

George Mason University

College of Education and Human Development

Kinesiology

KINE 370.001 Exercise Testing and Evaluation

3 Credits, Fall 2019

Tuesday/7:20pm-10:00pm Recreation/Athletic Complex 2203 FFX

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 an understanding of the assessment and evaluation process in the determination of physical fitness.

Course Overview

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.

Course Delivery Method

This course will be delivered using a Lecture and Lab format.

Learner Outcomes or Objectives

This course is designed to enable students to do the following:

1. Apply basic statistical analysis of data collected in the assessment process.
2. Develop health-related fitness assessment plans for clients in recreational and rehabilitation settings.
3. Develop sport/motor fitness assessments for work performance programs or clinical setting.
4. Identify fitness- related psychological testing protocols.
5. Interpret and apply assessment information by identifying formative and summative fitness, skill, cognitive, and affective measurement and evaluative techniques

Professional 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:

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*, 10th Ed., Lippincott Williams & Wilkins, 2018.

ISBN-13: 978-1609139551

Course Performance Evaluation

Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard, Tk20, hard copy).

- **Assignments and/or Examinations**
- Tests (Mid-terms & Final exam) and Written Assignments

- Health-related motor fitness protocol, demonstrations/participation & written assignments pertaining to fitness and motor testing

EXAMS:

- Exam #1 Material from weeks 1-4
- Exam #2 Material from week
- Exam # 3 Material from weeks 9-13
- Final Exam # 4 is cumulative

Exam 1

86 points

Exam 2

84 points

Blood pressure

20 points

Bod Pod

20 points

Exam 3

84 points

Fitness testing

25 points

skin calipers

20 points

Goniometers/

Anthropometry measurements

20 points

Final Exam

80 points

Total

439 points

- **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-

Professional Dispositions

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 professionalism generally comprises the following components:

Attendance – Show up on time to class and pay attention. If you cannot attend a class for a legitimate reason please notify the instructor ahead of time. If you have to unexpectedly miss a class due to something out of your control, contact the instructor within 24 hours to notify them what happened and to see if there is anything you need to do to make up your absence.

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

Participation – Participate in class discussions and activities. Demonstrate that you have an interest in the subject matter.

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.

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.

Class Schedule

Date
Topic

Readings/Assignment

T

August

27

Review syllabi and health risk pre-assessment RHR, Body Fat BIA,

Read Chapter 1 ACSM

T

September

3

Fitness assessment (Health related fitness components)

Muscular strength, Flexibility, Muscular Endurance assessments

Read Chapter 2 ACSM

T

September

10

Data Collection/ Measures of Central Tendency/Variability//Lawfit Scoring

Read Chapter 3 ACSM

T

September

17

Exam 1 (Statistics/health risks/health related components)

Study review for Exam 1

T

September

24

Body composition-Lecture

Goniometers/anthropometric measurements

Read Chapter 4

T

October

1

Body composition-Lecture/**Skin Caliper Lab**

T

October

8

Exercise Prescription Lab BOD POD Assessment (Location TBA)

Read Chapter 5 ACSM

T

October

15

Spring Break No Class

T

October

22

TBA/Wellness Fair off site at Cub Run ES (5301 Sully Station Dr. Centreville VA 20120)

Study for Exam

T

October

29

Skin caliper assessment/anthropometry assessments waist to hip ratio

Read Chapter 6

T

November

5

Exam 2 (Body comp/exercise prescription test)

T

November

12

Mile Run 1.5/Intensity HR check (Field house) Stress test in Smart Lab Field house (Vo2max assessment)

*Need 1 student volunteer

T

November

19

Cardiovascular Fitness / V02 Max Blood Pressure Measurement Lab/WP

Read Chapter 7

T

November

26

Cardiovascular Fitness / V02 Max Blood Pressure Measurement Lab/WP

BP practice

T

December

3

Exam 3 (cardiovascular fitness/Blood Pressure)

T

December

10

Reading Day No Class

T

December

17

Final Exam (7:30pm-10:15pm)

Celebrate!

Have a great summer!

Note: Faculty reserves the right to alter the schedule/syllabus 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/>.

