East Texas A & M University

EDAD 604 -Intermediate Graduate Statistics
Spring 2026
East Texas A & M University

INSTRUCTOR INFORMATION

Instructor: Mack Hines, Ed.D
Office Location: Commerce Campus, Frank Young Education North, Room 205
Office Hours: TBD (As needed upon request.)
Professor's Personal Cell Phone: 832-585-2731
University Email Address: Mack.Hines@etamu.edu
Preferred Form of Communication: Email
Communication Response Time: 24-48 Hours

Required Text

Salkind, N. J., & Frey, B. B. (2019). *Statistics for People Who (Think They) Hate Statistics* (7th ed.). Thousand Oaks, CA: Sage.
(Bundled with the Resource Study Guide for Education).
A free companion website is available to support student learning at **edge.sagepub.com/salkindfrey7e**. This site includes datasets used in the textbook, practice quizzes, flashcards, instructional videos, and selected journal articles to reinforce course concepts.

Required Software

Students are required to use **Intellectus Statistics** for data analysis and interpretation throughout the course.

Subscription Options

Students and/or faculty must purchase an Intellectus subscription using the Department of Education Leadership access links below:

- **One-Year Access (Statistics Application and Course):** $185.50
- **Six-Month Access (Statistics Application Only):** $81.25

(Access links are provided by the department and must be used for course enrollment.)

Account Setup Instructions

1. If you do not already have an account, select **"Create one today."**
2. Use any valid email address to create your Intellectus account.
3. After purchasing your subscription, **all logins must be completed through the Intellectus website**: **https://www.intellectusstatistics.com**

Intellectus Statistics will serve as the primary analytic environment for the course, supporting test selection, assumption checking, data visualization, and interpretation of statistical results.

Course Description
This course prepares EdD students as **scholarly practitioners** to use applied quantitative methods to investigate and address complex **Problems of Practice (PoPs)** in their professional contexts. Grounded in the Carnegie Project on the Education Doctorate (CPED) framework, the course emphasizes statistics as a **decision-support tool for inquiry, improvement, and impact**, rather than abstract computation.

Students will:

- Frame PoPs as researchable, high-leverage inquiry questions.
- Select and interpret statistical methods aligned with **action research, improvement science, evaluation, or design-based research**.
- Analyze evidence ethically and responsibly to inform practice.
- Communicate statistical findings effectively to stakeholders in professional contexts.

By the end of the course, students will be equipped to use statistics to inform their **Dissertation in Practice (DiP)** work and ongoing professional leadership.

Course Learning Outcomes

Upon successful completion, students will be able to:

1. Frame **Problems of Practice** as inquiry-driven questions for applied research.
2. Translate practice-based questions into **testable hypotheses**, aligned with applied methodologies.
3. Evaluate statistical assumptions and uncertainty to determine whether analyses are appropriate for **real-world decision-making**.
4. Select, justify, and interpret statistical analyses to support **action research, improvement science, evaluation, or design-based research**.
5. Analyze evidence of change, difference, or relationship to inform **improvement initiatives**.
6. Communicate findings to practitioners and stakeholders, translating statistical evidence into **actionable recommendations**.

Course Scope & Sequence

Chapter	Topic & Activities	CPED Focus	Outcomes
1.Orientation	Course orientation, CPED principles, introduction to PoPs and DiP, Intellectus overview	Introduces students to the scholarly practitioner paradigm; emphasizes framing real-world Problems of Practice (PoPs) and linking statistical learning to applied EdD impact	Students articulate their personal PoP and reflect on its relevance, demonstrating initial alignment of research and practice.
2.Chapter 7 – Hypotheticals and You: Testing Your Questions	Translating PoPs into null/alternative hypotheses, defining variables, drafting inquiry questions	Emphasizes turning real-world PoPs into testable hypotheses; integrates applied statistical reasoning with practice-focused decision-making	Students develop 2–3 inquiry questions with aligned null and alternative hypotheses that directly address a real-world PoP.
3.Chapter 8 – Are Your Curves Normal? Probability and Why It Counts	Probability distributions, normality, independence, variance homogeneity, visualization of distributions	Builds understanding of uncertainty and assumption checking; supports ethical, applied analysis in practice settings	Students evaluate data assumptions and visualize distributions in Intellectus, demonstrating applied probabilistic reasoning for their PoP.
4.Chapter 9 – Significantly Significant: What It Means for You and Me	Statistical significance, p-values, confidence intervals, effect sizes	Connects statistical significance to practical decision-making in educational contexts; emphasizes distinction between statistical and real-world impact	Students interpret p-values, confidence intervals, and effect sizes to make applied recommendations for their PoP, demonstrating critical, data-informed decision-making.
5.Chapter 10 – t(ea) for Two: Tests Between Independent Groups	Independent-samples t-tests	Enhances ability to evaluate interventions and outcomes in applied settings; links data interpretation to professional practice improvements	Students conduct independent t-tests and produce applied interpretations that compare two groups for evidence-based decision-making in PoPs.
6.Chapter 11 – t(ea) for Two (Again): Tests Between Related Groups	Paired/repeated-measures t-tests; longitudinal comparisons	Focuses on longitudinal PoP analysis; emphasizes design-driven decisions and interpretation of change over time	Students perform paired t-tests and interpret pre-post changes to evaluate intervention effectiveness over time.
7.Chapter 12 – Two Groups Too Many? Try Analysis of Variance	One-way ANOVA, between- and within-group variance, post-hoc analysis	Supports evaluation of multiple interventions; emphasizes professional judgment in selecting and interpreting analyses for complex PoPs	Students conduct one-way ANOVA with post-hoc comparisons, producing applied interpretations for multiple program or group effects.
8.Chapter 13 – Two Too Many Factors: Factorial ANOVA	Factorial designs, main effects, interaction effects, applied interpretation	Encourages understanding of multifactorial problems; links statistical interactions to systemic educational practice	Students perform factorial ANOVA, interpret main and interaction effects, and generate actionable insights for complex PoPs.
9.Chapter 14 – Cousins or Just Good Friends? Correlation	Correlation analysis, identifying spurious relationships, scatterplots	Promotes critical evaluation of relationships between variables; emphasizes practical interpretation and causation caution	Students analyze correlation matrices, interpret relationship strength/direction, and provide applied recommendations for their

			PoP.
10.Chapter 15 – Predicting Who'll Win the Super Bowl: Linear Regression	Linear regression, predictive modeling, coefficient interpretation	Develops applied predictive skills; distinguishes prediction from causation in real-world practice	Students construct regression models, interpret coefficients, and forecast outcomes to inform data-driven interventions.
11.Chapter 16 – What to Do When You're Not Normal	Nonparametric methods: chi-square, Mann-Whitney, Kruskal-Wallis	Promotes methodological flexibility; ensures ethical, responsible analysis when assumptions are violated	Students select and justify nonparametric tests, producing valid interpretations for data that violate parametric assumptions.

GRADING
Evaluation

Requirement	**Value**
Weekly Topic Engagement	**40%**
Specialized Assignments	**60%**

Final grades in this course will be based on the following scale:
A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 60%-69%
F = 59% or Below
Total points corresponding to the final letter grades
A = 451- 500 Points
B = 401- 450 Points
C = 351- 400 Points
D = 301- 350 Points
F = 300 & > Points

Please Note: While students may receive numerical grades for various assignments listed in the syllabus based on the criteria provided by the instructor and which contribute to an overall grade average represented in the breakdown listed above, these grades are to provide feedback to students and to guide the instructor in assessing student work. The final grade awarded for the course, however, will be at the sole discretion of the instructor. No late work will be accepted. Any work submitted in D2L will be considered your final product and can be graded before the deadline

Technology Requirements and Course Access

All course sections offered by **East Texas A&M University** are supported through the **myLeo Online Learning Management System (LMS)**. Students are responsible for ensuring they meet all system and browser requirements for Brightspace and any integrated tools used in the course.

System Requirements and Support

- Brightspace platform requirements and browser support are available through the Brightspace Community.

- Courses using YouSeeU or other virtual classroom tools require compatible hardware, software, and internet access.

Access and Navigation
Students must use their **Campus-Wide ID (CWID)** and password to access the course. Assistance with CWID or password issues is available through the **Center for IT Excellence (CITE)** at **903-468-6000** or via email at **helpdesk@etamu.edu**.
Reliable access to a computer and internet connection is essential. Personal technology issues do not excuse missed or late coursework. Students are expected to maintain a backup plan for access, such as alternative devices, public libraries, campus computer labs, or other available resources.

Communication and Technical Support

Students experiencing difficulty with course content should contact the **instructor directly**. Email is the preferred method of communication during the week, and messages are checked regularly. Appointments for meetings may be scheduled via email, and additional contact options may be available if needed.
For technical issues related to Brightspace, students should contact **Brightspace Technical Support** at **1-877-325-7778** or access support resources through the Brightspace Community website.

Course Procedures and Expectations
Attendance and Participation
This graduate-level course emphasizes active engagement. Students are expected to participate consistently in discussions, projects, journaling, and other learning activities throughout each module. Staying current with the course schedule is essential, as learning activities build upon one another.

Examinations
Examinations assess students' ability to apply course concepts through analysis and synthesis. Responses should demonstrate the application of knowledge to leadership scenarios rather than rote recall.

Assignments
Assignments and submission instructions are available within the weekly modules in D2L. Unless otherwise specified, written assignments should be submitted electronically through the D2L dropbox in the required file format.
Syllabus Changes
The syllabus serves as a guide and may be revised as needed to support student learning or address instructional needs. Any changes will be communicated in advance.

University Policies and Student Responsibilities
Student Conduct
Students are expected to adhere to standards of professional and respectful behavior that support a positive learning environment. Expectations are outlined in the **Student Guidebook**, and

students should also follow established **netiquette guidelines** when participating in online discussions.

Attendance Policy
University attendance policies are governed by **Procedure 13.99.99.R0.01**, available on the University website.
Academic Integrity

East Texas A&M University upholds high standards of academic honesty. Academic dishonesty—including plagiarism and unauthorized assistance—is subject to disciplinary action in accordance with University policy. Separate procedures apply to undergraduate and graduate students, as outlined in official University documentation.

Use of Artificial Intelligence
The University recognizes that certain uses of Artificial Intelligence tools may be permitted at the discretion of the instructor. Any use of AI tools must be **clearly documented**. Undocumented use constitutes academic dishonesty. Regardless of tool use, students remain fully responsible for the content, accuracy, and integrity of all submitted work.

Accessibility and Campus Resources
Students with Disabilities
In compliance with the **Americans with Disabilities Act (ADA)**, students requiring accommodations should contact the **Office of Student Disability Resources and Services**, located in the Velma K. Waters Library, Room 162. Services are confidential and designed to support equitable access to learning.

Nondiscrimination Statement
East Texas A&M University complies with all federal and state nondiscrimination laws and maintains a learning environment free from discrimination and retaliation.

Campus Concealed Carry
Texas law permits licensed individuals to carry concealed handguns in designated campus locations, subject to University rules and state law. Open carry is prohibited on campus. Violations should be reported to University Police.

Student Mental Health Support
The **Counseling Center**, located in the Halladay Building, Room 203, provides counseling services, educational programming, and crisis support. Students have 24/7 access to crisis services by calling **903-886-5145**.