PSYC 2331-061
Fall 2025

Online, synchronous

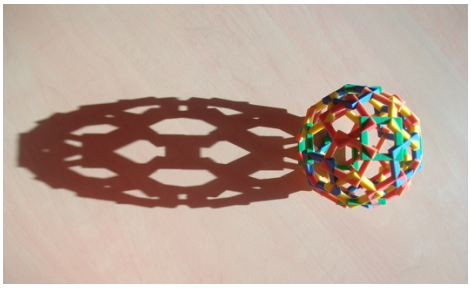
Statistics and Laboratory

Dr. Lauren Kirby

Course catalog description: An introduction to descriptive and inferential statistical methods used in psychological research. Emphasis will be on hypothesis testing with t-tests, analysis of variance, correlation, and selected nonparametric techniques.

Course meeting information: I invite you to join course meetings on Tuesday and Thursdays 9:30-10:50pm via Zoom (recorded and posted) for engaging in learning activities that help you practice course outcomes and learning objectives. The class is "flipped," meaning you need to read and view course content before class. Assignments for each module may be submitted any time after they become available and before their posted due/closure dates. There are no timed exams or quizzes, only "take-home" projects. This course requires on average 6-9 hours of work per week

Visual metaphor: For Statistics and Laboratory, I chose the metaphor of a shadow of an object from the photo "Shadows of 3D printed objects" by fdecomite (licensed under CC BY 2.0). Statistics are tools to help us learn how to predict behavior. Our models approximate reality, but are never completely accurate, much as this shadow is the same general shape as the object yet stretched out. Imagine if you only had access to the shadow to learn about the object. Such is the challenge of researchers.



CONTACTING YOUR TEAM

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Virtual Office Hours
MWF 10am or by appointment

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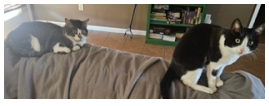
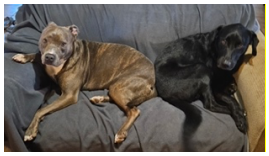




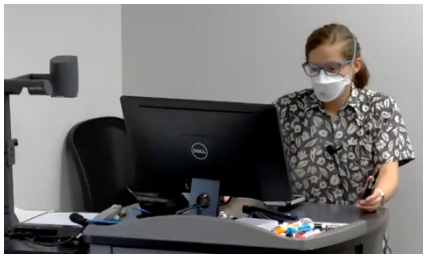
Instructor Introduction – Dr. Kirby

Hello! I am Dr. Kirby, your instructor for Cognitive Psychology. My educational background is in the biological and brain-based foundations of thoughts, feelings, and behaviors.

These days, when I take off my "Dr. Kirby" hat and am just "Lauren" at home, I enjoy hiking, lifting weights, animal fostering and rescue, reading (and listening to) novels (mostly fantasy, sci-fi, and mystery) and non-fiction books (histories, biographies, science), writing short stories, and spending too much time on *X* (Twitter). I enjoy working from home where at any given time I am likely to be spending time with any combination of my husband, two cats, two dogs, plus any foster animals we have at the time.

I am looking forward to similarly getting to know you better as we establish this learning community together for the term of this course!

My Teaching Approach



Positive reinforcement: Behaviors happen more frequently when they have been rewarded. Punishments are less effective teaching tools, so this course avoids them.

Intrinsic motivation: The types of rewards we work for matter. Working toward an internal feeling of reward is associated with longer-lasting learning than working toward external rewards. Traditional grades encourage extrinsic motivation. In my courses, attendance, grading, and makeup policies in this course are carefully designed to encourage all of us to focus on the learning instead of the points.

Growth mindset: Students who believe their abilities are fixed give up easily and learn less. Students who are comfortable with trying, making mistakes, and persevering, learn more, so I allow re-attempts on assignments.

Diversity, equity, and inclusion: All learners belong in this course and can reach the learning outcomes.

Community: We learn together: we are not in competition with one another.

Transferable skills: You can learn skills in this course that will transfer to any workplace, regardless of your future career.

Big Ideas

What are data and variables? We will learn how knowledge is produced in psychology. We will focus on data over anecdotes.

Variability: Variability (difference) is natural and can be measured.

Randomness and probability: We all intuitively misunderstand chance and randomness. Random sampling and random assignment are crucial in psychology studies, by what *are* they?

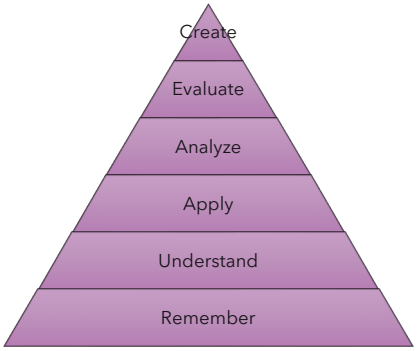
Aggregation: Although case studies have their place in psychology, the vast majority of the research we read about—and all of the data we will analyze—will average together measurements from many people to view possible trends.

Correlation is not causation: Many things occur at the same time. It does not mean the first one caused the rest.

Modeling: We use equations built on past data to predict future data. Are models are always wrong, but they can be more or less wrong!

Describing uncertainty: Statistics are tools to communicate what we don't know, and to what extent we don't know it.

Cognitive levels indicate the complexity of thinking required for the course outcome or learning objective.



Course Outcomes (Student Learning Outcomes)

These are things you should know or be able to do by the end of this course. They will consist of smaller goals, called learning objectives.

CO1: Understand major principles of probability, sampling distributions, hypothesis testing, and the statistical tests we will study. (**Understand**)

CO2: Develop first-hand knowledge of psychology research and/or practice. **(Apply)**

CO3: Discover the relationship between variables in a provided dataset as a group. (**Create)**

CO4: Develop and write up a research project based on a data source of your choice. **(Create)**

Grading Policy

Grading Breakdown by Course Outcome

CO1 (10% of grade) is assessed by Knowledge Checks; CO2 through SONA credits (see panel to the right for more information, 10%); CO3 through the Group Data Project (presentation) (40%); and CO4 through an individual data analysis paper (40%).

Makeups, Late Work, Re-attempts, and Attendance

There is no such thing as a grade of "zero" for any assessment in this course, whether it is on time, late, or missing. You can request assignment extensions for any reason at any time before the due date. I do not request documentation for excuses or extension requests. When you ask for an extension, it is good professional practice to propose your own modified due date in your first request email. If you do not request an extension ahead of the due date, but the work is still missing, I will reach out to you to create a plan for late submission and request a short reflection narrative about the consequences of late work and failing to notify the instructor. Your number of re-attempts in this course or on a given assignment is unlimited: I want you to be successful, even if it takes multiple tries. **Due such generous assessment policies, I do not offer extra credit or round grades up.**

Please note that for financial aid purposes, I am required to report to the Registrar whether you attended class at all within the first 2 weeks of class: this is a binary measurement (has attended or has not attended). If you have not attended at all within the first 2 weeks of the course, your financial aid may be adjusted accordingly. **For these purposes, in this course, "attendance" will mean having completed any assignments or activities at all (graded or ungraded)**.

Assignments

Group Data Project: This is a group project in which you will develop a research question to test and explain the relationship between variables in a provided dataset. This project will be developed in stages with instructor or TA feedback at every step. It culminates in a presentation.

Individual Data Analysis Paper: On your own, you will choose a dataset from provided resources and test a hypothesis using an appropriate analysis type. The project includes a write-up of Results and Discussion in APA style. The project is planned in stages on which you will receive feedback before proceeding to the next step.

Knowledge Checks: At least one quiz or brief writing assignment will be required in each module to assess your understanding of the material covered.

Experiential Learning: Earn 6 SONA credits or 3 counseling hours (or mix and match). Alternatives include research article summaries and/or psychology podcast summaries (which count for 2 SONA credit equivalents each).

Resources

Check the course Canvas page and your UT Tyler email daily on weekdays. Your TA and I will communicate with you through Canvas announcements, UT-Tyler email, and pages and documents linked in the "Modules" and "Assignments" tabs. Pay special attention to the Course Calendar and the Assignments and Activities descriptions. Go to Canvas settings and set up your notifications to "subscribe" to such announcements and comments from us so you will not miss anything. I give feedback on some assignments through the comments feature when you check your assignments through the "Grades" tab. You will find those in the same place you submitted an online assignment on the right-hand side reading "comments." I also may attach drafts of documents (.docx) with tracked changes and comments; make sure you know how to view tracked changes and comments in Word if they are not automatically visible for you when you first open the document.

Microsoft Office

You will need to use Microsoft Office products online (such as Word, PowerPoint, and Excel) for some assignments. **DO NOT** use alternative programs such as Apple's Pages, Google Drive/Docs, .PDFs, or any other formats. You can sign in here (https://www.uttyler.edu/offices/information-technology/office365/365-proplus-students/) using your UT Tyler Patriot credentials to use all required software, and I will post tutorials on Canvas for how to use them on your assignments. If you have any trouble signing in, do not hesitate: go to help.uttyler.edu and join a Zoom meeting during business hours to get it sorted out as soon as possible.

Zoom

You need a webcam, microphone, and familiarity with using Zoom (including functions such as joining audio, muting and unmuting video and audio, sharing your screen, and recording video). For Zoom use tips, go here: https://lms-media.uttyler.edu/fileman/DAT/BB/PDF/Zoom-Use.pdf. Webcams and microphones are built into some computers already, but not all. Please test your devices as soon as possible to make sure they work. I can set up a test Zoom call with you to help you. Even inexpensive earbuds have microphones on them, so please procure one. Please let me know if you cannot access a webcam, microphone, or any other technology for this class. This request needs to be made as early in the semester as possible so that shipping or any other logistics could be achieved on time.

Required Textbook

Cote, L. R., Gordon, R., Randell, C., Schmitt, J., & Guerra, R. (2021). *Introduction to statistics in the psychological sciences.* University of Missouri – St. Louis. Creative commons license: CC-BY-NC-SA Retrieved from https://open.umn.edu/opentextbooks/textbooks/an-introduction-to-psychological-statistics

This textbook is FREE, but I am required to put this note here in the syllabus anyway by the University. Note: A student at UT-Tyler is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Free Required Software:

The jamovi project (2025). *Jamovi* (Version 2.6). [Computer software]. Retrieved from https://www.jamovi.org

You can use a desktop version on your computer, access it on one.uttyler.edu (virtual desktop), or use the cloud version of Jamovi (jamovi.org).

Gen AI Policy

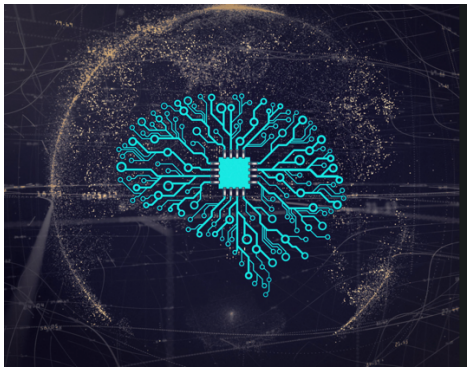


Image credit: "Machine Learning & Artificial Intelligence" by mikemacmarketing is licensed under CC BY 2.0.

Generative artificial intelligence (GenAI) tools include software that creates or remixes images or text, with popular examples such as ChatGPT—a large language model (LLM)—or DALL-E image generator. Their use is discouraged in this course.

All assignments are designed to support your learning, which GenAI assistance would undermine.

Inaccuracies are common in GenAI text output. GenAI tools do not know, remember, or reason.

The **environmental and human impact** of GenAI is costly. Some tools have even been trained using child sex abuse material!

Thus, the most ethical and responsible choice for this course is to submit only your own work without GenAI assistance.

Other Policies

Accessibility Statement
This course is designed to be accessible to all students. However, you may still have access needs that require accommodations. Feel free to let me know of any disability or other access needs informally, and be aware of formal disability documentation (for uses in other courses as well as mine) processes through our Student Accessibility Resources: https://www.uttyler.edu/academics/success-services/disability-services/.

Pregnancy and Parenting Statement
Pregnant and parenting students have the legal rights in higher education as well (Texas Laws SB 412, SB 459, and SB 597/HB 1361), including excused absences and other resources. UT Tyler encourages you to document and opt into those resources by contacting parents@uttyler.edu and completing the Pregnant and Parenting Self-Reporting Form to go through the formal accommodations process. You may also informally inform me about your needs related to pregnancy or parenting and make use of the flexibility everyone has access to in my courses regarding attendance, make-ups, and re-attempts.

If you believe you have experienced discrimination, harassment, sexual harassment/sex-based misconduct, and/or related retaliation, please know that you can contact the Title IX office or file a complaint. You may also send questions and concerns to Blake Bumbard, Title IX Coordinator, at bbumbard@uttyler.edu or by phone at 903-565-5760.

Students have various needs that go beyond the scope of my class, but I am happy to connect you with anything you may need. Feel free to let me know about anything going on in your life that is a barrier to your learning. For additional resources, such as tutoring, financial aid, the food bank, housing assistance, etc. please see the syllabus module in our Canvas course.

You are subject to university policies beyond those in my course. Feel free to let me know of questions about them: if I don't know the answer, I know how to find it. For additional university policies, such as the official accommodations policies, AI policy, student conduct guidelines, campus carry policies, etc., please see the syllabus module in our Canvas course.

Course Calendar

Target Due Dates	Module	Readings	Assignments
08/31/25	0: Getting Started	Syllabus; Using Resources	Survey Concept Map; Observation Pitch
09/07/25	1.Introduction to Data, Variables, and Models	Chapters 1 & 2	Observational Groups and Research Question
09/14/25	2. Central Tendency and Variability	Chapter 3	Data Collection Plan & CITI Training; Survey Source
09/21/25	3. Probability and Sampling Distributions	Chapter 4s, 5, and 6	Data Collection
09/28/25	4. Mid-Term Project	Assignment Guide	Observational Data Analysis
10/05/25	4. Mid-Term Project	Assignment Guide	Group Presentations
10/12/25	5. Hypothesis Testing and T-Distribution	Chapters 7 & 8	Survey Literature Search
10/19/25	6. Group Differences (2 Groups)	Chapter 9 & 10	Annotated Bibliography
10/26/25	7. Group Differences (3+ Groups)	Chapter 11	Research Question
11/02/25	8: Chi-Square Tests	Chapter 14	Outline
11/09/25	9: Correlation	Chapter 12	Survey Item Draft
11/16/25	10: Regression	Chapter 13	Method draft; Abstract draft
12/09/25	Final Module: Final Data Project	Assignment Guide	Survey Paper and Reflection

Note: All due dates are suggested to help you keep on track. The modules are designed in sequence: newer modules will only open for you if you have completed the activities in the previous ones. It would be helpful to your learning for you to allow for the instructional team to provide feedback on some assignments before completing the next ones. You also have unlimited re-attempts on all assignments. The courses closes at 11:59 on 12/09/2025. If you have a passing grade at that time, I will put in an "I" letter grade, which represents "incomplete" and you can finish your assignments after the completion of the term. We will need to meet and do some paperwork to discuss revised due dates in that case. Additionally, this course calendar and syllabus are subject to changes, which will be announced by the instructor in a timely manner.

CEP Mission and Vision Statements

CEP Mission
The mission of the CEP is to prepare competent and passionate professionals in the fields of education, psychology, and counseling; to advance knowledge and expertise; and to impact these fields locally, regionally, nationally, and internationally.

CEP Vision
The CEP will be a global leader in responding to needs in the fields of education, psychology, and counseling, with a focus on the East Texas region, by creating innovative academic and scholarly pathways and partnerships.

Grading Policy

The grading scale for this course is as follows:

A = Excellent, ≥ 99+%

B = Good, ≥ 80%, < 90%

C = Fair, ≥ 70%, < 80%

D = Poor, ≥ 60%, < 70%

F = Fail, < 60%

Artificial Intelligence (AI) Usage Policy

UT Tyler's AI Policy

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

Dr. Kirby's AI Policy

Generative artificial intelligence (GenAI) tools—software that creates new text, images, computer code, audio, video, and other content—have become widely available. Well-known examples include ChatGPT for text and DALL•E for images. The learning opportunities in this course are useful only when you complete original work rather than using generative AI tools for any portions of any assignments. I encourage you to take advantage of the learning opportunities and submit only your own work, unless otherwise indicated. I have carefully designed all assignments and class activities to support your learning. Doing your own work, without human or artificial intelligence assistance, is best for your efforts in mastering course learning objectives. If you choose to use generative AI tools, please remember that they are typically trained on limited datasets that may be out of date. Additionally, generative AI datasets are trained on pre-existing material, including copyrighted material; therefore, relying on a generative AI tool may result in plagiarism or copyright violations. Further, LLMs (e.g., ChatGPT) do not know, remember, or reason: they are "fancy predictive text." They predict which words tend to be near other words. GenAI is also circular: its training data are being corrupted by AI products themselves. Further, GenAI usage has a large environmental impact (stressing the power grids and using a lot of water), it involves hidden human costs (including exploiting low-wage labor), and GenAI image generation software has been trained on disturbing criminal material, including child sex abuse material. Finally, keep in mind that the goal of generative AI tools is to produce content that seems to have been produced by a human, not to produce accurate or reliable content; therefore, relying on a generative AI tool may result in your submission of inaccurate content. I invite you to take responsibility—instead of leaving it up to the tool—to assure the quality, integrity, and accuracy of work you submit in any college course. I am committing to the same expectations, as I am also refraining from using available AI tools in designing this course and evaluating your work. Deviations from these guidelines will be considered a violation of UT Tyler's Honor Code and academic honesty values. This policy was drafted using the UT Tyler Artificial Language for Syllabi document and Chris Heard's Generative AI Syllabus Statement Tool (which itself not an AI tool). You may find UT Tyler's general AI syllabus policy and other resources here: https://www.uttyler.edu/offices/digital-learning/ai/

Please note that Grammarly and word processing grammar suggestions are allowed; paraphrasing websites are not.