physical Fitness Testing (Flexibility)Physical Fitness Testing (Body Comp)	Flexibility Lab & Body Comp Lab/Chapter 4 ACSM
		Weight Management	Blood Pressure Practice
		Cardiovascular Response to Exercise and Fitness Assessment	CRF Lab/Chapter 4 ACSM

WEEK OF		TOPIC	READINGS/ASSIGNMENT DUE
	July 16	Testing Aerobic Capacity Submaximal/Maximal	Metabolic Calculations/ Chapter 4 ACSM/12 RM
		Blood Pressure	Chapter 4 ACSM/12&22 RM
		Muscular Fitness	Muscle Fitness Lab/Chapter 4 ACSM
	July 23	Review/Practical Practice	
		Practical Exams	
		Practical Exams	
	July 27	Final Exam	

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 <http://oai.gmu.edu/the-mason-honor-code/>).
- 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 <http://ods.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 or <https://cehd.gmu.edu/aero/tk20>. Questions or concerns regarding use of Blackboard should be directed to <http://coursesupport.gmu.edu/>.
- The Writing Center 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/>).
- The 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 Student Support & Advocacy Center staff helps students develop and maintain healthy lifestyles through confidential one-on-one support as well as through interactive programs and resources. Some of the topics they address are healthy relationships, stress management, nutrition, sexual assault, drug and alcohol use, and sexual health (see <http://ssac.gmu.edu/>). Students in need of these services may contact the office by phone at 703-993-3686. Concerned students, faculty and staff may also make a referral to express concern for the safety or well-being of a Mason student or the community by going to <http://ssac.gmu.edu/make-a-referral/>.

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

Academic Integrity

GMU is an Honor Code University; please see the University Catalog for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? First, it means that when you are responsible for a task, you will be the one to perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives and traditions. When in doubt, please ask for guidance and clarification.



**School of Recreation,
Health, and Tourism**