

PSYCHOLOGY 521
Research Design and Inference II
SPRING 2021 ONLINE

Class Meets entirely online. Although lectures are posted online each week it is imperative that you keep Thursdays from 5p-8p available due to any unforeseen events that may require a synchronous meeting.

Instructor Joel T. Nadler, Ph.D.
Office Alumni Hall 124
Phone 650-3347
E-mail jnadler@siue.edu
Office Hours Tuesday 1:00pm-3:00pm, Thursday 5:00pm-, and by appointment
Weekly discussions for questions will be checked daily

Teaching Asst. Colleen Mock
Office Online
E-mail comock@siue.edu
Office Hours Thursdays 5:00pm – 8:00pm and by appointment

Textbooks
Required: Field, A. (2018). *Discovering Statistics Using IBM SPSS Statistics, 5th Ed.* Thousand Oaks, CA: Sage.

Optional: Stevens, J. (2001). *Applied multivariate statistics for the social sciences (4th Ed.)* Hillsdale, NJ: Lawrence Erlbaum Associates.

Cohen, J., Cohen, P., West, S., & Aiken, L. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences (3rd Ed.)*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Grimm L. G., & Yarnold, P. R. (1995). *Reading and understanding multivariate statistics*. Washington, DC: American Psychological Association.

Websites
APA Style Blog: <http://blog.apastyle.org/>
UCLA's SPSS FAQ: <http://www.ats.ucla.edu/stat/SPSS/faq/default.htm>

Additional Reading Supplemental materials will be available from the Morris Library Reserves or Electronic Reserves.

Welcome: Welcome to PSYC 521 Research Design and Inference II. This course is conducted **entirely online**, which means you do not have to be on campus to complete any portion of it. I will work very hard to help you feel connected to your colleagues, even though you may never actually meet in person! This online course will require you to carefully organize your time and your work to avoid getting behind. Expectations for performance in

an online course are the same as for a traditional course; in fact, online courses require a degree of self-motivation, self-discipline, and technology skills that can make them more demanding for some students. I will do all I can to assist you with this, but the responsibility is ultimately yours! Be sure to contact me immediately with any concerns about the course or your progress through it.

Bio: Hello, I am Joel T. Nadler. I am an Associate Professor of I/O psychology in the Department of Psychology at SIUE. I teach classes at SIUE including Industrial/Organizational Psychology, Personnel Psychology, Organizational Development, and Employee Selection. I also work as an organizational consultant and I have worked with organizations on areas such as organizational climate and culture, survey development, performance appraisal, program evaluation, needs assessment, leadership development, organizational change and development, and study design and methodology.

My primary research interests are in gender bias in selection and performance appraisal, sexual harassment, organizational attractiveness, adverse impact (EEO law), and assessing inclusive diversity practices. Additionally, I have expertise in advanced measurement, design and statistical techniques. My research has been published in journals such as *Industrial Organizational Psychology: Perspectives on Science and Practice*, *Sex Roles*, *Social Issues and Policy Review*, *Journal of Applied Social Psychology*, *American Journal of Evaluation*, and *the Journal of Leadership and Organizational Studies*.

Outside of my professional interests I enjoy traveling, riding horses and motorcycles, music, science fiction, and my pets (4 dogs, 3 cats). I am looking forward to making this online course a valuable and professionally rewarding experience for you and welcome any question you have. Email is the best way to get a hold of me and I will be checking my emails regarding this class multiple times a day.

Course Objectives The purpose of this course is to cover advanced univariate and multivariate statistics that are commonly used in psychology. This course will focus on selecting appropriate statistics for designs; and on the methodology, applications (i.e. computer calculations using SPSS), and interpretations of those statistics.

Reading & Lectures Lectures and readings will follow the same sequence. However, as they are meant to compliment rather than repeat each other; lectures will cover some material not mentioned in the book and omit material that is in the book. Students will be responsible for information from both.

Computer Lab The purpose of the lab is to teach you how to use SPSS to compute and interpret the advanced statistics covered in this course. The lab will consist of demonstrations and in-class practice assignments that will be very similar to the homework assignments. You may work with other students and the teaching assistant on these in-class assignments. Because the lab is intended for in-class assignments, not your homework assignments, you will receive your homework assignments at the end of each lab.

Homework Assignments	There are eight homework assignments, with five questions for each assignment, and each question is worth 5 points. Please type the results of these assignments whenever possible and include relevant SPSS output . All homework assignments must be done independently . Group work is considered cheating , and anyone caught cheating will receive a failing grade for that assignment. Please read each question carefully and make sure you answer all parts of each question. All of these homework assignments will constitute as 200 points of your final grade.											
Submitting Assignments	Homework assignments are due at the end of the day 6 days after receiving the assignment. Late assignments will only be accepted up to four days after the due date AND 5 points will be deducted for each day it is late in addition to that marked off for incorrect or incomplete answers. Homework assignments and all supporting documents should be turned in via Blackboard											
Exams	Three exams will be given. Each exam will count as 20% of your final grade (100 points). Exams will cover material from the lecture, readings, and labs. A study guide will be made available for the three exams approximately one week before the test. Tests will be open book, open notes, and will be posted on Monday the week they are assigned at 12:01AM CST and will be due by 11:59pm CST on that Thursday and must be submitted on Blackboard.											
Make up Exams	Make up exams will be given only in the case of a medically documented illness, in which case, an alternative exam will be provided. Failure to take a make up for a missed exam will result in a grade of 0 for that missed exam.											
Attendance & Participation	You are expected to attend class and contribute to class discussions. If you miss class, be sure to get notes from another student. I will NOT provide copies of my class notes even with an excused absence. However, lecture slides will be posted on <i>Blackboard</i> . <i>Lab viewings will now be counted as participation points</i> . Viewing of each lab video will be worth 10 points and will be based on the percent viewed of each lab video. For example, if you have viewed 75% of the video you will receive a 7.5/10 for that video. Viewings must be completed by Wednesday at 11:59pm the week after the video is posted in order to receive credit.											
Grading	<table border="0" style="width: 100%;"> <tr> <td style="padding-right: 40px;">Lab Viewings 1-12 (10 points)</td> <td>120 Points</td> </tr> <tr> <td>Homework Assignments 1-8 (25 points)</td> <td>200 Points</td> </tr> <tr> <td>Exams (100 points)</td> <td>300 Points</td> </tr> </table> <table border="0"> <tr> <td>A: 100% - 90%</td> </tr> <tr> <td>B: < 90% - 80%</td> </tr> <tr> <td>C: <80% - 70%</td> </tr> <tr> <td>D: <70% - 60%</td> </tr> <tr> <td>F: Below 60%</td> </tr> </table>	Lab Viewings 1-12 (10 points)	120 Points	Homework Assignments 1-8 (25 points)	200 Points	Exams (100 points)	300 Points	A: 100% - 90%	B: < 90% - 80%	C: <80% - 70%	D: <70% - 60%	F: Below 60%
Lab Viewings 1-12 (10 points)	120 Points											
Homework Assignments 1-8 (25 points)	200 Points											
Exams (100 points)	300 Points											
A: 100% - 90%												
B: < 90% - 80%												
C: <80% - 70%												
D: <70% - 60%												
F: Below 60%												

Course Outline for Lecture

WEEK	TOPIC	ASSIGNMENT
1 Lecture Posts Jan 19	Review of 520	
1 Lab Posts Jan 21	Psyc 520 Review	
2 Lecture Posts Jan 26	Introduction to Advanced Statistics	Read: Field Chap 2,3,4
2 Lab Posts Jan 28	Introduction to Advanced Statistics	Read: Orientation to SPSS (Norusis)
3 Lecture Posts Feb 2	Review of Correlations and Simple Regression	Read: Field Chap 8 & 9
3 Lab Posts Feb 4	Review of Correlations and Simple Regression	Read: Computing a Pearson Correlation and Simple Regression (Norusis)
4 Lecture Posts Feb 9	Multiple Regression Analysis <ul style="list-style-type: none"> • Regression coefficients • Dummy coding • Higher order trends • Interactions 	Read: Field Chap 11
4 Lab Posts Feb 11	Multiple Regression Analysis	Read: Chapter 5.8 and Multiple Linear Regression (Norusis) Due: 2/10 11:59pm CST Lab Homework 1
5 Lecture Feb 16	Multiple Regression Analysis <ul style="list-style-type: none"> • Partial and Semi-partial correlations • Multicollinearity • Model Selection 	
5 Lab Posts Feb 18	Multiple Regression Analysis (continued)	Read: Aiken & West Due: 2/17 11:59pm CST Lab Homework 2
6 Lecture Posts Feb 23	Mediational & Moderation Models <ul style="list-style-type: none"> • Regression 	Read: Barron & Kenny (1986) Shrout & Bolger (2002) Fraizer, Tix & Barron (2004)
6 Lab Posts Feb 25	Meditational & Moderational Models Test Review	Read: Barron & Kenny (1986), Fraiser 2004 Due: 2/24 11:59pm CST Lab Homework 3
7 EXAM Mar 1-4	Exam 1 (3/1-3/4) Open book, take home	Covers weeks 1-6
8 Lecture Posts Mar 9	Chi-Square, Logistic Regression, Ordinal Logistic Regression	Read: Field Chap 19
8 Lab Posts Mar 11	Logistic Regression and Ordinal Logistic Regression	Due: 3/10 11:59pm CST Lab Homework 4

WEEK	TOPIC	ASSIGNMENT
9 Lecture Posts Mar 16	Review of ANOVA and ANCOVA <ul style="list-style-type: none"> • Between-subjects • Within-subjects • Factorial 	Read: Field Chap 12, 13, 14, 15
9 Lab Posts Mar 18	ANOVA and ANCOVA	Due: 3/17 11:59pm CST Lab Homework 5
10 Lecture Posts Mar 23	Multivariate Analysis of Variance (MANOVA) and Multivariate Analysis of Covariance (MANCOVA) <ul style="list-style-type: none"> • Between-subjects • Within-subjects • Factorial 	Read: Field Chap 17
10 Lab Posts Mar 25	MANOVA and MANCOVA	
11 Lecture Posts Mar 30	MANOVA and MANCOVA (continued) <ul style="list-style-type: none"> • Statistical assumptions • Mixed designs • MANOVA vs MANCOVA 	
11 Lab Posts Apr 1	MANOVA and MANCOVA Test Review	Due: 3/31 11:59pm CST Lab Homework 6
12 EXAM Apr 5-8	Exam 2 (4/5-4/8) Open book, take home	Covers weeks 8-11
13 Lecture Posts Apr 13	Discriminant Analysis	
13 Lab Posts Apr 15	Discriminant Analysis	
14 Lecture Posts 20	Principle Components Analysis & Factor Analysis & Introduction to Structural Equation Modeling (SEM)	Read: Field Chap 18 & 21; Bryant & Yarnold (1995)
14 Lab Posts Apr 22	PCA/ Factor Analysis	Due: 4/21 11:59pm CST Lab Homework 7
15 Lecture Posts April 27	Last Lecture Test Review	Due: 4/28 11:59pm CST Lab Homework 8
16 EXAM May 3-6	Exam 3 (5/3-5/6)	Covers weeks 13 – 15

Homework

1. Correlation and Simple Regression
2. Multiple Regression I: Testing for Significance
3. Multiple Regression II: Model fit and multicollinearity
4. Mediation & Moderation Analyses
5. Logistic and Ordinal Logistic Regression
6. MANOVA and MANCOVA
7. Discriminant Analysis
8. PCA and Factor Analysis

Exams

Exam 1

- Correlation
- Simple Regression
- Multiple Regression
- Mediation and Moderation Analyses

Exam 2

- Logistic and Ordinal Logistic Regression
- MANOVA
- MANCOVA

Exam 3

- Discriminant Analysis
- Principle Component Analysis
- Factor Analysis
- SEM

Online Zoom Office Hours

Please fully review the readings and watch the audio lectures prior to attending these weekly office hours.

January 21 5pm-5:30pm CST: <https://siue.zoom.us/j/97028834042>

January 28 5pm-5:30pm CST: <https://siue.zoom.us/j/97734690629>

February 4 5pm-5:30pm CST: <https://siue.zoom.us/j/92219070332>

February 11 5pm-5:30pm CST: <https://siue.zoom.us/j/95213454059>

February 18 5pm-5:30pm CST: <https://siue.zoom.us/j/98721294409>

February 25 5pm-5:30pm CST: <https://siue.zoom.us/j/95414907581>

March 11 5pm-5:30pm CST: <https://siue.zoom.us/j/92538013792>

March 18 5pm-5:30pm CST: <https://siue.zoom.us/j/91306480233>

March 25 5pm-5:30pm CST: <https://siue.zoom.us/j/98718104425>

April 1 5pm-5:30pm CST: <https://siue.zoom.us/j/98368887829>

April 15 5pm-5:30pm CST: <https://siue.zoom.us/j/91614355828>

April 22 5pm-5:30pm CST: <https://siue.zoom.us/j/98736279662>

April 29 5pm-5:30pm CST: <https://siue.zoom.us/j/96515790774>

The Psychology Department's Policy on Plagiarism: Plagiarism includes presenting someone else's words without quotation marks (even if you cite the source), presenting someone else's ideas without citing that source, or presenting one's own previous work as though it were new. When paraphrasing from another source or your own work, at the very least, the student should change the wording, sentence syntax, and order of ideas presented in the paper. Additionally, you should not submit a paper, or parts of a paper, written to fulfill the requirements of one class for the requirements in another class without prior approval of the current instructor and appropriate citation. Ideally, the student will integrate ideas from multiple sources while providing critical commentary on the topic in a way that clearly identifies whether words and ideas are those of the student or are from another source. Plagiarism is one type of academic misconduct described in SIUE's Student Academic Code (<http://www.siu.edu/policies/3c2.shtml>). University policy states that "Normally a student who plagiarizes shall receive a grade of F in the course in which the act occurs. The offense shall also be reported to the Provost." (<http://www.siu.edu/policies/1i6.shtml>). The University policy discusses additional academic sanctions including suspension and expulsion from the University. To insure that you understand how to avoid plagiarism, we encourage you to review the information on plagiarism provided on the Department of Psychology web page at <http://www.siu.edu/education/psychology/plagiarism.shtml>.

Accommodations for Disabilities: Notify the professor immediately of any needed accommodations for documented disabilities at the beginning of the course. If you are expecting accommodations at any time in this class, you must speak Disability Support Services in the Student Success Center in Rm 1270 (650-3726) before you need accommodations. Also, According to SIUE safety and procedures policies, students with disabilities have the option of developing a written plan for evacuation in the unlikely event of an emergency that requires evacuation. If any student with a disability would like to develop a written evacuation plan for this class, please contact the instructor.

The Psychology Department's Policy on Incomplete Grades: It is the student's responsibility to officially withdraw from a course by the dates set by the University if the student is not intending to complete the course. Students who do not withdraw and have not completed the course will receive an F. Only under special circumstances a faculty member may agree to give a student an Incomplete (INC) grade in order to allow the student to complete the remaining work for the course no later than the end of the following semester. An INC is never automatic but must be approved by the professor. If a professor agrees to give a student an INC grade, the professor and the student will fill out a form (Memorandum of Incomplete Grade) indicating why an INC is being given. One copy of the completed form will be given to the student, one copy will be given to the professor, and the Department of Psychology secretary will keep one copy. If the work is not completed by the time specified on the Memorandum of Incomplete Grade form, the grade will be changed from INC to F.

SIUE Nondiscrimination Policy: Southern Illinois University Edwardsville (SIUE) is a public comprehensive University committed to creating and maintaining a diverse community in which students, faculty, and staff can learn and work together in an environment free of discrimination and free from any form of illegal harassment. Such actions violate the dignity of the individual and the integrity of the University as an institution of learning. SIUE prohibits discrimination against employees, applicants for employment and students on the basis of age,

color, disability, marital status, national origin, race, religion, sex, sexual orientation, or veteran's status. Discrimination in any form will not be tolerated; management and supervisory personnel, at all levels, are responsible for taking reasonable and necessary action to prevent discrimination.

SIUE Psychology Department Twitter: By following our department's Twitter page (@SIUEpsychology) you will be able to get announcements, find out what is happening in the department, and learn more about recent psychology news. Also, this is also a great way to stay connected with the Department of Psychology after you graduate from SIUE.

COVID-19 Pandemic Policies Related to Classroom Instruction (Fall 2020-Spring 2021)

Health and Safety

Consistent with the Illinois Board of Higher Education guidance contained in "Safely Launching Academic Year 2020" released on June 23, 2020 and guidelines established by Governor J. B. Pritzker and *Restore Illinois*, Southern Illinois University Edwardsville has implemented a new policy to help ensure the safety of all students, faculty and employees during the pandemic. The measures outlined below are required and any student who does not comply may be in violation of the *COVID-19 People-Focused Health and Safety Policy*, as well as the University's *Student Code of Conduct*.

The full text of the *COVID-19 People-Focused Health and Safety Policy* can be found here: <https://www.siue.edu/policies/Covid.shtml>.

Classrooms, Labs, Studios, and Other Academic Spaces

While in the classroom, lab, studio, or other academic spaces, students shall practice social distancing measures by maintaining a distance of at least six feet from others in the classroom and wearing a face covering. Extra care should be taken upon entering and leaving the classroom spaces. Classroom furniture should not be rearranged, and furniture that has been taped off or covered should not be used.

Students who forget to wear a face mask or face shield will be reminded of their obligation to comply with SIUE's *COVID-19 People-Focused Health and Safety Policy* and temporarily asked to leave the class until they are able to conform to the policy. Students who forget or lose their face coverings may be able to obtain replacements from a friend, a faculty member, or a nearby departmental office. Face coverings are also available for purchase in the Cougar Store (MUC).

Students who refuse to wear a face covering will be asked to leave the classroom and referred to the Dean of Students for non-compliance with community health and safety protocols. Repeated non-compliance may result in disciplinary actions, including the student being administratively dropped from an on-ground/face-to-face course or courses without refund if no alternative course format is available.

If a student has a documented health condition which makes wearing a face covering medically intolerable, that student should contact ACCESS to explore options with the understanding that ACCESS will not grant accommodations which excuse the need for a face covering while on campus

or in the classroom. ACCESS will work with qualifying individuals to find reasonable alternatives, whenever such solutions are available. Please call or contact the ACCESS Office via email to schedule an online appointment to discuss potential alternatives. ACCESS office (Student Success Center, Room 1203, 618-650-3726, and myaccess@siue.edu).

General Health Measures

At all times, students should engage in recommended health and safety measures, which include:

- Conducting a daily health assessment. If you have COVID-19 symptoms, but not yet tested positive, have had COVID-19 close contact exposure, or are COVID-19 diagnosed as presumptive or confirmed positive, stay home and contact your health provider or SIUE Health Service at cougarcare@siue.edu or 618-650-2842. More information is available on the [SIUE COVID-19 website](#).
- Frequent washing or disinfecting of hands.
- Social distancing by maintaining a distance of at least six feet from others.
- Face masks or face coverings that cover the nose and mouth are required in indoor public spaces regardless of the ability to maintain social distance. Indoor public spaces include common spaces or community settings that anyone can access, such as reception areas with walk-in access, restrooms, hallways, classrooms, teaching and research laboratories, as well as common spaces in residence halls, conference rooms, lobbies, and break rooms.
- Adhere to directional signs and traffic flow patterns in buildings and offices. Doors for entering and exiting buildings will be designated. Where multiple doors exist, in and out doors will be marked with “Entrance” and “Exit” signs. Plans that consider traffic flow in and out of buildings, and within buildings (i.e. stairs, hallways, etc. where possible) will be marked.

Academic Integrity

Students are reminded that the expectations and academic standards outlined in the Student Academic Code (3C2) apply to all courses, field experiences and educational experiences at the University, regardless of modality or location. The full text of the policy can be found here: <https://www.siue.edu/policies/3c2.shtml>.

Recordings of Class Content

Faculty recordings of lectures and/or other course materials are meant to facilitate student learning and to help facilitate a student catching up who has missed class due to illness. As such, students are reminded that the recording, as well as replicating or sharing of any course content and/or course materials without the express permission of the instructor of record, is not permitted, and may be considered a violation of the University’s Student Conduct Code (3C1), linked here: <https://www.siue.edu/policies/3c1.shtml>.

Potential for Changes in Course Schedule or Modality

As the COVID-19 pandemic continues, there remains a possibility that planned classroom activities will need to be adjusted. Depending on circumstances and following state-issued recommendations,

potential changes include changes in course modality (e.g., transition from face-to-face to online) or in course scheduled meetings. These changes would be implemented to ensure the successful completion of the course. In these cases, students will be provided with an addendum to the class syllabus that will supersede the original version.

Diversity and Inclusion Syllabus Statement

SIUE is committed to respecting everyone's dignity at all times. In order to learn, exchange ideas, and support one another, our virtual and physical classrooms must be places where students and teachers feel safe and supported. Systems of oppression permeate our institutions and our classrooms. All students and faculty have the responsibility to co-create a classroom that affirms inclusion, equity, and social justice, where racism, sexism, classism, ableism, heterosexism, xenophobia, and other social pathologies are not tolerated. Violations of this policy will be enforced in line with the SIUE Student Conduct Code.

The [Center for Student Diversity & Inclusion](#) is an excellent resource for students for support and community. Any person who believes they have experienced or witnessed discrimination or harassment can contact Ms. Jamie Ball, Director in the Office of Equal Opportunity, Access and Title IX Coordination at (618) 650-2333 or jball@siue.edu.
[Online form for reporting bias incidents.](#)