

课程大纲

课程编号 : 02814900 **授课对象** : I-PhD 2012
课程名称 : 统计运算与处理 **英文名称** : Data Computing and Analysis
周学时/总学时 : 3/30 **学 分** : 2
任课教师 : Dr. Li Ma **开课学期** : Fall 2012
先修课程 : Probability, Linear algebra **Time**: Wednesday 13:00-16:00, Sept. 10-Dec. 5
Location: Computer lab (on the 3rd FL) at Guanghai Building

任课教师联系方式 : lima@gsm.pku.edu.cn
6275-3185, Room 353 (Guanghai No. 2 Building)
辅导、答疑时间 : Every Tuesday 13:00 – 15:00, and by appointment
助教 : 张翠莲 , cuicui817@126.com

一、课程概述

This course provides a doctoral-level overview of processing data for research, especially in the field of management. The course will include lectures, exercises, exams, lab-practices, etc. This course is not simply a “statistics” one, but emphasizes the application of statistical techniques in management research. You will learn more detailed nuances of relevant statistical procedures in different courses; this course is designed to give you a good start of making sense of others’ research and of conducting your own research.

In addition, this course is not of a “software” one: although I will use Excel, SPSS, AMOS, HLM, and other software to illustrate how you can “get things done,” the focus will be how to make sense of the statistic outcomes obtained from the software and how to conduct next steps in your research.

二、课程目标

After successfully completion of this course, students shall be able to run fundamental data analyses in research and test hypotheses with analysis results. Students shall be familiar with the whole data processing techniques (including data collection processes), and more detailed, advanced techniques can be learned through later courses or by self-learning activities.

Because this course is intended to help research-oriented students to grasp the essence of research question-data interactions, students are encouraged to explore discipline-related datasets and use methods learned in class to analyze them. You can find many datasets provided by me, in disciplines related to marketing, strategic management, organizational behavior, and human resource management. In addition, you can also find other datasets in conducting your own analyses. One approach is to talk to your mentor (I assume you have one) and analyze some used or unused datasets. Possibly after analyzing the data effectively you may find some interesting results that are publishable.

三、内容提要及学时分配 (subject to change)

Week	Date	Topic	Note
1	09/12	The Logic of Research and Data; Level of measurement; Types of variables	Anderson et al. Ch1
2	09/19	Data Cleaning and Handling; Describing data using graphs and numbers	Anderson et al. Ch2-3
3	09/26	Principal component analysis; EFA and CFA	Lattin et al. Ch4-6
4	10/03	Break: National's Day Holiday	
5	10/10	Correlation; Measurement and scale creation; reliability and validity	Pedhazur & Schmelkin (1991) Ch 4-5
6	10/17	Comparing two groups	Anderson 10.2, 10.3; 12.1, 12.2
7	10/24	Midterm	
8	10/31	Comparing multiple groups: ANOVA and MANOVA	Anderson Ch13 Iversen & Norpoth (1987)
9	11/07	The logic of hypothesis testing (Type I and Type II errors); Multiple regression	Anderson Ch14, 15; Pedhazur & Schmelkin (1991) Ch17, 18
10	11/14	Calculating mediation and moderation	Aiken and West (1991), Ch 2, 3
11	11/21	Reporting analyses results	Bem (2002)
12	11/28	Reading week: No class	
13	12/05	Final exam	

四、教学方式

Lectures will be given in our in-class sessions. Most sessions will include software demonstration to aid your first-hand experiences. We will also have in-class exercises and a few homework assignments. Midterm and final exams are to consolidate your understanding of working with data.

五、教学过程中 IT 工具等技术手段的应用

Presentations may be facilitated with PPT. SPSS and some additional software will be used. The statistical software SPSS will be used for illustration and students shall be familiar in using it (but using any other software is encouraged).

六、教材

[Optional] Anderson, D. R., Sweeney, D. J., & Willams, T. A. 2005. *Statistics for Business and Economics* (9th ed.). Cincinnati, CT: SouthWestern College. Published in China by China Machine Press.

七、参考书目

Sharma, S. (1996). *Applied multivariate techniques*. New York: John Wiley & Sons, Inc.

Lattin, J. M., Carroll, J. D., & Green, P. E. 2003. *Analyzing multivariate data*. Pacific Grove, CA: Brooks/Cole-Thompson Learning. Published in China by China Machine Press.

Shook, C. L., Ketchen, D. J., Jr., Cycyota, C. S., & Crockett, D. 2003. Data analytic trends and training in strategic management. *Strategic Management Journal*, 24(12): 1231-1237.

八、教学辅助材料，如 CD、录影等

Not applicable.

九、课程学习要求及课堂纪律规范

All students are expected to be actively engaged in the learning process.

十、学生成绩评定办法

The grades are composed of four parts as below:

Homework	20%
Midterm	30%
Final exam	50%