COURSE TITLE/SECTION: SOCW 8325 (18672) Applied Multivariate Statistics

TIME: Tuesday 1:00 p.m. – 4:00 p.m., Room: 100K, Social Work Building

FACULTY: Patrick Leung, PhD

OFFICE HOURS: M 12-1 & 4:00-5:00 p.m.

E-mail: pleung@uh.edu Phone: 713-743-8111 FAX: 713-743-8149

I. Course

A. Catalog Description

Prerequisite: SOCW 8324 Bio Statistics and doctoral standing in social work. Emphasizes the use of the Statistics Package for Social Sciences (SPSS) in applied social work research.

B. PURPOSE

The purpose of this course is to prepare students to use SPSS to analyze data in a wide variety of applied research settings. This course will focus on advanced statistical procedures in association with procedures in SPSS. Multiple Regression, Analysis of Variance and Analysis of Covariance will be highlighted in the SPSS Program.

II. Objectives

Upon completion of this course, students will be able to:

1. Demonstrate an understanding of the relationship between research design and the use of SPSS in applied social work research;

2. Demonstrate the use of the Statistical Package for Social Sciences to analyze multivariate statistical data in applied social work research;

3. Demonstrate an understanding of the principles of probability theory in basic multivariate statistical analyses including Multiple Regression, Analysis of Variance, Analysis of Covariance in association with the SPSS Program; and

4. Demonstrate an understanding of the programming and commands in the SPSS Program.
III. Course Content

This course is the second of three required statistics courses in the doctoral curriculum. A topical outline is included with the class schedule and reading assignments in a separate attachment to this syllabus.

IV. Course Structure

The course will be taught using a combination of instructional methods including group and class discussions, lectures, exercises, assigned and recommended readings, and homework assignments. Computer technology for statistical analyses will also be included.

V. Required Texts/Software


SPSS, Inc. (2013). SPSS for windows graduate pack version, Version 22.0. Chicago, IL: (Author) (or the latest version).

Recommended Texts


VI. Course Requirements

A. Reading Assignments
   Please see Topical Outline and Reading Assignments.

B. Written Assignments
   To assist students in completing the learning objectives for this course, there
   will be three graded homework assignments related to the course content. Only hard copies
   of the assignments will be accepted.

C. Final Exam
   A final exam will be required of all students to demonstrate their knowledge
   and competency in multivariate statistical analysis.

D. Class Participation
   1. Class Attendance (5%)
      One point will be taken from the final grade for each absence from
      class. However, a student who is absent from class for more than five
      times (including both excused and non-excused absence) will be
      dropped from the course. In the case that the absence is approved
      by the instructor, half a point will be deducted from the final grade.

   2. Class Participation (5%)
Students are expected to participate in class discussions and projects.

VII. Evaluation and Grading

Final course grades will be based on the following distribution:

- Feb. 18  Homework Assignment #1 Due  20%
- March 18 Homework Assignment #2 Due  20%
- April 8   Homework Assignment #3 Due  20%
- April 22   Final Exam     30%
- Class Participation     5%
- Class Attendance     5%

The following standard grading scale has been adopted for all courses taught in the college:

- A  =  96-100% of the points
- A-  =  92-95.9%
- B+= 88-91.9%
- B  =  84-87.9%
- B- =  80-83.9%
- C+ = 76-79.9%
- C  =  72-75.9%
- C- = 68-71.9%
- D  =  64-67.9%
- F  = Below 64%

No "incomplete" grades will be given by any instructor without prior permission (excluding an unforeseen emergency) from the instructor.

VIII. Policy on grades of I (Incomplete):

The grade of "I" (Incomplete) is a conditional and temporary grade given when students are either (a) passing a course or (b) still have a reasonable chance of passing in the judgment of the instructor but, for non-academic reasons beyond their control have not completed a relatively small part of all requirements. Students are responsible for informing the instructor immediately of the reasons for not submitting an assignment on time or not taking an examination. Students must contact the instructor of the course in which they receive an "I" grade to make arrangements to complete the course requirements. Students should be instructed not to re-register for the same course in a following semester in order to complete the incomplete requirements.

The grade of "I" must be changed by fulfillment of course requirements within one year of the date awarded or it will be changed automatically to an "F" (or to a "U" [Unsatisfactory] in S/U graded courses). The instructor may require a time period of less than one year to fulfill course requirements and the grade may be changed by the instructor at any time to reflect work complete in the course. The grade of "I" may not be changed to a grade of W.
IX. Policy on academic dishonesty and plagiarism

Students are expected to demonstrate and maintain a professional standard of writing in all courses, do one’s own work, give credit for the ideas of others, and provide proper citation of source materials. Any student who plagiarizes any part of a paper or assignment or engages in any form of academic dishonesty will receive an "I" for the class with a recommendation that a grade of F be assigned, subsequent to a College hearing, in accordance with the University policy on academic dishonesty. Other actions may also be recommended and/or taken by the College to suspend or expel a student who engages in academic dishonesty.

All papers and written assignments must be fully and properly referenced using APA style format (or as approved by the instructor), with credit given to the authors whose ideas you have used. If you are using direct quotes from a specific author (or authors), you must set the quote in quotation marks or use an indented quotation form. For all direct quotes, you must include the page number(s) in your text or references. Any time that you use more than four or five consecutive words taken from another author, you must clearly indicate that this is a direct quotation. Please consult the current APA manual for further information.

Academic dishonesty includes using any other person’s work and representing it as your own. This includes (but is not limited to) using graded papers from students who have previously taken this course as the basis for your work. It also includes, but is not limited to submitting the same paper to more than one class. If you have any specific questions about plagiarism or academic dishonesty, please raise these questions in class or make an appointment to see the instructor. This statement is consistent with the University Policy on Academic Dishonesty that can be found in your UH Student Handbook.

X. Consultation

Individual appointments will be scheduled with any member of the class upon request. The instructor can be reached by calling (713) 743-8111 or contacting him in his office during office hours (Work Building Room 412), or by e-mail at PLEUNG@UH.EDU or by fax at (713) 743-8149.

Addendum: Whenever possible, and in accordance with 504/ADA guidelines, the University of Houston will attempt to provide reasonable academic accommodations to students who request and require them. Please call 713-743-5400 for more assistance.
<table>
<thead>
<tr>
<th>Class Session</th>
<th>Lecture Topic and Readings</th>
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<tbody>
<tr>
<td>January 14</td>
<td>Introduction&lt;br&gt;Review of Course Syllabus&lt;br&gt;A Framework for Statistical Analysis&lt;br&gt;Review of Univariate and Bivariate Statistics&lt;br&gt;Abu-Bader Chs. 1 &amp; 2&lt;br&gt;Field Chs. 1, 2, 3, 4, 6, 7 and 9</td>
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<td>January 21</td>
<td>Review of Simple Linear Regression&lt;br&gt;Abu-Bader Ch. 3</td>
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<td>January 28</td>
<td>Issues in Statistical Assumptions&lt;br&gt;Field Ch. 5</td>
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<td>February 4 to February 11</td>
<td>Multiple Regression Analysis I&lt;br&gt;The Regression Assumptions&lt;br&gt;Confidence Intervals and significance test&lt;br&gt;The Prediction Error for Y&lt;br&gt;Analysis of Residuals&lt;br&gt;Abu-Bader Ch. 4&lt;br&gt;Field, Ch. 8</td>
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<td>February 18</td>
<td>Homework Assignment #1 Due</td>
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<td>February 18</td>
<td>Multiple Regression Analysis II&lt;br&gt;The General Equation&lt;br&gt;Interpreting the Parameter Estimates&lt;br&gt;The Multiple R-square&lt;br&gt;Predicting Y&lt;br&gt;The Possibility of Interaction Effects&lt;br&gt;Dummy Variables&lt;br&gt;Norusis, Chs. 19-23 (to be placed outside my office door)</td>
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<td>February 25</td>
<td>Multiple Regression Analysis III&lt;br&gt;Specification Error&lt;br&gt;Measurement Error&lt;br&gt;Multicollinearity &amp; Nonlinearity</td>
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Moderation & Mediation

Field, Ch. 10

March 4
One-Way ANOVA
Two-Way ANOVA
Abu-Bader Chs. 1 and 6
Field, Chs. 11 (ANOVA) & 13 (Factorial ANOVA)

March 11
Spring Break (No Class)

March 18
Homework Assignment #2 Due

March 18 to March 25
Two-Way ANOVA
Two-way Analysis of Covariance
Abu-Bader Chs. 7
Field, Chs. 14 (ANCOVA)

April 8
Homework Assignment #3 Due

April 1 to April 15
MANOVA & MANCOVA
Abu-Bader Ch. 9
Field, Ch. 16

April 22
Final Exam
BIBLIOGRAPHY

Statistical Methods: Basic


**Multivariate Analysis: General**


*(QA278.75.A38 2005)*


Routledge. *(QA278 .S74 2009)


**Multiple Correlation/Regression**


**Factor Analysis**


**Discriminant Function Analysis**


**Meta-analysis**


**Logistic Regression**


**Loglinear**


Structural Equation Modeling


Path Analysis


Canonical Correlation Analysis


* Available at the University of Houston, M.D. Anderson Library.