TEXAS A & M UNIVERSITY - COMMERCE
DEPARTMENT OF HEALTH & HUMAN PERFORMANCE
COURSE SYLLABUS
College of Education

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Course Title: Measurement and Evaluation
Course Number: HHPK 417

Catalog Course Description: Included in this course will be a brief history and the present status of tests and measurements in physical education, and statistical procedures necessary to a testing program. Tests of physical fitness, social efficiency, and physical education skills, and appreciations will be studied. Criteria for selection, evaluation, and the administration of tests will also be included in the course content as well as statistical procedures necessary for a testing program. (3 credit hours)

Course Objectives: This purpose of this course is to expand upon the students' knowledge in evaluation and measurement of both teachers and students. Approximately one-third of the course is devoted to teacher evaluation, one-third to evaluation of students in the areas of physical fitness, motor development, and motor skill acquisition, and one-third devoted to tools and techniques useful in cognitive and performance evaluation of students and teachers. In order to promote reflective thinking in the classroom, every effort is made to continuously employ the following techniques:

Students are compelled to critique their own and other's work to develop evaluative and communication skills and encourage a constant attitude of assessment and revision. This is done by requiring you to critique measurement tools and by in-class examples and practice.

Knowledge Base

The knowledge base for this course is drawn from research involved with writing a text on the topic of Measurement and Evaluation in Physical Education. This course introduces basic concepts and applications in evaluation and measurement. Methods and considerations in evaluating and measuring in three general areas will be covered:

1. Cognitive
2. Psychomotor
3. Fitness

You bring a wealth of information and experience to class. It would be a disservice to all of us for you to keep it to yourself. I expect to learn from you as well as teach you.

Knowledge of the role that mathematics plays in everyday life. Since not all students will be professional teachers; one of the applications of the course is the role of numbers in consumerism. Students will be able to demonstrate basic mathematical applications in calculating basic probabilities, relative costs and other basic consumer-oriented quantitative concepts. Knowledge of measurement-related issues such as validity, reliability, norms, bias, scoring concerns, and ethical uses of tests and test results. Students will learn both the concepts and application of fundamental

measurement characteristics which as validity, objectivity, and reliability. They will be able to discuss measurement in terms of true score and error score and how error relates to the qualities of a test item. They will also understand the interaction of validity, reliability and objectivity, and the interactions of difficulty and discrimination. With regard to validity, students will learn the criticality of valid application and fair and unfair, ethical and unethical, applications of measurements and results. Fundamental to evaluating validity, reliability and objectivity is a knowledge of basic descriptive and inferential statistics

Throughout the class, concepts will be emphasized rather than mechanics. Statistics are not treated as a separate section, but rather statistics are introduced in context showing how to use these tools in evaluating the quality of measurements.

Through the mechanisms of debate and questioning, the student will be challenged to reexamine their current practices and beliefs regarding the evaluation process. You will be addressing questions such as:

"What tests and measurements would you make if no letter grades were given in your school?" "Since physical fitness is a transient characteristic, why should we teach it and measure it?" "Since I have just demonstrated that Fitness tests are generally very poor, why use them at all?"

Students will turn in homework assignments requiring them to construct knowledge questions of all types (multiple choice, matching etc.), and also required to construct, adapt and administer appropriate skill and fitness tests.

<u>Knowledge of the purposes, strengths, and limitations of formative and summative assessment and of formal and informal assessment strategies</u>. Students will learn characteristics, uses, advantages, and limitations of different types of assessments. How to select, construct, and use a variety of appropriate assessment strategies. Students will be able to demonstrate appropriate selection and use of cognitive test items. Final examination, and in-class student demonstrations of developing, organizing and administering tests of skill and fitness. Students will develop the ability to create and use effective rubrics, and describe when they are best employed. Students will become experienced and knowledgeable about utilization of microcomputer applications and will demonstrate the ability to do simple word processing, spreadsheet applications and use EXCEL as a grade management program. Students will be able to discuss advantages and disadvantages of microcomputer use.

In consideration of the visual nature of todays'students, students will be required to demonstrate the ability to read, interpret and evaluate figures and tables. For example, students will be required to identify and explain why a relationship between two variables is strongest when the data demonstrate a straight line with a slope of 45 degrees. Students will be required to explain what various curve shapes signify in terms of the relationship between variables. Students will be familiarized with computer support through optical scanning grading, and item analysis. Students will gain experience in plotting and visualizing data. Students will be able to use appropriate measurement terminology and give practical examples of its use. Students will be able to explain and give examples of the advantages of good measurement and evaluation programs.

Students will demonstrate an integrated knowledge of appropriate methods for measuring, analyzing, and interpreting motor skills and cognitive mastery of physical education.

12) Students will gain some appreciation of quantitative and qualitative research. Accurate reasoning is essential in interpreting and validly applying research. Students will demonstrate knowledge of the appropriate use of various types of reasoning, including inductive, deductive, spatial and proportional, and understanding of valid and invalid forms of reasoning.

REQUIRED TEXTS:
Bishop, P. Measurement and Evaluation in Physical Activity Applications: Physical Education, Coaching, Athletic Training, and Allied Health. Textbook, Holcomb Hathaway Publishers 2008.

Read the assignments before class. You should be prepared to answer all questions and work the Practical exercises.

Class Administration

Late work- ALL work must be turned in. Late work drops 5 pts. per school day. Since you have to do the same amount of work for less pay when you are late- turn things in on time! Make up- Exams must be made up before the scheduled test date.
Quizzes do not have to be made up.

LOCATION:
Some Labs will be conducted in announced locations.

Student Conduct:
This course will cover exercise physiology. Students should feel comfortable discussing their individual views and experiences concerning each subject. Students should also respect each others' differences and respect each other as each issue is discussed. **If the instructor deems that individual students are not being respectful toward each other or the instructor, then these students will be asked to leave (and eventually drop the course if the negative conduct continues).** Please refer to pages 42 – 45 of the TAMU-C Student Guidebook's Codes of Conduct for details.

Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library, Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu

Plagiarism/academic dishonesty---Plagiarism is copying another's work as your own without proper acknowledgment. Be aware that the intent to deceive the reader does not have to be present for plagiarism to occur. Also ignorance of the definition of plagiarism is also not an excuse and will result in the same consequences as for someone who has knowledge of it. Plagiarism is also not restricted to copying the writings of others, nor to stealing from established authors; it includes the ideas of your fellow students. If you plagiarize in this class (including cheating on tests) you will receive an automatic "F". If you are in any doubt as to whether your work constitutes plagiarism or academic dishonesty, please discuss this with me confidentially.

Attendance

Attendance is required. The class meets 30 times for 75 min each.
Attendance will be taken daily. Students are expected to be in class, seated, on time. Each unexcused absence will result in a 5 points deduction off of your **final average** and tardies will result in a 2 point deduction.

2. An "excused absence is defined as a documented university approved activity. The instructor reserves the right to change the content or format of all make-up work. The student is responsible for making up missed work. If the absence is for one of the reasons listed below, you will be able to make up the work missed within two business days. To reserve the right to make up work, you MUST provide written documentation on the day you return to class (a copy that I may keep). Please notify me ahead of time via email if you know you will be absent.

- Participation in an activity appearing on the University's authorized activity list.
- Death or major illness in a student's immediate family.
- Illness of a dependent family member.
- Participation in legal proceeding or administrative procedures that require a student's presence.
- Religious or Holy Day.
- Illness that is too severe or contagious for the student to attend class (to be determined by Health Center or other doctor).
- Required participation in military duty

An "A" or "B" average and perfect attendance enables the student to waive the final exam if desired. If you must miss class, see me in advance. If you must miss a scheduled examination, please contact me in advance. . Missed exams must be made up within the first two class periods after returning to campus.

Evaluation Information

Final	35%
Exam I	20%
Exam II	30
Homework/Lab reports	10%
Discussion	5%

Each person must turn in his/her own homework/lab report which represents original and independent thinking (**i.e., collaboration is unacceptable**). Late homework/labs are penalized at the rate of 5 pts. (out of 100) each day.

"A Grade is:

> **An inadequate report of an inaccurate judgment by a biased and variable judge of the extent to which a student has attained an undefined level of mastery of an unknown proportion of an indefinite material".**
>
> **Paul Dressel, 1957**

HHPK 417

Course Outline

(Tentative, subject to change)

Before the first class read Chapters 1 and 2.

Week 1 Intro---philosophy--problems--evaluation vs. measurement. Part I Understanding the Measurement process. Exercise: The F test**,** Exercise: Weigh yourself on different scales and record results. Exercise: Find a news article dealing with measurement, Measurement and Errors. Do PE 1.5 and 2.1 before class.

Week 2 The keys to good measurement
Chaps. 3 & 4 Validity: Validity--objectivity—reliability. The difficulties of good measurement, Types of validity, Statistical aspect of verifying validity. Validity of application. Knowledge of measurement-related issues such as validity, reliability, norms, bias, scoring concerns, and ethical uses of tests and test results. PE 3.6, 3.7, 3.9, 3.11, 3.12

Week 3 Evaluating Validity
Laboratory: Microcomputers in M & E (meet in designated computer lab, if applicable) Introduction to Excel. How do we evaluate the validity of measurement instruments? What steps?, Populations and samples, T-tests of means. P.E. 4,1, 4.2, 4.5, 4.7

Week 4 Evaluating Validity continued
Understanding figures, Correlations, Bland-Altman

Week 5 Evaluating Validity continued; Correlations for ordinal data, Validity in Criterion-referenced tests, Threats to validity. Chap. 5 Reliability and objectivity, PE 5.2, 3.4, 5.5, 5.7

Week 6 Reliability and Objectivity
Types of reliability; Evaluating reliability/intraclass Reliability, Evaluating objectivity. Chap. 6 Devising tests; In class exercises: handgrip and two-point touch, In Class PE 6.2, 6.3. Understanding measurement – formative and summative evaluations and their applications.

Week 7 Part II. Understanding Numbers and statistics in Measurement
Chap. 7 Understanding numbers, descriptive--inferential PE 7.1, 7.2, 7.3, 7.4. **Exam I!!!!!!!!!!**

Week 8
Chap. 8 Statistics; Practical aspects of Statistics--ANOVA-- Interpreting the numbers. PE 8.2, 8.3,

Week 9
Chap. 9 Technology in Measurement Part III. Measuring in fitness and sport. Homework: Find a fitness test with norms that you can give give (i.e. that you have equipment and room to give) that is NOT in the textbook. PE 9.1, 9.2, 9.4. 9.7, 9.10, 9.11, 9.12, Be prepared to give in class PE 9.5, 9.6
Week 10
Chap. 9 &10 Fitness Evaluating Fitness--Construction—administration Exam II, PE 10.1, 10.4

Week 11
Chap. 11 Motor perform, **Harrow's Taxonomy of the Psychomotor Domain,** Be prepared to do PE 11.1 and 11.2 in class! PE 11.3, 11.5, 11.7. Chap. 13 Alt Measure. **Exam II- Comprehensive!!!! You are responsible for all information to date.** PE 13.1, 13.2, 13.5

Week 12
Chap. 14 Cognitive and grades; **Bloom's taxonomy**. **Do Exercise writing questions**
Cognitive measurement – how do we measure knowledge and what's wrong with our technique.
Grading
An M& E philosophy: Knowledge of the relationship between assessment and learning and of how to integrate appropriate assessments into all stages of the learning process. PE 14.1, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8

Week 13
Chap. 12 Coaching and sports. PE 12.2, 12.3, 12.5, 12.11, 12.12

Week 14
Part IV. Other Measurement applications; Chap. 15 Employees, PE 15.2, 15.3, 15.4

Week 15
Chap. 16 Measurement in Research, PE 16.3, **Final Exam – The final exam is comprehensive over all aspects of measurement and evaluations including:**