

PSY2100-002 Statistical Methods / Fall 2020
9:35-10:55am T/R Remote/Synchronous Online

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Course Information

Required Texts: *Statistics for People who (Think They) Hate Statistics* (7th ed; Salkind & Frey)

Prerequisite: C- or better in Math 1320 (or a higher math)

Calculator: Required (nothing fancy, just needs a square root function)

Course website: Blackboard (<http://www.dl.utoledo.edu>)

Course Description

This course provides a basic understanding of the statistics used most commonly by social scientists. Topics to be covered include summarizing data with graphs and numbers, generalizing from samples to a population, and determining the effect of one variable on another. The course will also allow you to understand research reports in social science publications and in the press. We will particularly emphasize the application of statistics, or using and interpreting the statistics (rather than the mathematical proofs underlying these statistical methods). Even students who say they have “math anxiety” can excel in this class, if they are willing to keep up with the work.

Student Learning Objectives

By the end of this class, you should be able to:

1. summarize and organize data,
2. select and calculate an appropriate statistic to decide whether a variable reliably affects another variable, or whether such findings are driven by chance,
3. critically evaluate research findings in scientific journals and in the media,
4. work with a statistical software program (SPSS), and
5. possess a basic understanding of statistics that can be built upon in future research design and statistics classes.

Class “Meetings” in Blackboard

The course will be run synchronously online. This means that we will have a “live” meeting during normal class time in Blackboard using Collaborate Ultra. The class meetings will also be recorded so that students who are unable to attend can re-watch the session. Links will be posted on the left-hand side of our Blackboard site under “Collaborate Ultra (live meetings)”. You are able to “join” the live meeting/course room 15 minutes before the start of class. Please make sure to login on time. If you have questions during the meeting, please use the chat function to either ask your question or to indicate you would like to ask a question. More information on how to join the live sessions and access recordings of the live sessions can be found here: <http://utlv.screenstepslive.com/s/student/m/56924>

Technology Requirements and Computer Skills Requirements

Technical Assistance: I am not a computer expert. Therefore, if you are having technical problems, please contact the Distance Learning Department at 419-530-8835 or toll free at 866-utoledo (866-886-5336) or by email at UTDL@utoledo.edu. Please contact them when problems arise—they want to help.

Notification of Technical Problems: If you are having problems with your computer and you are unable to notify me of this event by email, please contact me by phone. My contact numbers are listed on the top of our syllabus. Technical problems with your computer are not a legitimate reason for failing to complete assignments or exams by posted deadlines. There are many computer options available to you, such as the many University of Toledo computer labs and the computers at public libraries. To find out the hours of the University of Toledo computer labs, you can call this number: 419-530-4636. Each student is responsible for finding their own alternative methods or locations to complete assignments by the given deadlines.

SPSS. Some coursework will require SPSS (*Statistical Package for Social Sciences*) for statistical data analysis. Students can access SPSS in multiple ways through on-campus resources. For example, SPSS also is available in labs (<https://libguides.utoledo.edu/stats-software/SPSS>), for download (<https://www.utoledo.edu/it/students.html>), and remotely accessible at any time via the academic UT Virtual Lab (<http://www.utoledo.edu/it/VLab/>). General UT technology info is here: <http://www.utoledo.edu/dl/students/required-info-online-learners.html>.

Course Requirements

Exams. There will be 3 regular exams during the semester plus 1 final exam. Each of the regular exams is worth 100 points and the final exam is worth 150 points. The exams consist of a combination of multiple-choice, calculation, and essay-style questions. Each of the regular exams will cover information presented in class and on assigned readings *since* the previous exam—that is, the regular exams are non-cumulative. The bulk of the final exam is also non-cumulative, with exception of a 50-point section where you will identify what type of statistical test discussed during the semester would be used for particular examples (I will say more about this later).

Exams will be held online in Blackboard. On the relevant date listed in the schedule, I will open the exam for students to take from 8am-midnight. Students can take the exam at any point during that window of time (see schedule below for specifics). Once you log into Blackboard, go to the “Exams” tab and open up the relevant exam (e.g., “Exam 1”). Once started, you will have 3 hours to finish. The exams are open book/open notes. Further instructions on the logistics of taking the exam will be provided in Blackboard. If a student misses an exam or anticipates missing an exam (e.g., for a participatory athletic event, religious holiday, or illness), contact me (Dr. Rose) via email. Depending upon the circumstances, I may be able to extend your deadline or open up the exam on a different day of the week.

Homework Assignments. Homework is essential for success in this course. The assignments will solidify your understanding of course material. There will be 10 homework assignments worth 10 points each. Assignments will be posted on the course website 1 week prior to the listed due date. You will upload and submit homework to Blackboard prior to the start time for class on the due date. If you anticipate missing a homework assignment, notify me via email at least *one week prior* to the assignment's due date. If you are ill or have an emergency on a day that a homework assignment is due, you must notify me *before* class and be prepared to hand in your assignment as soon as is possible. If you did not hand the assignment in on time and did not contact me in advance with your excuse (as noted above), assignments will receive 2.5 points off for each class period handed in late (thus, if handed in after class is over, the assignment will be worth up to 7.5 points; if turned in 1 week late, it would be worth up to 5 points; if handed in 2 weeks late or more, the assignment would be worth 0 points). Note that some (but not all) assignments also have an SPSS (data) file that you are responsible for creating or that we provide for you. See above for links on how to access SPSS.

Grading Policy

You earn points in the class as follows:

Assignment	Possible Points
3 Regular Exams - 100 points each	300 points
1 Final Exam – 150 points	150 points
10 Homework Assignments - 10 points each	100 points
Total	550 points

Letter Grades

A	93+% ≥ 512 points	C	73-76%	402-423
A-	90-92% 495-511	C-	70-72%	385-401
B+	87-89% 479-494	D+	67-69%	369-384
B	83-86% 457-478	D	63-66%	347-368
B-	80-82% 440-456	D-	60-62%	330-346
C+	77-79% 424-439	F	< 60%	≤ 329

How to Succeed in this Course

Many students dread this statistics requirement. Many wonder why a statistics class is necessary for psychology majors. Others think back to math courses with considerable anxiety. I want you to know that I am aware that many students are nervous about this class and, above all, I want to help you succeed in this course. Moreover, I will do my best throughout the semester to convince you that it is quite natural for psychology and statistics to exist together.

Mastering the basics of statistics is much like learning a new language – it requires practice, practice, practice. New material builds on older material, and it is essential that you stay up on the class material. Here are some general strategies to consider in the course:

Attend Class

Attending class is critical for success in this course. In fact, research has shown that one of the best predictors of grades in courses is class attendance, and even the brightest students

gain more insight by attending classes regularly. This is especially important in a class like statistics, as it is helpful to consume information multiple times and in a number of different formats (e.g., reading, lectures). Moreover, there will be some course material presented in class that does not appear in the book; thus, you will need to attend to get all the information covered on exams.

Read, Study, and Take Notes Actively

Research shows that many individuals read and write passively, that is, without thinking about the meaning of what they are covering. In reading and studying textbook-type material, everyone (professors included) must read actively and as a result somewhat slowly. Research shows that learning is much more effective if new information is related to old information. Passively writing what is on the overhead screen or what is discussed in class without thinking about it will not help you understand the material.

Study the Summaries and Section Headings Before and While You Read

Summaries and headings help you mentally organize what you read. The authors did not just throw a bunch of information together randomly; they present an organized framework of ideas and information. You should seek to discover and understand their organization. Research shows that information is learned best when part of an organized framework.

Alter Your Expectations for Studying

Research consistently shows that students greatly underestimate the effort and time it takes to do a quality job of learning the new and complex material that is part of most courses. Academic experts generally agree that for a typical three-credit semester-long course, spending at least 6 hours per week outside of class working on learning is the norm for reasonable achievement.

Do the Homework Assignments

In order to facilitate your mastery of basic statistics, I have included homework assignments (in addition to the 4 exams). The purpose of the assignments is two-fold: 1) they allow you more opportunities to earn points in the course, and 2) they will give you critical practice for building your understanding of the material and facilitate use/retention of the information.

Keep up with Class Material and Ask Questions

There is a large amount of information to learn in this course, and most of the new material builds upon previously-learned material. Therefore, if you fall behind in the readings or don't understand a key concept, this will severely hurt your progress in the course. So keep up with the readings and ask questions when things are unclear!

Make Use of Available Resources. Besides attending class, reading the text, completing the homework assignments we assign, and taking the exams, make use of other resources on and off campus. Other resources include completing any exercises in the book, talking with the TA or myself during office hours, making use of online resources (e.g., <https://www.youtube.com/user/how2stats/videos>; <https://www.youtube.com/playlist?list=PL87D6C3431177ED5C>; <http://www.psychology.emory.edu/clinical/bliwise/Tutorials/>), and making use of campus resources. The latter includes tutoring in statistics at the library (<http://www.utoledo.edu/success/lec/tutoring/>) and online (<http://www.utoledo.edu/success/lec/onlinetutoring.html>).

Tentative Course Schedule
(Subject to change based on in-class announcements)

Week	Date	Topic	Reading	Assignment/Exam
1	Aug. 18	Introduction: Science and Statistics	Ch. 1	
	Aug. 20	Variables and Measurement		
2	Aug. 25	Data Organization	Ch. 4	Assignment 1 due
	Aug. 27	Data Organization and SPSS		
3	Sept. 1	Central Tendency	Ch. 2	
	Sept. 3	Variability	Ch. 3	Assignment 2 due
4	Sept. 8	Sampling, normal curve, and z-distributions	Ch. 8	
	Sept. 10	Sampling, normal curve, and z-distributions		
5	Sept. 15	Sampling, normal curve, and z-distributions		Assignment 3 due
	Sept. 17	Exam 1		Exam # 1 – Open Sept. 17, 8am to midnight
6	Sept. 22	Hypothesis Testing Basics	Chs. 7, 9	Assignment 4 due
	Sept. 24	Hypothesis Testing Basics		
7	Sept. 29	Single-sample z-tests	Ch. 10	
	Oct. 1	t-statistic and Single-sample t-tests		Assignment 5 due
8	Oct. 6	Independent Groups t-tests	Ch. 11	Assignment 6 due
	Oct. 8	Correlated Groups t-tests	Ch. 12	
9	Oct. 13	Exam 2		Exam # 2 – Open Oct. 13, 8am to midnight
	Oct. 15	Analysis of Variance (ANOVA)	Ch. 13	
10	Oct. 20	Analysis of Variance (ANOVA)		
	Oct. 22	Repeated-Measures ANOVA	Ch. 18 (p. 312)	Assignment 7 due
11	Oct. 27	Two-Factor ANOVA	Ch. 14	Assignment 8 due
	Oct. 29	Exam 3		Exam # 3 – Open Oct. 29, 8am to midnight
12	Nov. 3	Correlation	Chs. 5, 15	
	Nov. 5	Correlation & Regression	Ch. 16	
13	Nov. 10	Chi-square	Ch. 17	Assignment 9 due
	Nov. 12	Chi-square		
14	Nov. 17	Power, Sample Size, Effect Size, etc.		Assignment 10 due
	Nov. 19	Choosing the Right Statistic		
15	Nov. 24, 26	No class – Thanksgiving break week		
16	Dec. 1	Finals week – Exam 4		Exam #4 – Open Dec. 1, 8am to midnight

Academic Policies

All students at the University of Toledo must read, understand, and follow the academic policies that govern their attendance at the University. These policies include, but are not limited to, academic dishonesty, academic forgiveness, adding and dropping a course, grades and grading, and the missed class policy. Please use the following URL to read a comprehensive list of academic policies that pertain to you in this class and throughout your time at UT: <http://www.utoledo.edu/policies/academic/undergraduate/>. If you have any questions after reading through the policies, please let me know.

Collegiate Policies

Policy Statement on Non-Discrimination on the Basis of Disability (ADA)

The University is an equal opportunity educational institution. Please read [The University's Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance](#).

Students can find this policy along with other university policies listed by audience on the [University Policy webpage](#) (<http://www.utoledo.edu/policies/audience.html/#students>).

Academic Accommodations

The University of Toledo embraces the inclusion of students with disabilities. We are committed to ensuring equal opportunity and seamless access for full participation in all courses. For students who have an accommodations memo from Student Disability Services, I invite you to correspond with me as soon as possible so that we can communicate confidentially about implementing accommodations in this course. For students who have not established affiliation with Student Disability Services and are experiencing disability access barriers or are interested in a referral to healthcare resources for a potential disability or would like information regarding eligibility for academic accommodations, please contact the [Student Disability Services Office](#) (<http://www.utoledo.edu/offices/student-disability-services/>) by calling 419.530.4981 or sending an email to StudentDisability@utoledo.edu.

University of Toledo Policy Pertaining to Academic Integrity

Academic dishonesty is not tolerated. Among the aims of education are the acquisition of knowledge and the development of skills necessary for success in any profession. Activities inconsistent with these aims are not permitted. Students are responsible for knowing what constitutes academic dishonesty. If students are uncertain about what constitutes plagiarism or cheating they should seek the instructor's advice. Examples of academic dishonesty include, but are not limited to:

- Plagiarizing or representing the words, ideas or information of another person as one's own and not offering proper credit or documentation to the other person;
- Giving or receiving, prior to an examination, any unauthorized information concerning the content of that examination;
- Referring to or displaying any unauthorized materials inside or outside of the examination room during the course of an examination;

- Communicating during an examination in any manner with any unauthorized person concerning the examination or any part of it;
- Giving or receiving substantive aid during the course of an examination;
- Starting an examination before the stipulated time or continuing to work on an examination after the announced conclusion of the examination period;
- Taking, converting, concealing, defacing, damaging or destroying any property related to the preparation or completion of assignments, research, or exams;
- Submitting the same written work to fulfill the requirements for more than one course.

Other Policies

Your safety and well-being as a University of Toledo student is important to the faculty, staff, and administration; as such please take time outside of class to review the code of conduct and non-discrimination policies that apply to you as a student:

<https://www.utoledo.edu/title-ix/policies.html>. You can use this URL to view a more comprehensive list of student policies:

<https://www.utoledo.edu/policies/audience.html/#students>.

Academic and Support Services

Please follow this link (<http://www.utoledo.edu/studentaffairs/departments.html>) to view a comprehensive list of [Student Academic and Support Services](#) available to you. UT also provides a variety of academic and support services on campus to help you succeed and reach your fullest potential. Whether you need to ask a question, get help with an assignment, seek advice from a counselor, find a job or join a club, UToledo offers some help:

Tutoring: <http://www.utoledo.edu/success/lec/>

Library: <http://www.utoledo.edu/library/>

Success Coaching: <https://www.utoledo.edu/successcoach/>

Student Affairs: <http://www.utoledo.edu/studentaffairs/>

Career Services: <http://www.utoledo.edu/success/career/>

Safety and Health Services for UT Students

Please use the following link to view a comprehensive list [Campus Health and Safety Services](#) available to you as a student. It covers services related health, mental health, emergencies, and discrimination, among other things. In addition, UT provides assistance via a Food Pantry: <http://www.utoledo.edu/studentaffairs/food-pantry/>.

Special Course Expectations During COVID-19

It's important to note that based on the unpredictability of the COVID-19 virus things can change at any time so please be patience and understanding as we move through the semester. I also ask that you keep me informed of concerns you may have about class, completing course work/assignments timely, and/or health concerns related to COVID.