Course Syllabus: PSYC/SOCL 3314
Statistics for the Social and Behavioral Sciences
Fall, 2020

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REQUIRED TEXTS AND MATERIALS

- Diekhoff, G. M. *Basic Statistics for the Social and Behavioral Sciences*. Zip Publishing reprint of Prentice-Hall publication. Available from the campus bookstore.

- Diekhoff, G. M. *SPSS for the Social and Behavioral Sciences (2020-2021).* Zip Publishing reprint. Available from the campus bookstore.

- Battery-operated hand calculator with the following functions: +, -, x, /, x^2, square root, and memory.

- USB flash drive

- You will need to have a desktop or laptop computer with an installed subscription to the IBM SPSS Statistics Standard Grad Pack (Version 27). You can purchase this wherever you like, but here is one vendor that has proven to be reliable and who provided good customer service in the past: https://www.hearne.software/SPSS-Selection. Where ever you get it the cost should be about $50 for a six-month subscription.

- You will need to have a screen capture tool installed on your desktop or laptop computer. You can obtain such a tool anywhere you like, but TechSmith Capture (formerly "Jing") is free at this URL: https://www.techsmith.com/jing-tool.html

LEARNING OBJECTIVES

In this course you will be exposed to the full range of basic statistics as they are used by researchers in the social, behavioral, and biomedical sciences. The course begins with descriptive statistics--methods by which we can best describe individual cases, samples of several cases, and even populations. Univariate significant difference tests come next, where you will learn how to determine if a difference that is observed between a sample and a population or between several samples is a difference that is large enough to be attributed to factors beyond the natural variability that is characteristic of samples. Bivariate correlational statistics help us to determine which variables covary, or "move" together, and give us ways of measuring the strength and reliability of those associations. Finally, bivariate regression analysis allows us to use

an established correlation between two variables to predict a case's score on one variable when provided with a score on the other variable. Throughout the semester the emphasis will be on applications of statistical procedures. However, this is not a "cookbook" statistics course. You will learn how statistical analyses work in addition to learning how to use them. Thirteen 50-minute computer labs will provide you with training in the use of IBM's *Statistical Package for the Social and Behavioral Sciences* (IBM SPSS). This package of statistical software will enable you to perform a full range of basic statistical analyses and prepare you for the study of more complex procedures.

PLEASE REMEMBER THIS

Although I've tried in this syllabus to let you know what to expect, remember that everything is in a flux and subject to change, especially the specifics of course delivery. For example, I wouldn't be a bit surprised if at some point in the semester we stopped live streaming to the classrooms and went to pre-recorded lectures delivered using an online platform, perhaps D2L or perhaps something else. We'll all have to be flexible.

LECTURES: WHAT YOU CAN EXPECT

I will stream lectures from a remote location. Lectures will be streamed to the classroom (PY-102) on a MW 11-12:20 (Section 101) or TR 9:30-10:50 (Section 102) schedule. Those same lectures will be available via Zoom through D2L on the same schedule for remote viewing by students who cannot attend class.

Four tests covering material presented in lectures and the textbook will be all be administered remotely through D2L. In order to provide me with some flexibility in the pacing of lectures, these four tests are not scheduled. Instead, they will be announced at least one week in advance. Performance on the four exams covering material presented in lectures and the textbook will contribute 75% toward your course grade.

Students who view lectures in PY-102 will be required to wear face masks. Students who do not cover their faces will be asked to leave and may be dropped from the class for failure to comply with MSU's mask policy. There is nothing political in this requirement. MSU's face covering requirement is based on the possibility that face masks might have some beneficial effect in preventing the spread of COVID-19, flu, and other viruses. If there's even a chance that covering our faces will help, let's give it a chance. Cleaning materials will be available in the classroom so that you can clean your work space.

LECTURE ATTENDANCE

I will not take attendance in the lecture portion of the class except on days of lecture exams, but I strongly encourage you to view the lectures as you are very unlikely to do well in the course otherwise. There will be special advantages to attending lectures "live" in PY-102. You will be able to ask questions (or so I'm told; we'll see if that

works). You will also be able to assist and be assisted by other students in the class (within the boundaries of social distancing). Students who miss scheduled lecture exams will be allowed to take makeup exams (contact me), but there will be a one letter grade penalty for exams missed for unexcused reasons. University policy dictates three types of excused absences:

- the student provides a written excuse from a medical practitioner stating that the student was unable to test on the day of the test;
- the student provides a written excuse from a medical practitioner stating that the student's dependent child was ill on the day of the test;
- the student provides a written excuse from an official of Midwestern State University stating that the student was in attendance at a mandatory university function on the day of the test.

Funerals, employment-related absences, illnesses not requiring medical attention, job interviews, family emergencies, automobile malfunctions, court appearances, etc. do not constitute excused absences.

COMPUTER LABS: WHAT YOU CAN EXPECT

Thirteen computer lab sessions (ten instructional labs and three testing sessions) are a required component of this course. The schedule for these labs is found at the end of the syllabus. Although the computer lab in O'Donohoe 126 will be available for your use throughout the semester, there will be NO face-to-face lab instruction in the computer lab and you will NOT be able to use the lab for testing. It is for that reason that you will need to purchase a subscription to IBM SPSS. The 10 instructional labs will be pre-recorded and made available to you online through D2L or another platform. Your lab instructor will be in touch with you via email with details. Those instructional videos will be released according to the schedule at the end of this syllabus. The three computer lab tests will be done through D2L on the schedule shown at the end of the syllabus.

Your performance on the three computer lab exams and ten computer lab homework assignments will contribute 25% toward your course grade.

COMPUTER LAB ATTENDANCE

Since labs will be taught remotely, attendance is not required in the labs, but you are expected to take exams on the days and times that they are scheduled and to have lab homework assignments turned in on schedule. Missing an exam results in a 10% (one letter grade) penalty unless you provide documentation that the absence was excused, as described below.

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- the student provides a written excuse from an official of Midwestern State University stating that the student was in attendance at a mandatory university function on the day of the test.

Funerals, employment-related absences, illnesses not requiring medical attention, job interviews, family emergencies, automobile malfunctions, court appearances, etc. do not constitute excused absences.

GRADING

There will be four tests in the lecture portion of the class, each worth 100 points. There will be three tests in the computer lab, each worth 100 points. Finally, there will be 10 computer lab homework assignments each worth 10 points. Course grades will be based on your accumulated point totals, weighted so that the lecture portion of the course contributes 75% to your total and the lab contributes 25%.

Points accumulated from lecture and lab exams and lab homework will be combined to yield a total as follows:

Total = [.75 x (Lecture Test Total)] + [.25 x (Lab Test Total + Lab Homework Total)]

Course letter grades will then be assigned on the following scale:

A = 360-400 total points
B = 320-359 total points
C = 280-319 total points
D = 240-279 total points
F = less than 240 total points

Grades on lecture or lab exams taken late because of an unexcused absence will be lowered by 10% (one letter grade). It is your responsibility to contact me to arrange a makeup examination if you miss a lecture exam or contact your lab instructor to arrange a makeup examination if you miss a computer lab exam.

Lab homework associated with each lab exam is due any time prior to the day of the lab exam. For example, the first lab exam covers material presented in Labs 1 through 3. Your homework for Labs 1 through 3 is therefore due any time prior to the first lab exam. Homework turned in late for any reason will receive no credit. Lab homework assignments that are improperly labeled will not be graded. (Instructions on proper labeling of lab homework is described in the lab manual and will be reiterated in the first computer lab.)

OFFICE HOURS

I will be available for virtual office hours by appointment. If you want to "meet" with me via teleconference, email me at george.diekhoff@msutexas.edu to arrange an

appointment. At the time of your appointment, go to https://doxy.me/DrGeorgeDiekhoff. Be sure to use Google Chrome as your browser or you can download the free doxy.me app for your smart phone. You will then be in my virtual waiting room. I will be notified that you are there and will open our conversation.

DISABILITIES

Individuals requiring special accommodations according to the Americans with Disabilities Act should contact the MSU Disability Support Services office.

TOPICS AND READING ASSIGNMENTS

Introduction and Summation Notation—Chapter 1, Appendix A

Data distributions: Tables and graphs—Chapter 2

Descriptive statistics—Chapter 3

EXAM 1 covers Chapters 1, 2, 3, and Appendix A*****

Probability and the normal distribution—Chapter 4

Sampling distributions and interval estimation—Chapter 5

EXAM 2 covers Chapters 4 and 5*****

Significant difference tests: one- and two-sample tests; one-way ANOVA; factorial ANOVA—Chapters 6, 7, 8, 9

EXAM 3 covers Chapters 6, 7, 8, and 9*

Correlation and regression—Chapters 10, 11

EXAM 4 covers chapters 10 and 11*

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* I need to have some flexibility in scheduling exams to allow for technology failures, work backlogs in the Distance Education office, and the various uncertainties that are associated with a nontraditional instructional format. I will let you know at least one week in advance of lecture tests, and will hopefully be able to give you more advance notice than that.

COMPUTER LAB SCHEDULE

Here is the tentative schedule for computer labs and computer lab exams, subject to change as necessary.

Section 101 (Lab is on Mondays 8:00-8:50 am with lectures on MW 11:00-12:20)

08-24-2020—No Lab
08-31-2020—Lab 1, Getting Started with SPSS; Creating Data Files
09-07-2020—No Lab (Labor Day)
09-14-2020—Lab 2, Editing and Modifying Data Files
09-21-2020—Lab 3, Generating Reports and Graphs
09-29-2020—Lab Exam 1 (Homework for Labs 1-3 is due)
10-05-2020—Lab 4, Data Distributions and Descriptive Statistics
10-12-2020—Lab 5, One-Sample Significant Difference Tests
10-19-2020—Lab 6, Two-Sample Significant Difference Tests
10-26-2020—Lab Exam 2 (Homework for Labs 4-6 is due)
11-02-2020—Lab 7, One-Way ANOVA and Related Statistics
11-09-2020—Lab 8, Factorial ANOVA
11-16-2020—Lab 9, Bivariate Correlation and Scatterplots
11-23-2020—Lab 10, Bivariate Regression
11-30-2020—Lab Exam 3 (Homework from Labs 7-10 is due)

Section 102 (Lab is on Wednesdays 8:00-8:50 am with lectures on TR 9:30-10:50)

08-26-2020—No Lab
09-02-2020—Lab 1, Getting Started with SPSS; Creating Data Files
09-09-2020—Lab 2, Editing and Modifying Data Files
09-16-2020—Lab 3, Generating Reports and Graphs
09-23-2020—Lab Exam 1 (Homework for Labs 1-3 is due)
09-30-2020—Lab 4, Data Distributions and Descriptive Statistics
10-07-2020—Lab 5, One-Sample Significant Difference Tests
10-14-2020—Lab 6, Two-Sample Significant Difference Tests
10-21-2020—Lab Exam 2 (Homework for Labs 4-6 is due)
10-28-2020—Lab 7, One-Way ANOVA and Related Statistics
11-04-2020—Lab 8, Factorial ANOVA
11-11-2020—Lab 9, Bivariate Correlation and Scatterplots
11-18-2020—Lab 10, Bivariate Regression
11-25-2020—No Lab (Thanksgiving)
12-02-2020—Lab Exam 3 (Homework from Labs 7-10 is due)