UNIVERSITY of HOUSTON

GRADUATE COLLEGE OF SOCIAL WORK WWW.SW.UH.EDU

COURSE TITLE/SECTION: SOCW 8424 Statistics and Data Analysis I

TIME: Monday 1 to 4 p.m.; Lab 4-5 p.m.; Room 221 Social Work Building

FACULTY: Patrick Leung, PhD **OFFICE HOURS**: Monday 12-1 p; 5-6 p; 444 SW

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I. COURSE

A. Catalog Description

Credit (3.0). Explores the utilization of descriptive and inferential statistics in behavioral science applications

B. Purpose

The purpose of this course is to provide a conceptual and applied understanding of biostatistics in behavioral science research.

II. OBJECTIVES

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

1. Describe data using descriptive and inferential statistics;
2. Describe data using graphs and charts;
3. Demonstrate a basic knowledge of applied statistical methods from basic to descriptive to advanced inferential approaches;
4. Compare and contrast different approaches to data analysis (parametric and no-parametric or inferential and descriptive methods);
5. Demonstrate an understanding of the relationship between research study design and data analysis;
6. Make informed decisions on selecting the appropriate analytic approach for behavioral science research data;
7. Make informed decisions on selecting the appropriate technique for describing and presenting data.

III. COURSE CONTENT

Introduction for the doctoral level student to the use applications of statistics. Both descriptive and inferential statistics will be covered. Students will be expected to learn how to describe quantitative data sets and multiple ways of displaying data. This is an important process for one doing a quantitative dissertation, for instance. One should understand one's data thoroughly before attempting to perform any types of inferential analyses lest you chose the wrong approach for the data and be forced to start over again. You will also be introduced to the topic of inferential statistics. Inference allows one to make statements about a larger group of individuals from data obtained from a subset of that larger group. This allows the testing of scientific hypotheses. You will therefore be expected to choose the appropriate statistical procedure for certain types of data analysis.

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

Abu-Bader, S. (2011). Statistical methods in social science research. Chicago, IL: Lyceum Books, Inc.

SPSS, Inc. (2017). IBM® SPSS® Statistics Premium GradPack – Including Statistics Base, Advanced Statistics, Regression, Custom Tables, Data Preparation, Missing Values. Chicago, IL: Author (or the latest version). Price: About $100 (Please **Do Not** purchase the Student Version which is about $35; it will not work for my class)

RECOMMENDED TEXTS

Abu-Bader. (2011). Advanced & multivariate statistical methods for social science research. Chicago, IL: Lyceum Books, Inc.

American Psychological Association. (2009). Publication manual of the American Psychological Association (6th ed.). Washington, DC: Author.

Hedderson, J., & Fisher, M. (1993). SPSS made simple (2nd ed.). Belmont, CA: Wadsworth Publishing Company.

Kinnear, P.R., & Gray, C.D. (1999). SPSS for windows made simple (3rd ed.). East Sussex UK: Psychology Press, Publishers.

Norusis, J Marija (2000). SPSS 10.0: Guide to data analysis. Upper Saddle River, NJ: Prentice Hall.

Norusis, M. (1997). SPSS 7.5 guide to data analysis. Upper Saddle River, New Jersey: Prentice Hall, chapters 19-23.

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.

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 deducted 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 unexcused 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

Grades:

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

Please click the link below for the full explanation of the Academic Honesty policy and procedure:

Policy: http://www.uh.edu/provost/policies/honesty/_documents-honesty/academic-honesty-policy.pdf

Definitions:
"Academic dishonesty" means employing a method or technique or engaging in conduct in an academic endeavor that contravenes the standards of ethical integrity expected at the University of Houston or by a course instructor to fulfill any and all academic requirements. Academic dishonesty includes but is not limited to, the following:

Plagiarism

a. Representing as one's own work the work of another without acknowledging the source (plagiarism). Plagiarism includes copying verbatim text from the literature, whether printed or electronic, in all assignments including field.

Cheating and Unauthorized Group Work

b. Openly cheating in an examination, as copying from another's paper; c. Being able to view during an examination, quiz or any in-class assignment an electronic device that allows communication with another person, access to unauthorized material, access to the internet, or the ability to capture an image, unless expressly permitted by the instructor;
d. Using and/or possessing "crib notes," as unauthorized use of notes or the like to aid in answering questions during an examination;
e. Giving or receiving unauthorized aid during an examination, such as trading examinations, whispering answers, and passing notes, and using electronic devices to transmit or receive information;
f. Securing another to take a test in the student's place. Both the student taking the test for another and the student registered in the course are at fault;

Fabrication, Falsification, and Misrepresentation

g. Changing answers or grades on a test that has been returned to a student in an attempt to claim instructor error;
h. Using another's laboratory results as one's own, whether with or without the permission of the owner;
i. Falsifying results in laboratory experiments;
j. Misrepresenting academic records or achievements as they pertain to course prerequisites or corequisites for the purpose of enrolling or remaining in a course for which one is not eligible;
k. Representing oneself as a person who has earned a degree without having earned that particular degree

Stealing and Abuse of Academic Materials

l. Stealing, as theft of tests or grade books, from faculty offices or elsewhere, or knowingly using stolen tests or materials in satisfaction of exams, papers, or other assignments; this includes the removal of items posted for use by the students;
m. Mutilating or stealing library materimaterials; misshelving materials with the intent to reduce accessibility to other students;

Complicity in Academic Dishonesty

n. Failing to report to the instructor or departmental hearing officer an incident which the student believes to be a violation of the academic honesty policy;

Academic Misconduct

o. Any other conduct which a reasonable person in the same or similar circumstances would recognize as dishonest or improper in an academic setting.

Process:

Students shall have the responsibility of reporting incidents of alleged academic dishonesty to the instructor of record involved or to the appropriate authority if the alleged act is not associated with a specific class within 5 class days of the incident. Faculty or instructor of record shall have the responsibility of reporting incidents of alleged academic dishonesty through their college hearing officer within 5 class days of the incident. The faculty should include the recommended sanction in the report. The college hearing officer will notify the student of the report and recommended sanction. The student can accept the sanction and waive a hearing or request a college hearing. A hearing shall be set within 10 days and would be consist of two faculty and three students chosen by the hearing officer.

X. Course Schedule and Reading Assignments

Please see "topical outline".

Final course grades will be based on the following distribution:

Oct. 2nd	Homework Assignment #1 Due	20%
Oct. 23rd	Homework Assignment #2 Due	20%
Nov. 13th	Homework Assignment #3 Due	20%
Nov. 27th	Final Exam	30%
	Class Participation	5%
	Class Attendance	5%

XI. Bibliography

See bibliography at the end of the syllabus.

XII. Americans with Disabilities Statement

The University of Houston System complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for students with a disability. In accordance with Section 504 and ADA guidelines, each University within the System strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please contact the UH Center for Disabilities at 713-743-5400.

XIII. Counseling and Psychological Services

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (www.uh.edu/caps) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. Also, there is no appointment necessary for the "Let's Talk" program, which is a drop-in consultation service at convenient locations and hours around campus. http://www.uh.edu/caps/outreach/lets_talk.html.

XIV. 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 (Social Work Building Room 444), or by e-mail at PLEUNG@UH.EDU or by fax at (713) 743-8149.

TOPICAL OUTLINE AND READING ASSIGNMENTS

Class Session	**Lecture Topic and Readings**
August 20 (Week 1)	Introduction Review of Course Syllabus Review of the Framework for Statistical Analysis Overview of Research Methodological Terms Abu-Bader Ch. 1
August 27 (Week 2)	Creating SPSS Data Files & Data Organization and Summary: Frequency Tables and Graphs Abu-Bader Chs. 2 & 3
Sept. 3 (Week 3)	Labor Day (no class)
Sept.10 (Week 4)	Descriptive Statistics: Measures of Central Tendency, Variability and Percentiles; Normality of Distributions, Data Transformations, and Standard Scores Abu-Bader Chs. 4 & 5
Sept. 17 (Week 5)	Hypothesis Testing & Bivariate Correlation Abu-Bader Chs. 6 & 7
Sept. 24 (Week 6)	Independent T-Tests & Dependent T-test Abu-Bader Chs. 8 & 9
October 1 (Week 7)	Chi-Square Tests Abu-Bader Ch. 11
October 8 (Week 8)	One-way ANOVA Abu-Bader Ch. 10
October 15 (Week 9)	Two-way ANOVA Abu-Bader Ch. 6 (Advanced & Multivariate Statistical)
October 22 (Week 10)	ANCOVA Abu-Bader Ch. 7 (Advanced & Multivariate Statistical)

Oct. 29 (Week 11) Repeated Measures ANOVA

Abu-Bader Ch. 8 (Advanced & Multivariate Statistical)

Nov. 5 (Week 12) Simple Linear Regression Analysis

Abu-Bader Ch. 12

Nov. 12 (Week 13) Multiple Regression

Norusis, M. (1997). Chs 19-21

Nov. 19 (Week 14) Multiple Regression

Norusis, M. (1997). Chs 22-23

Nov. 26 (Week 15) Final Exam

BIBLIOGRAPHY

Statistical Methods: Basic

Balock, H.M., Jr., (1972). *Social statistics* (2nd ed.). New York: McGraw-Hill.*(HA29 .B59 1972)

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Zeller, R.A., & Carmines, E.G. (1978). *Statistical analysis of social data*. Chicago: Rand McNally.

Multivariate Analysis: General

Baxter, M.J. (1994). *Exploratory multivariate analysis in archaeology.* Edinburgh: Edinburgh University Press. *(CC80.6.B39 1994)

Bernstein, I.H., Garbin, C.P., & Teng, G.K. (1988). *Applied multivariate analysis*. New York: Springer-Verlag. *(QA278.B457 1988)

Berry, W.D., & Feldman, S. (1985). *Multiple regression in practice*. Beverly Hills, CA: Sage.

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Busch, D.H. (1991). *The new critical path method: CPM: The state-of-the-art in project modeling and time reserve management*. Chicago: Probus Publishing Company. *(TS158.B87 1991)

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Multiple Correlation/Regression

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Factor Analysis

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