

# Intermediate Research Methods & Statistical Analysis

## PSY-3321-010 Spring, 2022

### Academic-201a



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**Phone:** 325-486-6124

**Office:** A 104 D

**Office Hours:** M: 10 a.m. to 12 p.m.

W: 10 a.m. to 2 p.m.

F: 10 a.m. to 12 p.m. (virtual);

Or by appointment.

## Course Information

### Course Description

This course is designed as the second half of a two-semester research methods and statistics course sequence. The half-life for knowledge of statistics especially, and to a lesser extent, research methods, is notoriously short. So don't worry if you cannot remember much statistics and research methods from your previous course. We'll begin the semester with an introduction to research methods and SPSS statistical analysis software. The statistics portion of the course will focus on comparisons of means using t-tests, analysis of variance (ANOVA), multiple linear regression, and correlation. Throughout the semester, different research methods will be introduced along with explanations of statistical techniques typically used to analyze the resulting data. The purpose of the course is to prepare you to design empirical research, analyze data using SPSS for Windows statistical software, and communicate the results of data analysis. Ideally, the course will help you become more skilled as a critical evaluator of social science research as well as research in general which is often misrepresented in the popular media. The course will also prepare you for the seminar in psychological research by helping you to develop the skills necessary to conduct and disseminate your own research.

## COVID-19 information

COVID-19 continues to significantly impact every sector of our lives. Angelo State University no longer mandates the wearing of masks but does require completion of the wellness check prior to coming to campus or leaving their residence hall. Current research on the COVID-19 virus indicates there is a significant reduction in the potential for transmission of the virus from person to person by wearing a mask/facial covering that covers the nose and mouth areas. I encourage you to safeguard your health and of those around you by wearing a mask in the classroom where social distancing is not always possible. If you fail the daily wellness check, please don't come to class but let me know as soon as you can.

## Course Credits

3 credits

## Prerequisite and Co-requisite Courses

PSY-2321

## Prerequisite Skills

Accessing Internet websites (including Blackboard), use of ASU Library resources, and proficiency with Microsoft Word and/or PowerPoint are expectations for this course.

## Student Learning Outcomes

<b>Student Learning Outcomes</b> By completing all course requirements, students will be able to:	<b>Assignment(s) or activity(ies) validating outcome achievement:</b>
Utilize a variety of research methods	Homework, exams and in-class activities.
Conduct statistical analyses on a computer using SPSS for windows or JAMOV	Homework, exams and in-class activities
Interpret the output file for each statistical analysis performed in this course	Homework, exams and in-class activities

## Course Delivery

This is a face-to-face course with learning resources and supplemental materials posted in Blackboard.

## Required Texts and Materials

Top Hat

We will be using the Top Hat ([www.tophat.com](http://www.tophat.com)) classroom response system this semester. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. Additionally, we will be using the custom-built interactive textbooks “Research Methods in Psychological Science” and “Statistics for Social Sciences” for this course. Don’t panic about having two textbooks worth of material! We will be selectively using information from both books.

If you haven’t started already, you can visit the Top Hat Overview (<https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

An email invitation has been sent to you by email, however, if you did not receive this email you can register by simply visiting our Top Hat course website: TBA

Note: our Course Join Code is TBA

Top Hat may require a paid subscription, and a full breakdown of all subscription options available can be found here: [www.tophat.com/pricing](http://www.tophat.com/pricing).

Don’t worry if you don’t see any content in the course right away, I will make it available to you as we progress through the semester.

Should you require assistance with Top Hat at any time, because they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email ([support@tophat.com](mailto:support@tophat.com)), the in-app support button, or by calling 1-888-663-5491.

## **Recommended Texts and Materials**

Students find it useful to rent a copy of IBM SPSS (student version) for the semester. JAMOVİ is a similar program that student also use and is a free open-source program. I do not provide technical support for either of these programs. SPSS is provided on campus at most accessible computer stations (computer labs and library) but JAMOVİ is not provided. If you plan on working at home with either program, the following section on what is needed for online classes is a good place to determine if your home computer is ok to use.

## **To participate in one of ASU’s distance education programs, you need this technology:**

- A computer capable of running Windows 7 or later, or Mac OSX 10.8 or later
- The latest version of one of these web browsers: internet Explorer, Firefox, or Safari
- Microsoft Office Suite or a compatible Open Office Suite
- Adobe Acrobat Reader
- High Speed Internet Access
- Ethernet adapter cable required (wireless connections can drop during tests and

- Collaborate sessions)
- Webcam

Refer to Angelo State University's Distance Education website for further technology requirements: [Angelo State University's Distance Education Website](#)

## Topic Outline (Subject to change at the Professor's discretion)

This course will be organized, broadly, in the following way. This class is adaptive to the individual class dynamic. In other words, the pace of the class is determined largely by how the class is performing. Therefore, there are no specific dates listed on the schedule below. I will make announcements throughout the semester about specific assignments and when exams will be given and when they are due.

\*schedule is subject to change at the discretion of the instructor

Week	Topic(s)
<b>Weeks 1-2</b>	What are you curious about? What events, behaviors, activities, inexplicable actions have made you wonder ... why? <b>(Chapters 1, 2, &amp; 3)</b> Variables. Descriptive Methods <b>(Chapter 14)</b> . Operational definitions <b>(Chapter 2)</b> .
<b>Weeks 3-4</b>	Descriptive Statistics Using SPSS: Scales of Measurement, Measures of central tendency, Measures of variation <b>(Chapter 14)</b> Types of distributions: frequency and probability, z-scores <b>(Chapter 15)</b>
<b>Weeks 4-5</b>	Experimental Designs: Between-participants, Correlated Groups, Confounds. Randomized and quasi-experimental designs (manipulated vs. non-manipulated independent variable) <b>(Chapters 9, 10, 13)</b>
	<b>Exam 1</b>

<b>Weeks 6-7</b>	<p>Hypothesis Testing and Inferential Statistics Using SPSS:</p> <p>t Test single sample: One-Tailed, Two-Tailed</p> <p>t Test for independent groups</p> <p>t Test for correlated groups</p> <p><b>(Chapter 15)</b></p>
	<b>Exam 2</b>
<b>Weeks 7-8</b>	<p>Experimental Designs with More Than Two Levels of an Independent Variable</p> <p>Between-Participants Designs</p> <p>Calculation of One-Way Randomized ANOVA Using SPSS <b>(Chapter 11)</b></p> <p>Interpreting the SPSS output for One-Way ANOVA</p> <p>Graphing the Means</p> <p>Effect Size: Eta-squared (<math>\eta^2</math>)</p> <p>Post hoc comparisons of means: Tukey's- Post Hoc Test; t-test and the Bonferonni adjustment of alpha</p>
<b>Weeks 8-9</b>	<p>Correlated-Groups Designs <b>(Chapter 10, 11)</b></p> <p>Calculation of One-Way Repeated Measures ANOVA Using SPSS</p> <p>Interpreting the SPSS output for One-Way Repeated Measures ANOVA</p> <p>Assumptions</p> <p>Graphing the Means and Effect Size</p> <p>Eta-squared (<math>\eta^2</math>)</p> <p>Paired Samples t-tests</p> <p>Bonferonni adjustment</p>
<b>Weeks 9-12</b>	<p>Factorial Designs (More Than One Independent Variable) <b>(Jackson 11)</b></p> <p>Main Effects and Interaction Effects</p> <p>Calculating Two-Way Between participants ANOVA Using SPSS</p> <p>Assumptions</p> <p>Post-Hoc Comparisons using T-test and Bonferroni adjustment</p> <p>Assumptions</p> <p>Post-Hoc Comparisons using T-test and Bonferroni</p>

	<b>Exam 3</b>
<b>Weeks 13-15</b>	Correlation Methods & Statistics: Correlation coefficient
	<b>Exam 4</b> (Due 5-12-2022 by 10 a.m.)

**Exams.** There will be one in class exam and three take home exams. Exams will focus on the material immediately preceding them. So, strictly speaking, the exams are not cumulative. However, understanding statistics is cumulative; topics presented later in the course will build upon topics presented earlier in the course. If you do not actively strive to learn early topics you will not understand later topics. Therefore, I encourage you to work to keep current with the topics presented in class and to not fall behind on your homework assignments. The format of each exam will be computational problems and questions regarding conclusions of the computational problems and questions (multiple choice/short answer) concerning research design. Each exam will be worth 100 points.

**Homework Assignments.** Typically, early assignments will involve research design, independent variables, operational definitions, confounds, validity, etc. while later assignments will consist of a data analysis using SPSS for Windows, and a written report of the results. Homework assignments be worth 5 pts each. As with the exams, since you will have more than one day to complete an assignment, there will be no makeup assignments, nor will late assignments be accepted.

**FINAL COURSE GRADE.** Your final grade will be based on a certain percentage of the total possible points: A= 90-100%, B = 80-89.9%, C = 70-79.9%, D = 60-69%, F = below 60%.

## **Communication**

Faculty will respond to email and/or telephone messages within 24 hours during working hours Monday through Friday. Weekend messages may not be returned until Monday.

**Written communication via email:** All private communication will be done exclusively through your ASU email address. Check frequently for announcements and policy changes. In your emails to faculty, include the course name and number (Intermediate Statistics 3321) in the subject line.

**Virtual communication:** Office hours and/or advising may be done with the assistance of the telephone, Collaborate, Skype, etc.

## **Student Responsibility and Attendance**

Students are expected to attend class, take notes, and seek clarification when the material is not understood. A *small* portion of your grade is reflected by your attendance and participation; however, poor attendance of this class usually results in a failing grade. Why? If you are not in class participating, you not only miss important lecture material, you will most certainly miss spontaneous activities (team Jeopardy games, etc.). If you don't come to class AND ask questions, especially when confused, failure is the typical result.

### **Extra Credit.**

Opportunities for earning extra points may be available during the semester. No more than 3 credits (15 extra points or 5 points per credit) may be accumulated. To access available research opportunities and earn extra credit, students must create an account on the web at <http://angelostate.sona-systems.com> (see the section entitled "Research Opportunities" on the Department webpage for instructions).

Often, I am asked at the end of the semester after exams and all other material has been turned in, the following question or version of it; "Is there anything I can do to improve my grade, extra credit? Anything at all? I won't graduate if I don't pass this class!" The answer to all of these questions is simply, No. There is nothing I can ethically do at this point in the semester. It is fundamentally unfair to students that you received special privileges or points that they did not receive. Do not even ask.

When should you ask about your grade and/or performance? When you are concerned or need clarification at any time during the semester. Naturally, you should ask if there may be an error of calculating your final grade. Lastly, I expect and want you to come to my posted office hours when you have any question about the class, need help, or just want to visit. If you can't make it during my regularly scheduled office hours you should email me to see if we can arrange an alternative meeting time. I care about your success in this, and all of your courses. I cannot help you, however, if I am unaware of the problem. Please utilize the resources at your disposal and let me help you when you need it.

## **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>i</sup>

## **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>ii</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>iii</sup> for more information.



## **Plagiarism**

Plagiarism is a serious topic covered in ASU's [Academic Integrity policy](#)<sup>iv</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.

In your discussions and/or your papers, 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.

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

## **Copyright Policy**

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

## **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 Attnangelo 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 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).

# 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.

## End of Syllabus

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

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

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

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

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

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