Statistics and Experimental Designs

Summer, 2013

Instructor: **Brian Lin (yowyulin@ntu.edu.tw)**
Time: 1:30-4:30 PM, Tuesday & Thursday
  (Note: No class on 07/09 & 07/11)
Classroom: 商學院的電腦教室 260509
Office Hour: By appointment

Course Description & Objectives

This course will strive to provide TESOL and linguistics students with a conceptual understanding of statistical procedures needed (1) to do TESOL/linguistic quantitative research, (2) to analyze the data and (3) to read and understand TESOL/linguistics articles. The materials covered in this course will try to span most of TESOL/linguistics research so that students can make a connection between statistics and their interests of study. Students are not expected to have previous background in statistics or SPSS. A gentle introduction to SPSS will be given at the beginning of the class and along the semester, students are expected to master using SPSS with different topics. If time permits, the instructor will demonstrate how to use SAS or R to run statistics.

Textbook

Required

Hinkle, D., Wiersma, W., & Jurs, S. (2003). Applied Statistics for the Behavioral Sciences. Wadsworth.

Recommended

Field, A. (2009). Discovering statistics using SPSS. SAGE Publications Ltd.

Grading

Midterm & Final Exam

In-class midterm and final exam will be given on 11/02 and 01/11 respectively and each will take up thirty percent of the final grade. During the exam, students will be allowed to bring cheat sheets (2 pages) and a calculator but not textbooks.

Tentative Schedules

Date	Course Content
07/02	1. Introduction
	2. Organizing and Graphing Data.
07/04	3. Describing Distributions: Individual Scores, Central
	Tendency, and Variation.
	4. The Normal Distribution.
	5. Correlation: A Measure of Relationship.
07/09	No class
07/11	No class
07/16	6. Linear Regression: Prediction.
	7. Sampling, Probability, and Sampling Distributions.
07/18	8. Hypothesis Testing: One-Sample Case for the Mean.
	9. Estimation: One-Sample Case for the Mean..
07/23	10. Hypothesis Testing: One-Sample Case for Other Statistics
	11. Hypothesis Testing: Two-Sample Case for the Mean.
07/25	12. Hypothesis Testing: Two-Sample Case for Other Statistics.
	13. Determining Power and Sample Size.
07/30	***Midterm***
08/01	14. Hypothesis Testing, K-Sample Case: Analysis of Variance,
	One-Way Classification.
	15. Multiple-Comparison Procedures.
08/06	16. Analysis of Variance, Two-Way Classification.
08/08	Factorial ANOVA (Cont.)
08/13	17. Linear Regression: Estimation and Hypothesis Testing.
	18. Multiple Linear Regression
08/15	19. Analysis of Covariance
	20. Mixed Design ANOVA
08/20	21. Chi-Square ($X2$) Tests for Frequencies.
	22. Other Nonparametric Tests
08/22	**Final Exam**