

Counseling Psychology and Special Education 651  
Statistics I  
Fall, 2014  
Section 1, W 1:00-4:00, 112 SWKT

Instructor:

Lane Fischer, Ph.D.; [lane\\_fischer@byu.edu](mailto:lane_fischer@byu.edu); 422-8293, 340 MCKB

Objective/Purpose:

This course will emphasize conceptual understanding and practical application of statistics. Focusing more on concepts than computation will allow us to cover more ground with more practice of each concept. By integrating the course with training in SPSS, students will be prepared to select and execute appropriate analytical strategies in their applied research and practice.

- All students will demonstrate fluency in SPSS commands and functions.
- All students will demonstrate fluency in interpreting SPSS output files.
- All students will demonstrate fluency in selecting the appropriate statistical analysis based on the research questions and the nature of the data.

Pedagogical Approach

A: Cooperative Learning: You will be placed in pods and complete all work together. This mimics how real research is conducted, deepens understanding of the advanced students, and reduces fear.

B: Competency Based: We will do it until we get it right.

C: Blended/Flipped: We have created software and training modules to orient you to content outside of class. In-class time will primarily focus on practice, coaching, diagnostic instruction and fun.

D: Decision Based Learning: The software and overall process of the course is based on a series of decisions that lead from an initial research question to the appropriate statistical procedure which, given the nature of the question and the nature of the data, will allow you to answer the research question.

Required Text:

All students:

Cronk, B.C., (2010). How to Use SPSS Statistics, 7th Edition, Pyrczak Publishing, Glendale.  
ISBN 1-884585-99-X

Recommended Texts:

Mertler, C.A. & Vannatta, R.A., (2005). Advanced and Multivariate Statistical Methods, 3<sup>rd</sup> Edition, Pyrczak Publishing, Glendale. (Dovetails with Cronk very nicely.)  
ISBN 1-884585-59-0

Bruning, J.L. & Kintz, B.L., (1997). Computational Handbook of Statistics, 4<sup>th</sup> Edition, Addison Wesley Longman, New York. (To approximate what SPSS is doing in the box.) ISBN: 0-673-99085-0

Pryczak, F., (2004). Success at Statistics, 3<sup>rd</sup> Edition, Pryczak Publishing, Glendale. (Breaks stats down into tiny bites with jokes along the way.) ISBN: 1-884585-53-1

Thompson, B. (2006), Foundations of Behavioral Statistics: an Insight-based Approach, Guilford Press. New York. (Excellent conceptually-based text) ISBN-13: 978-1-59385-285-6

Schedule:

<u>Date</u>	<u>Topic</u>	<u>Readings</u>
9/3	Introduction Entering and Modifying Data	Cronk Chapters 1-2
9/10	Descriptive Stats and Graphing	Cronk: Chapters 3-4
9/17	Parametric Inference	Cronk: Chapter 6
9/24	Parametric Inference	
10/1	Parametric Inference	
10/8	Parametric Inference	
10/15	Nonparametrics	Cronk: Chapter 7
10/22	Nonparametrics	
10/29	Midterm Examination	
11/5	Prediction and Association	Cronk: Chapter 5
11/12	Prediction and Association	
11/19	Psychometrics	Cronk: Chapter 8
11/25	NO CLASS	
12/3	Review / Practice Exercises/ Faux Final	
12/10	Begin Final Exam In-Class	
12/19	Final Exam Period 11- 2	

## Grades:

Your grade will be determined by your performance on the in-class exercises, midterm and final examination. I prefer competency-based assessment and you will be expected to re-do any exercises until they are perfect. You will need to print some output files. Please keep an appropriate balance available on your signature cards for that purpose. Because of unfortunate glitches in electronic submission of homework and final exams in past semesters, (resulting in weeping and wailing and gnashing of teeth) all work must be submitted hard copy. Trust me. It's worth the printing costs to save the grief.

The faux final exam will let you practice with the style of questions and competencies required on the final exam. The final exam will allow you to demonstrate your fluency vis-à-vis the objectives of this course.

We are using with a pedagogical technique that I call “pod leaders”. (It is not very revolutionary and is an outgrowth of many cooperative learning strategies [See Johnson & Johnson]). You will each be placed in a pod of 3 students, typically with a more advanced student as the pod leader who will sit in the middle of each pod. You will do each exercise as a pod. You will individually do each exercise on your own computer, but consult with your pod, discuss problems and compare processes and outputs with each other. You will turn in one copy of each exercise with all pod-members' names on the final copy.

As you probably know, transfer of training is enhanced by increasing the number of identical elements between two tasks. “Pod Leaders” should be reasonably isomorphic with how real data analysis is conducted. We sit together with our research team, focus multiple sets of eyes on the data, discuss analytical strategies, run the analyses, examine the output, say “oy vay!” when we notice that we messed up, figure out what went wrong, start over, and celebrate together when the dang thing is finally correct.

Enjoy! This is a fun course!

### **Preventing Sexual Harassment:**

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education. Title IX covers discrimination in programs, admissions, activities, and student-to-student sexual harassment. BYU's policy against sexual harassment extends not only to employees of the university but to students as well. If you encounter unlawful sexual harassment or gender based discrimination, please talk to your professor; contact BYU's Equal Opportunity Manager at 801-422-5895 or email [sue\_demartini@byu.edu]; or contact BYU's Honor Code Office at 801-422-2847. The Honor Code Office is located in 4440 WSC.

### **Students with Disabilities:**

Brigham Young University and I are personally committed to providing a working and learning atmosphere which reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact me at the beginning of the semester, as early as possible, to ensure adequate prevention and intervention efforts to ensure a positive learning experience. You may also contact the University Accessibility Center (UAC; 801-422-2767). They have an Internet site describing their services

and contact information [<https://uac.byu.edu/>]. Reasonable academic accommodations are reviewed for all students who have qualified documented disabilities. Services are coordinated with the student and instructor by the UAC Office. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures. You may contact the Equal Employment Office in the ASB. They can be reached phone at 801-422-6878 or you can visit their offices in the ASB: D-282, D-292, D-240C.