

PSY 2321 010, 020  
Research Methods & Statistical  
Analysis



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**Instructor: Dr. Stephen Lippi**

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**Phone:** (325) 486-6923

**Office:** Academic 104C; **Class Location:** A213

**Meeting times:** 010 (TR 1PM-2:15PM), 020 (TR 11AM-12:15PM)

**Office Hours:**

**11AM-4PM MW, or by virtual appointment**

*\*\*Due to COVID, I do not hold office hours in my physical office space. I am more than happy to meet with you via office phone, Zoom, Collaborate, (any virtual medium), etc. to address any office hours type issue.*

**Course Description**

This course is meant to introduce students to various experimental and non-experimental methods utilized by scientists/researchers to gather and analyze data. Numerous topics and analyses will be explored, including: the scientific method, probability, measures of central tendency and variability (*descriptive statistics*), t-tests, analysis of variance (ANOVA) (*inferential statistics*), correlation & regression, and non-parametric statistics. Statistics is like a foreign language; the more you practice it, the more you will be able to use and understand it. We will begin the semester with the basics: experimental design, reliability and validity, developing research questions, and learning how to describe, measure, and collect data. Then we will build on this foundation by exploring ways that scientists can make hypotheses and collect and run data to test these hypotheses. The second half of the semester will be devoted to running various statistical tests, learning how to interpret output, and understanding how to arrive at statistically sound conclusions. Alongside learning how to calculate these tests by hand, we will use Microsoft Excel and Jamovi, a free statistical software that analyzes data.

Class time will be devoted to working out example problems, inputting data into Excel and Jamovi, and exploring calculations and data. Lecture topics will be explored as we work through data; this is why it's important for students to have reviewed/read the material BEFORE class each week.

**Course Credits**

3 credits

**Prerequisite and Co-requisite Courses**

None.

### Prerequisite Skills

Accessing Internet websites, using ASU Library resources, accessing Blackboard and proficiency with Microsoft Word, PowerPoint, and Excel are expectations of this course.

### Student Learning Outcomes

<b>Student Learning Outcome</b> By completing all course requirements, students will be able to:	<b>Assignment(s) or activity(ies) validating outcome achievement:</b>
1) Gain a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)  a) Understand and be able to discriminate between various research methods and statistical tests used to collect and analyze data	Weekly homework assignments Module Exams “How are we doing?” Assignments
2) Learn appropriate methods for collecting, analyzing, and interpreting numerical information  a) Develop skills required to be able to analyze and interpret datasets  b) Learn how to run various statistical tests and understanding how to interpret data, outcomes, and make appropriate decisions	Weekly homework assignments Module Exams

## ***Ongoing COVID-19 precautions***

With COVID-19 still playing a significant role in our lives on and off campus, students should **prioritize their health and aim to be conscious of their fellow classmates.** *To that extent, I ask that if you are not feeling well and cannot complete your daily wellness check to **please not attend class.*** While masks are not mandated or required by Angelo State University as they were in the 2020-2021 school year, **I ask that if you can, please wear one in this class. Masks are strongly encouraged, especially indoors.** They have been shown to be effective at preventing the spread of droplets that can spread COVID-19 and other illnesses (flu). Since this class meets at full capacity, masks will also be effective at preventing spread of droplets to others near you, since social distancing cannot always be accomplished.

### **Course Delivery**

Students are responsible for reading the respective textbook chapters and studying the slides **before** arriving to class. Class time will be devoted to working out example problems, inputting data into Jamovi, and exploring the calculations and data. Lecture topics will be explored as we work through data; this is why it's important for students to have reviewed/read the material **BEFORE** class each week. Lecture PowerPoints will be delivered online via Blackboard.

### **Required Texts and Materials**

McBride, D. M. (2020) The Process of Research and Statistical Analysis in Psychology. SAGE Publications, Inc.

*Suggested:* Klein (2013). Cartoon Introduction to Statistics. Farrar, Straus & Giroux. ISBN: 9780809033591

### **Technology Requirements**

To successfully complete this course, students need to download Jamovi statistical software. Software: Jamovi (<https://www.jamovi.org>) – free and open statistical software; **each student will need to download this program to their computer to complete homework assignments and exam questions.**

Students also need to be sure to have access to Microsoft Office - this is available for *free* with your Angelo.edu email address; Microsoft office can also be accessed through the Library.

### **Assignment and Activity Descriptions**

#### **Chapter homework**

There are 5 main themes/modules throughout this semester: Developing Research questions and ethics, Probability, methodology, and descriptive stats, Inferential statistics and t tests, ANOVAs, and Correlation & regression and nonparametric statistics. There will be weekly homework assignments. These are meant to keep students engaged in course material as they

learn it; these are **due each week on Tuesday at the beginning of class via Blackboard (see due dates below)**. *These homework assignments will be submitted solely online*. These homework assignments are meant to aid in your understanding of the subject (given that you will spend time putting together conclusions from data and output) as well as provide additional practice for learning how to handle data and decide between different analyses. Each of these homework assignments will be worth 20 points. Each student is allowed to drop two homework assignments – these can either be the lowest or if a student fails to complete two. The due dates are provided in the schedule below; announcements will be made on Blackboard throughout the semester. **Any homework not turned in on time will result in an automatic 10% reduction in points (per day that it is late; after one week a zero will be submitted)**. A total of 240 points (12 homework assignments) will be from homework assignments.

## Exams

Each unit will involve a *take-home* exam. Do not confuse take-home with *easy*. These exams are meant to allow students ample opportunity to work with data and draw appropriate conclusions. Rather than have you sit in a room for 75 minutes staring at mathematical formulas, you can work on them from the comfort of your own home. This not only *should* cut down on the stress of having to solve problems within a specified amount of time, but should also allow you to work through problems at an individual pace – helping you get the problems correct. These exams will be **due to me on Tuesdays at the start of class (to be turned in via a submission link on Blackboard) (see course for specific due dates)**. These are open-note and open-book, but *not* open-friend. If you are found to have cheated on an exam, you and the person you cheated from will receive zeros, no questions asked. There are 4 non-cumulative exams and a cumulative final exam (the cumulative final will focus on the last topic we cover, correlation/regression; but will also cover material from the entire semester). A total of 5 exams will count towards your final grade. Exams 1-4 will each count for 50 points and exam 5 will be 100 points. A total of 300 points will be from exams.

## “How are we doing?” Assignments

Each *Wednesday* (by 11:59PM) you will submit a written statement as part of a discussion board post including 1) something you feel confident about and 2) something you would like more information about regarding the topic covered in class that Tuesday. This serves as an indicator of what I should spend more time on in the following class. There will be 13 of these assignments throughout the semester; the lowest 3 will be dropped. Each of these (10) will be 15 points each; a total of 150 points will be from the “How are we doing?” assignments.

## Communication

I will respond to email messages within 24 hours during working hours Monday through Friday. Weekend messages may not be returned until Monday. **All private communication must be done through your ASU email address.** Check frequently for announcement and policy changes. **In any emails to faculty, please include the course name (PSY 2321 010 or PSY 2321 020) in the subject line.**

## Grading

### Evaluation and Grades

Course grades will be determined as indicated in the table below.

Assessment	Percent/Points of Total Grade
Weekly Homework (lowest two dropped) (12)	240 points
How are we doing? Activities (lowest 3 dropped) (10)	150 points
Exams (none dropped) (1-4, 50 points each; 5, 100 points)	300 points
Total	690 points

### Grading System

Course grades will be dependent upon completing course requirements and meeting the student learning outcomes.

The following grading scale is in use for this course:

- A = (90% - 100%)
- B = (80% - 89.8%)
- C = (70% - 79.8%)
- D = (60% - 69.8%)
- F = (0% - 59.8%)

\*\*\*Important: At the end of the semester, you may be tempted to email me a variant of the following:

- “Dr. Lippi, I’m SO CLOSE to a passing grade!”
- “Dr. Lippi, what extra credit is there that I can do to boost my grade?”
- “Dr. Lippi, I have to graduate!”
- “Dr. Lippi, can you please curve my grade?”

Please do not email me at the end of the semester asking to boost your grade, change your grade, or curve your grade. This is not ethical to do. Grades are **earned** by each and every student and it is not fair to adjust **your** grade or assign **you** extra credit without doing the same for everyone.

### Extra credit (SONA Systems participation)

Since this course involves exploration of research methods and statistics, students can earn extra credit by participating in SONA system studies. Participation in these studies are important for graduate students/professors’ data collection. Each student can earn up to 30 points of extra

credit for participating in SONA studies throughout the semester. You're welcome to do more, but *you will only get credit in this class for up to 3 hours (30 points)*. For credit to be applied, you must allocate the credit to PSY 2321 010 or 020.

For additional details, see the Psychology department's "Research Opportunities" website menu. <https://angelostate.sona-systems.com/Default.aspx?ReturnUrl=%2f>

### Teaching Strategies

Students are expected to be "active learners." It is a basic assumption of the instructor that students will be involved (**beyond the materials and lectures presented in the course**) discovering, processing, and applying the course information using peer-reviewed journal articles, researching additional information and examples on the Internet, and discussing course material with their peers.

### POLICY ON LATE OR MISSED ASSIGNMENTS

Due dates and times for assignments are posted. Failure to submit your assignments on the assigned date will result in a **10 percent deduction for each day after the posted deadline**. **No papers or postings will be accepted more than one week past the assigned due date.**

### General Policies Related to This Course

All students are required to follow the policies and procedures presented in these documents:

- [Angelo State University Student Handbook](#)<sup>1</sup>
- [Angelo State University Catalog](#)<sup>2</sup>

### Student Responsibility and Attendance

Each student is expected to arrive on time for each class and attend class regularly. However, if you are not feeling well, if you are unable to get a green check on your daily wellness ASU check, if you feel **any less than 100%, please do not come to class**. We want everyone to stay safe this semester. This class is not worth you coming in sick and risking exposing others to any kind of illness - myself included. Please see the COVID-19 precautions statement above.

### Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Health and Human Services adheres to the university's [Statement of Academic Integrity](#).<sup>3</sup>

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<sup>1</sup> <https://www.angelo.edu/student-handbook/>

<sup>2</sup> <https://www.angelo.edu/catalogs/>

<sup>3</sup> <https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php>

## **Accommodations for Students with Disabilities**

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at [ADA@angelo.edu](mailto:ADA@angelo.edu). For more information about the application process and requirements, visit the [Student Disability Services website](#).<sup>4</sup> The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford  
Director of Student Disability Services  
Office of Student Affairs  
325-942-2047  
[dallas.swafford@angelo.edu](mailto:dallas.swafford@angelo.edu)  
Houston Harte University Center, Room 112

## **Incomplete Grade Policy**

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 [Grading Procedures](#)<sup>5</sup> for more information.

## **Plagiarism**

Plagiarism is a serious topic covered in ASU's [Academic Integrity policy](#)<sup>6</sup> in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft.

It is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

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<sup>4</sup> <https://www.angelo.edu/services/disability-services/>

<sup>5</sup> <https://www.angelo.edu/content/files/14197-op-1011-grading-procedures>

<sup>6</sup> <https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php>

Papers are subject to be evaluated for originality. Resources to help you understand this policy better are available at the [ASU Writing Center](#).<sup>7</sup>

### **Student Absence for Observance of Religious Holy Days**

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for [Observance of Religious Holy Day](#)<sup>8</sup> for more information.

### **Syllabus Changes**

The faculty member reserves the option to make changes as necessary to this syllabus and the course content. If changes become necessary during this course, the faculty will notify students of such changes by email, course announcements and/or via a discussion board announcement. It is the student's responsibility to look for such communications about the course on a daily basis.

### **Title IX at Angelo State University**

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex.

You are encouraged to report any incidents involving sexual misconduct to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Boone, J.D. You may submit reports in the following manner:

Online: [www.angelo.edu/incident-form](http://www.angelo.edu/incident-form)

Face to face: Mayer Administration Building, Room 210

Phone: 325-942-2022

Email: [michelle.boone@angelo.edu](mailto:michelle.boone@angelo.edu)

*Note, as a faculty member at Angelo State, I am a mandatory reporter and must report*

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<sup>7</sup> [https://www.angelo.edu/dept/writing\\_center/academic\\_honesty.php](https://www.angelo.edu/dept/writing_center/academic_honesty.php)

<sup>8</sup> <https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>



*incidents involving sexual misconduct to the Title IX Coordinator. Should you wish to speak to someone in confidence about an issue, you may contact the University Counseling Center (325-942-2371), the 24-Hour Crisis Helpline (325-486-6345), or the University Health Clinic (325-942-2171).*

For more information about resources related to sexual misconduct, Title IX, or Angelo State's policy please visit: [www.angelo.edu/title-ix](http://www.angelo.edu/title-ix).

**Course Schedule \*Subject to change at Professor's discretion**

<b>PSY 2321</b>	<b>TR 11- 12:15 (020) 1-2:15 (010)</b>					
	<b>Week of:</b>	<b>Topic:</b>	<b>Chapter</b>	<b>Homework Due: Tuesdays, start of class 11AM for Section 020 1PM for Section 010</b>	<b>HAWD Activities Due: Wednesdays, 11:59PM</b>	<b>Exams Due: Tuesdays, start of class 11AM for Section 020 1PM for Section 010</b>
	<b>18-Jan</b>	<u>Course introduction</u> Psychological Research Developing Research Questions	1, 2			
	<b>25-Jan</b>	Developing Research Questions Ethics in Psychological Research	2, 3	Homework 1	HAWD 1	
	<b>1-Feb</b>	Probability and Sampling Scientific Method	4, 5	Homework 2	HAWD 2	Exam 1 Due
	<b>8-Feb</b>	Scientific Method Descriptive Statistics	5, 6	Homework 3	HAWD 3	
	<b>15-Feb</b>	Descriptive Statistics Independent Variables & Validity	6, 7	Homework 4	HAWD 4	
	<b>22-Feb</b>	IVs & Validity	7, Review	Homework 5		
	<b>1-Mar</b>	One-factor experiments Hypothesis testing logic	8, 9	Homework 6	HAWD 5	Exam 2 Due
	<b>8-Mar</b>	Hypothesis testing logic T-tests (One-sample)	9, 10	Homework 7	HAWD 6	
	<b>15-Mar</b>	Spring break! No class :)				
	<b>22-Mar</b>	T-tests (Independent- samples)	10	Homework 8	HAWD 7	

	<b>29-Mar</b>	T-tests (Dependent-samples)	10	Homework 9	HAWD 8	
	<b>5-Apr</b>	One-way ANOVA	11	Homework 10	HAWD 9	Exam 3 Due
	<b>12-Apr</b>	Rpt. Measures ANOVA	16	Homework 11	HAWD 10	
	<b>19-Apr</b>	Factorial ANOVA	15	Homework 12	HAWD 11	
	<b>26-Apr</b>	Correlation & Regression	12	Homework 13	HAWD 12	Exam 4 Due
	<b>3-May</b>	Nonparametric stats Chi-square	13	Homework 14	HAWD 13	
	<b>May 10, May 12</b>	<b>Final Exam Due Dates</b> Tuesday, May 10 10:30AM -12:30PM (Section 020) Thursday, May 12 1:00 -3:00 PM (010)				

### **Student Evaluation of Faculty and Course**

Students in all programs are given the opportunity to evaluate their courses and the faculty who teach them. Evaluations are most helpful when they are honest, fair, constructive, and pertinent to the class, clinical experience, or course. Faculty value student evaluations, and use student suggestions in making modifications in courses, labs and clinical experiences.

Angelo State University uses the IDEA (Individual Development and Educational Assessment) system administered through Kansas State University for all course evaluations. The Office of Institutional Research and Assessment administers IDEA for the entire university, online and has established a policy whereby students can complete course evaluations free from coercion.