Statistics and Evaluation - KINE 394
Fall 2022/MWF 1:00-1:50; ISC 1280

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Course Description
This course is designed to familiarize the student with the techniques of measurement, evaluation and statistics in the related fields of Health Sciences, and Exercise Science. In addition, the student will gain an understanding of the design, analysis, and reporting of research.

Objectives
    The successful completion of this course will enable the student to:
    1. understand the role of evaluation in teaching, allied health, or the research process.
    2. demonstrate an understanding of fundamental statistical procedures: central tendency, variability, correlation, t-tests, analysis of variance, and regression.
    3. demonstrate an appreciation of the proper use and role of statistics in the analysis and evaluation of information.
    4. use calculators and personal computers for data analysis and scoring assessments.

Course Evaluation
The student's final grade will be based as follows:
                Exam #1 = 25%
                Exam #2 = 25%
                Final Exam (comprehensive) = 40%
                Homework = 10%

Required Textbook
Statistics in Kinesiology, 4th edition, Vincent, W.J. and Weir, J.P., Human Kinetics (2012).

Schedule of Lecture Topics

    1. Introduction, Measurement and Evaluation in Exercise Science and Allied Health
    2. Statistical Approach to Measurement, Evaluation, and Research
            a. measurement, statistics, and research (ch 1, delete "validity" pp.10-12)
            b. organizing and displaying scores (ch. 2)
            c. measures of central tendency (ch. 4)

d. measures of variability (ch. 5)
e. percentile scores and other standard scores (ch 3)
f. normal curve and sampling error (ch. 6)

Exam #1

g. t-Test (ch. 10)
h. Effect Size
i. analysis of variance - ANOVA (ch. 11, 12)
j. correlation and regression (ch. 8)
k. non-parametric analyses (ch. 16)

Exam #2

3.   Reliability and Objectivity (ch. 13)
4.   Validity
5.   Evaluating Achievement
6.   Evaluating Knowledge
7.   Introduction to research (why and how)
8.   Types of research

Final Exam (comprehensive): December 13, 2021 from 2:00 – 5:00 pm

USE FORMULAS PROVIDED IN CLASS, NOT THOSE FOUND IN TEXTBOOK!!!!!!

Diversity Vision Statement: The Department of Kinesiology & Health Sciences places a high value on inclusiveness in order to create an optimal environment in which our students learn, and our faculty and staff carry out their professional responsibilities. We aim to faithfully support, and be fully consistent with the objectives and aims of the Diversity Plan of Arts & Sciences. Our definition and view of diversity is wholly compliant with that of Arts & Sciences. That is, we see diversity as encompassing variability in age, cultural identity, ethnicity, gender, faith, neurological characteristics, geographic background, political and ideological perspectives, race, sexual orientation, social and economic status, as well as military status.