

PSY 210: Applied Statistics for Social Science

FALL 2019 ——— 3 Credits

MARIAN UNIVERSITY
COLLEGE OF ARTS, SCIENCE, & LETTERS
Department of Social, Behavioral, and Forensic Sciences

Why should you take (and be interested in) this class?

This course will introduce you to concepts and critical thinking skills that are used in various disciplines and that will help you learn to think like a scientist. Thinking like a scientist will help you to evaluate information, make decisions, and solve problems in your future career and in your everyday life. In this class, there will be at least one thing you discover that will excite you, and that will influence how you see the world!

Catalog Description: An interdisciplinary introduction to the basic principles of data analysis with an emphasis on application. Students are expected to apply these principles to data analysis in their respective areas of study. The applied focus is on the computerized application of summary statistics, one/two/multi-sample tests, linear models, association tests, randomness/normality tests, time series comparison, quality control charts and probability distributions as used across a variety of community and organizational settings. Other techniques may be added as appropriate for specific disciplines. Prerequisite: Appropriate math placement test score or MAT 001 with grade of C or higher.

Who is your professor?

Dr. Kidder (she/her) is an assistant professor of psychology at Marian University. She completed her Bachelors in Psychology at Lock Haven University in Pennsylvania and her Masters and Ph.D. at the University of Texas at El Paso. There, she taught as a graduate student instructor. Dr. Kidder teaches general psychology, statistics for social science, research methods, social psychology, cognitive psychology, neuroscience and history and systems in psychology. She and her family (husband and two kids) have lived in Fond du Lac since 2016.

Contact Information

Email: ckkidder08@marianuniversity.edu

Office Hours: Monday 2-2:45, Wednesday 10-11, Thursday 2-3 OR by appointment

Office: Administration Building 301E

PSY 210: Applied Statistics for Social Science

What textbook do I need for this class?

We have an open source (free) textbook for this course. You can access the complete textbook on MO2 where you can download an electronic copy or request a print copy through the bookstore.

You can also access the daily readings through links within your lessons posted on MO2.

You need reliable internet access and a working knowledge of MO2. Because of the nature of technology, you need to anticipate that there are sometimes outages. **You should have a back-up plan for technology issues including internet problems and computer crashes (use a cloud service for your files!!!)**. You will also need to regularly check your university email for course updates.

What am I getting graded on (a.k.a. how will I show what I have learned)?

Your grade is a culmination of your demonstration of learning in this class. Your learning will be assessed through several assignments to give you the opportunity to demonstrate use of the course concepts in different ways.

Formative Assessment

As you are working through the material, it is important to identify the concepts you know and the concepts you don't. This allows you to know what questions to ask, or what supplemental resources to use.

Reading Quizzes: For each chapter in our text you will complete a pre-lecture quiz to engage with and learn the basics of the course content. Each quiz is based on assigned readings and optional videos. Each quiz will be timed and adaptive, meaning that when you get an incorrect answer, you can try again, but the earned points lowers for that question. You will have up to 5 attempts for each quiz. To pass a quiz, you must get an 80% or higher. You will have the ability to work ahead on the reading quizzes as needed. If you miss a quiz for any reason, you will be automatically given a zero on the quiz. There are two "drops" built in to the grading since 7/9 is all that is required for an A.

Practice: There will be eleven practice assignments posted on MO2 throughout the semester. These will be due within a week of when we cover the material in class (see MO2 for all deadlines). To earn an A, you will need to submit 10 completed (per the instructions) assignments. After the deadline, keys for the assignments will be posted. It will be up to you to check your work against the keys, but I will do my best to give feedback if it is clear that you are struggling with the material. The pre- and post-test assignments are required and failing to complete either will automatically drop you to the next grade bracket.

Excel Assignments. For each excel tutorial we have, there will be a brief accompanying assignment to practice applying the skill to a new data set. These will be due within one week of the workday (see MO2 for due dates). You must earn an 80% or higher on 4/5 of the assignments to earn an A.

.....CONTINUED ON NEXT PAGE

PSY 210: Applied Statistics for Social Science

Summative Assessment

Mastering the course material comes from incorporating feedback from quizzes, class interactions, practice, and excel assignments. You will demonstrate how well you have learned the concepts from the course in a two ways.

Case Studies. You will complete three case study assignments. These case studies will measure the extent to which you have mastered the basic skills and how well you can apply those skills in a variety of settings. A component of these case studies will include demonstrating excel skills. You may use your notes and the text to complete the exam. However, these exams should be taken individually without help from others. Gathering with friends to work on the exam together, sharing answers or exams with others, or saving exam questions and/or answers for future students does not help your learning and is collusion (a form of academic dishonesty - see below). I will be able to tell if you worked together!! To earn an A, you must earn an 85% or higher on all three. You will get one opportunity to re-do a case study with a new case after seeing your grade and meeting with me to go over which problems you missed (you will not get to see the graded case study with correct answers until after submitting your re-do).

Final Project: This class culminates in a final group project to demonstrate your overall learning of the course concepts. You will work in teams to analyze a set of real world data. You will report on the project in a written report and an oral presentation. The last three to four class periods will be dedicated to working on this project. In order to account for differences in the efforts of group members, group members will confidentially rate each other's participation at the end of the project. These ratings will be combined and will be translated into an individual participation grade, worth 30% of your grade on this assignment.

Grading:

This course will use a specifications grading system, which means that you must complete a certain number of assignments, within each assignment category to a satisfactory level to earn a particular grade for that category. The category grades are then tallied and a final grade is determined.

Your average is calculated using the following formula:

$$\text{Reading Quiz} + \text{Practice} + \text{Excel} + 2(\text{Case Study}) + \text{Final Project} / 30$$

.....CONTINUED ON NEXT PAGE

PSY 210: Applied Statistics for Social Science

Grading Cont.

Here is how you earn points for each of the five grading categories:

	A (5)	B (4)	C (3)	D (2)	F (1)	F (0)
Reading Quizzes	Earn 80% or higher on 9/11 quizzes	Earn 80% or higher on 8/11 quizzes	Earn 80% or higher on 7/11 quizzes	Earn 80% or higher on 6/11 quizzes	Earn 80% or higher on 5/11 quizzes	Earn 80% or higher on less than 5 quizzes
Practice	Submit 10/12 complete assign.	Submit 9/12 complete assign.	Submit 8/12 complete assign.	Submit 7/12 complete assign.	Submit 6/12 complete assign.	Submit fewer than 6 complete assign.
Excel Assign.	Earn 80% or higher on 4/5	Earn 80% or higher on 3/5	Earn 70% or higher on 3/5	Earn 60% or higher on 3/5	Earn 50% or higher average	Earn less than 50% average
Case Study	Earn 85% or higher on all three	Earn 80% or higher on average	Earn 75% or higher on average	Earn 65% or higher on average	Earn 55% or higher on average	Earn less than 55% on average
Final Project	90-100%	80-89%	70-79%	60-69%	50-59%	< 50%

For example, if you earn an A, B, B, D, and B respectively, your final grade would be calculated as:

$$(5 + 4 + 4 + 2*2 + 4) / 30 = 21/30 = 70\% \text{ (C-)}$$

OR

For example, if you earn an C, C, B, B, and A respectively, your final grade would be calculated as:

$$(3 + 3 + 4 + 2*4 + 5) / 30 = 23/30 = 76.7\% \text{ (C+)}$$

Letter grades are assigned as follows:

100-92.5%	A	76.4-72.5%	C
92.4-89.5	A-	72.4-69.5%	C-
89.4-86.5%	B+	69.4-66.5%	D+
86.4-82.5%	B	66.4-62.5%	D
82.4-79.5%	B-	62.4-59.5%	D-
79.4-76.5%	C+	Below 59.5%	F

PSY 210: Applied Statistics for Social Science

What will I learn about in this class?

Sampling
Levels of Measurement
Measures of Central Tendency
Measures of Variability
Normal Curve
Central Limit Theorem
Probability
Confidence Intervals
Null Hypothesis Significance Testing
One Sample Z-Test

Independent t-Test
Dependent t-Test
Chi-Square
Correlation
Regression
Ethics in Data
Excel Applications for Statistics
Reporting Statistics in APA style
Presenting Data/Research

What are the learning goals and outcomes that this course assesses?

General Education Learning Outcomes

Knowledge Acquisition:

- *Performance Indicator #2: Utilize technology to acquire information. Assessed with excel assignments.*
- *Performance Indicator #5: Demonstrate knowledge of basic facts, concepts and processes. Assessed with unit reading quizzes.*

Critical Thinking:

- *Performance Indicator #2: Critically question. Assessed with case studies.*

Psychology Program Learning Outcomes

1. Knowledge Base. *Describe and apply key concepts, principles, and overarching themes in psychology. Assessed with quizzes.*
2. Scientific Inquiry & Critical Thinking. *2.2 Demonstrate psychology information literacy. Assessed with case studies.*
3. Communication. *4.1 Demonstrate effective writing for different purposes. Assessed with final project.*

Class Learning Objectives

The overall course objective is to provide instruction about the statistics used in behavioral sciences and to provide students with an increased understanding about the application of those statistics in a variety of settings. Upon successful completion of this course students should have the ability to:

Compute and understand measures of central tendency; Recognize and create graphs.; Understand, apply, and compute correlations and linear regressions; Understand and create null and research hypotheses.; Understand and recognize normal curves and the role of probability in statistics.; Compute and understand z-scores; Understand significance testing; Understand, apply, and compute z-tests, t-tests, and non-parametric tests; Interpret outcomes of inferential statistical tests; Use Excel to complete statistics functions; Apply their knowledge in a variety of settings.

PSY 210: Applied Statistics for Social Science

Do I have to go to class?

Attendance is taken daily reported to various offices on campus. I do not grade based on attendance, but failure to regularly attend class will likely impact your ability to complete the course assessments successfully. If something comes up that prevents you from completing components of this course, you need to discuss it with me immediately. According to the published tuition rates, this class costs about \$2750. We will meet 28 times this semester so each class is worth about \$98.

What should I do if I miss a class?

I do not post slides on Mo2 because the problems are worked in class. The easiest way to get notes is to ask someone in the class. You can also make an appointment with me to get a copy of the missed notes and to go over any questions you have on the material. It will be important for you to do this in a timely manner so you can complete associated assignments on time. It is not a good idea to miss class on an excel tutorial day as this is difficult to “make-up”.

Can I turn in things late?

I understand that things happen in your lives. Because of that, **you have ONE, 48hr extension on any course assignment** (not for use on the final project or quizzes), no questions asked. If you wish to use this extension, simply send me an email 12 hrs. before or after the due date and time, to let me know that you are using your free pass. All other late work will be accepted only on a case-by-case basis.

Academic Honesty Policy (about cheating and plagiarism):

The rules and procedures dealing with academic honesty set forth in the Marian University Academic Bulletin will be followed in this class. Students are expected to have familiarized themselves with these rules and procedures. This applies to cheating, plagiarism and intentional misrepresentation of the truth. If a paper is prepared by a student for this class, it is expected that the paper will be the student's own work and that any use of the work of another in a student's paper be properly quoted and cited.

All work in this class must be your own. Here are some common examples of academic dishonesty in this class:

- Copy-pasting from a textbook or website for case-studies is plagiarism.
- Working with another student on a case-study is considered cheating.
- Working with another student, or giving another student the answers, on quizzes is considered cheating.

Students suspected of these or any other form of academic dishonesty will be notified and face consequences in this course (e.g., a zero on an assignment) and may result in a report to the Office of Academic Affairs.

PSY 210: Applied Statistics for Social Science

Where can I get help?

Office Hours. Office hours are one of the ways in which I make myself available to answer questions about this course, your academic goals, or even just a chat. Office hours means that I am in my office specifically to meet with students. These are drop-in times, so you don't need to let me know that you are coming, you just have to show up!!!!

Tutoring. Marian offers free peer tutoring through the Learning Center (2nd floor of the library). If you are struggling in this (or another) class, check out this great resource.

Mental Health. If you are struggling with your mental health and need support, Marian offers free, confidential Counseling services to all students on campus between 8am and 4:30pm. Call 920-923-8799 or 920-923-7615 to schedule an appointment or stop into room 010 in the lower level of Regina Hall for urgent needs. If you are experiencing a crisis after hours, you can call the Fond du Lac County 24-Hour Crisis Line at 920-929-3535, The National Suicide Prevention Lifeline: 1-800-273-8255, or call 911. Please let me know if you need help finding off-campus mental health resources.

Statement Regarding Accessibility Resources. Marian University will provide reasonable accommodations to qualified people with disabilities. If you feel you need accommodations to fully participate in this class, please contact Lisa Olig, Director of Accessibility Resources, at 920-923-8951.

Marian University Credit Hour Policy (or how many hours can I expect to put into this class?):

According to commonly-accepted collegiate academic practices, success in this 3-credit course requires work equivalent to a minimum of 135 hours of work; **Over 14 weeks of classes, that's more than 6 hours of class related work outside of our meeting times per week!** It will be important to plan your work accordingly and start assignments prior to their due dates in order to have enough time to complete them (and to reach out for help when needed). Work ahead when possible!! Coursework includes: lessons, discussions, assignments, quizzes, reflections, and the final project.

PSY 210: Applied Statistics for Social Science

When is stuff due?

September

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	3	4 First Day of Class Pre-test assignment due at 11:55pm	5	6	7	8
9 Introduction to Excel	10	11 Quiz 1 due <u>before class</u>	12	13	14	15
16 Excel 1 due at 11:55 pm	17	18 Quiz 2 due <u>before class</u> Measurement Assignment due at 11:55pm	19	20	21	22
23 No assignments due	24	25 Central Tendency Assignment due at 11:55pm	26	27	28	29

October

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
30 Quiz 3 due <u>before class</u> Variability Assignment due at 11:55pm	1	2 Quiz 4 due <u>before class</u> Excel 2 due at 11:55pm	3	4	5	6
7 Case study 1 due at 11:55pm	8	9 Quiz 5 due <u>before class</u>	10	11	12	13
14	15	16 Confidence Interval Assignment due at 11:55pm	17	18	19	20
21 Quiz 6 due <u>before class</u> Excel 3 due at 11:55pm	22	23	24	25	26	27

PSY 210: Applied Statistics for Social Science

November

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
28 Quiz 7 due <u>before class</u>	29	30 Z-test Assignment due at 11:55pm	31	1	2	3
4 Independent t-test Assignment due at 11:55 pm	5	6 Quiz 8 due <u>before class</u> Dependent t-test Assignment due at 11:55pm	7	8	9	10
11 Excel 4 due at 11:55pm	12	13 Quiz 9 due <u>before class</u> Case Study 2 due at 11:55pm	14	15	16	17
18 Chi Square Assignment due at 11:55pm	19	20 Correlation Assignment due at 11:55 pm	21	22	23	24
25 Final Project Workday/Make-Up Day, Excel 5 due at 11:55pm Regression Assignment due at 11:55 pm	26	27 THANKSGIVING BREAK, no class.	28	29	30	1

December

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
2 <i>Final Project Workday</i> No assignments due	3	4 <i>Final Project Workday</i> Case 3 due at 11:55pm	5	6	7	8
9 <i>Final Project Workday</i>	10	11 Presentation of Final Projects	12 Post-test due at 11:55pm	13	14	15