HPER 692: Analytical Techniques in HPER

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Prerequisite:

PEGR 690  Research Procedures in PEPR

Course Description:

PEGR 692 is designed for an introduction to analytical methods of handling data in the fields of health, physical education, and recreation.

Teaching Materials:


Course Objectives Addressed in Course:

This course is an introduction to analytical methods of handling data in PEPR. The goal is to develop the following skills for the practitioners in the fields of PEPR:
1. understanding the uses and limitations of selected designs;
2. correctly use of the selected analytical procedures;
3. familiar with the statistical software to do data analysis;
4. appropriately interpreting the results of completed research.
Tentative Course Outline:

I. Research Measurement and Statistics
   A. Overview of the research process
   B. Overview of measurement issues in research
   C. Overview of statistics

II. Basic Descriptive Statistics
   A. Measurement scales and descriptive statistics
   B. Normal curves and standard scores

III. Introduction to Statistical Inference
   A. Probability, samples and populations, statistics and parameters
   B. Estimation, sampling error
   C. Sampling distribution of the mean

IV. Hypothesis Testing – Means
   A. Hypothesis testing: an overview
   B. The t-test for independent means – an example
   C. The t distribution
   D. Formal steps in conducting a t-test
   E. Type I and type II errors, statistical power
   F. Assumptions of the t-test
   G. The t-test for correlated means

V. Analysis of Variance
   A. Introduction to the ANOVA model
   B. Randomized groups design, single factor
      1. analysis and interpretation
      2. comparisons among means
   C. Randomized groups design, multiple factor
      1. analysis and interpretation
      2. comparisons among means
   D. Repeated measures design (a overview)

VI. Overview of Correlation and Regression
   A. Linear correlation (PPMC) and regression
   B. Multiple linear regression (overview)
Course Structure:

PEGRE 692 is a lecture plus lab course, with numerous nonscheduled lab assignments. Mini-exams are held every three weeks to monitor students’ progress and assist students in keeping up with course materials.

The assignments are meant to be learning experiences, and collaborative work is encouraged. All course requirements must be deemed complete before credit will be granted for the course.

Evaluation Components:

1. Problems, assignments (2-4)……………………………….….45%
2. Quizzes………………………………………………………...25%
3. Final exam……………………………………………………..25%**
4. Attendance……………………………………………………..5%

** A passing grade (60%) must be obtained on the final exam in order to pass the course.

Evaluation Scale:

A: 88%,  BA: 82%,  B: 76%,  CB: 69%,  C: 62%,  DC: 56%,  D: 50%

Getting Help

I can be contacted through e-mail at any time, or via phone.