

EDUC 5301.060: Stats and Research Methods for the Learning Sciences

A. Course Logistics

Term: Fall 2025. Aug 25th, 2025 – Dec 13th, 2025

Instructor: Dr. Woonhee Sung

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Office Address: BEP 243, School of Education, 3900 University Blvd. Tyler, TX 75799

Office Hours: By appointment and/or Tues & Thurs 1:30-3:00pm. In-person and virtual available. For virtual meeting, you will use this [Zoom](#) link.

Class time: Online

Email: wsung@uttyler.edu (Best way to contact)

Communication Policy: Students may email any time when a question arises. Please note for email messages, I typically respond within 24-48 hrs. Weekends may vary. Please indicate course title **[EDUC5301]** in the title line.

Last day to Withdraw: November 3, 2025

B. Course Overview

This course is designed to help students learn the basis of data analysis, including the descriptive and inferential statistical procedures that are commonly used in learning sciences research. Students will gain competence in the evaluation of research reports and the development and planning of research proposals.

C. Student Learning Outcomes

1. Understand basic statistical techniques and how to use them.
2. Identify and discuss different types of research methodology and their uses.
3. Evaluate research methods from published reports.
4. Review and Synthesize available literature regarding a research question.
5. Apply knowledge of research methods to the evaluation of research reports.

D. Required Textbooks and Readings

Exploring research (9th Edition). Salkind, N. J. (2017)

ISBN-13: 9780134416588

or

Exploring research (8th Edition). Salkind, N. J. (2009)

ISBN-10: 020-509-3817

ISBN-13: 978-020-509-3816

Available from the UTT bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Note: Students can use both 8th Edition (2009) or 9th Edition (2017) for this course because the campus bookstore may be unable to carry the 8th Edition.

E. Course Projects, Requirements and Grading

Students will be required to complete a number of assignments over the duration of the course. You may earn a total of 50-100 points based on your performance on the criteria listed below.

1. IRB Training (5%)

Students in this course will complete an online training module related to Ethical Research practices regarding Human Subjects. Detail guidelines are on the Assignment tab at Canvas. Due date of the training is posted under Week 4 module.

2. Participation in Discussion and Contribution to SONA research (15%)

Students will be expected to participate in online tasks, SONA research credits, and contribute to class discussions throughout the semester. Also, a couple of discussion posting activities will be required to get the full credit of participation.

4. Quizzes about on-line lecturing (20%)

DURING taking on-line lectures for each content, you will be asked to take an online quiz. Each quiz will consist of a mix of short answer and multiple-choice questions. You will have 10 minutes for each quiz and total 9 quizzes for this course. Students will have TWO attempts for each quiz and the highest score will be kept. Quizzes must be taken by the Sunday night (see due dates on the schedule below).

5. Journal summaries (25%)

One of the major purposes for this course is to learn how to read a research paper PROPERLY. Students will be expected to summarize 4 related journal articles and construct a synthesis paper of the connectedness of these articles. Students can choose the topic of their choice and be consistent with the topic throughout the semester. Guidelines are posted on CANVAS for each assignment. **Late work is not accepted without prior permission from the instructor.**

6. Exams – Midterm & Final (15%)

There will be mandatory midterm and final exams. The exams will consist of a mix of short-answer and multiple-choice questions.

7. Synthesis Paper (20%)

The final synthesis paper is due toward the end of the course. You will have to develop well-formulated research questions with hypotheses and provide the literature review of the articles (4-6 articles) you've read this semester. A specific rubric will be posted under the module.

Grades will be assigned as follows:

- | | |
|---|-----------|
| A | 90 - 100% |
| B | 80-89% |
| C | 70-79% |

D	60-69%
F	Below 60%

F. Late Work Policy

Unless otherwise stated, all work will be completed and turned in on the day, and by the time it is due. Late assignments without prior, written permission from the instructor or without the presence of documentable (by you), extenuating circumstances will result in a lowering of the assignment grade. If you have gotten written instructor permission, print out the email and attach to your work (in the comment box). It falls on you to present your documentation in a professional manner.

G. Tentative Schedule of Due Dates and Activities

*The instructor reserves the right to change assignments and due dates to meet the needs of the class. Every effort will be made to provide reasonable notice to students of no less than 24 hours and will be communicated via Announcements and/or class E-mail.

*Details will be posted in each module for each week's activities.

*I will have each week's module up BY Monday at 5pm (or before).

*All student work for a given week is due the following Sunday BY 11:59pm (or as specified in each module)

*Final Version of Weekly Assignments in Module: The final version of this course's activities and assignments will be in each week's Module folder

Date	Reading Chapters	Quiz/To-Dos
Week 1	Introduction Chapter 1	No Quiz Research topic posting
Week 2	Chapter 2	Chapter 2 Quiz
Week 3	Chapter 3a & 3b	Chapter 3 Quiz Journal summary 1
Week 4	Chapter 4	Chapter 4 Quiz IRB Training Due
Week 5	Chapter 5	Chapter 5 Quiz
Week 6	Chapter 6	Chapter 6 Quiz Journal Summary 2 Phase 1
Week 7	Midterm	Midterm
Week 8	Chapter 13 & APA format	Chapter 13 Quiz Journal Summary 2 Phase 2

Week 9	Chapter 7	Chapter 7 Quiz
Week 10	Chapter 8	Chapter 8 Quiz Journal Summary 3
Week 11	Chapter 9	Chapter 9 Quiz Journal Summary 4
Week 12	Chapter 10	Chapter 10 Quiz
Week 13	Chapter 11	Chapter 11 Quiz Journal Synthesis
Week 14	Chapter 12	Chapter 12 Quiz
Week 15	Final	Final Exam

Note: This syllabus is subject to change based on the needs of the class.

H. Tips for Success in this Course

1. Participate. You should engage deeply, ask questions, and discuss the course content with your peers. You can learn a great deal from discussing ideas and perspectives with your peers and me. Participation can also help you articulate your thoughts and hone your critical thinking skills.
2. Manage your time wisely. I understand that we are all extremely busy. Therefore, it is best to carve out time to work on this course. You need to allocate approximately 8-10 hours per week to enable you to dive into the course content, participate in discussions with your colleagues in this course and me, and work on assignments.
3. Log in to our course regularly, at least 2 to 3 times a week. This will help you absorb information in smaller pieces, and you'll have more time for thinking, which is critical in this course, and working with different artificial intelligence tools.
4. Stay caught up. This course is only seven weeks long. If you get behind, it can be challenging to catch up, and it won't be a pleasant learning experience. Learning shouldn't and doesn't have to be painful.
5. Use Canvas notification settings. Let the features in Canvas help you with your time management. You can receive timely notifications in your email or via text. Be sure to enable notifications to be sent instantly or daily. (See the Canvas Notification Guide).
6. Communicate with me. Let me know if you need help or if something is happening in your life. Please do not wait until it is too late to recover. I want you to be successful in this course and to get to cheer for you at graduation!

I. Artificial Intelligence Statement

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 is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

In this course,

*You may use AI programs e.g. ChatGPT to help generate ideas and brainstorm. However, you should note that the material generated by these programs may be inaccurate, incomplete, or otherwise problematic. Beware that use may also stifle your own independent thinking and creativity.

**You may not submit any work generated by an AI program as your own. If you include material generated by an AI program, it should be cited like any other reference material (with due consideration for the quality of the reference, which may be poor).

***Any plagiarism or other form of cheating will be dealt with severely under relevant UT Tyler policies.

College of Education and Psychology (CEP) Vision and Mission

Core Purpose of the College of Education and Psychology

To prepare competent, caring, and qualified professionals in the field of education, psychology, and counseling; to foster discovery; and to advance the knowledge base in our respective disciplines.

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.

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.

UT TYLER'S SCHOOL OF EDUCATION STANDARDS FOR EDUCATOR PREPARATION PROGRAMS

Texas Education Standards: The School of Education are committed to teaching and implementing the Texas Educator Standards at the highest level. The School of Education faculty use the Texas Education Standards, along with the Interstate New Teacher Assessment

and Support Consortium (InTASC) standards used by educator preparation programs throughout the United States.

The list of Texas Education Standards can be accessed [here](#).

Access the Code of Ethics and Standard Practices for Texas Educators can be accessed [here](#).

UNIVERSITY POLICIES

UT Tyler Honor Code

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

For a full list of university policies including information related to the topics listed below, click [here](#).

- Students Rights and Responsibilities
- Campus Carry
- Tobacco-Free University
- Grade Replacement/Forgiveness and Census Date Policies
- State-Mandated Course Drop Policy
- Disability Services
- Student Absence due to Religious Observance
- Student Absence for University-Sponsored Events and Activities
- Social Security and FERPA Statement
- Emergency Exits and Evacuation
- Student Standards of Academic Conduct

UT Tyler Resources for Students:

- UT Tyler Writing Center (903.565.5995), writingcenter@uttyler.edu, <http://www.uttyler.edu/writingcenter/>
- UT Tyler Tutoring Center (903.565.5964), tutoring@uttyler.edu, <https://www.uttyler.edu/tutoring/>
- The Mathematics Learning Center, RBN 4021, This is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
- UT Tyler Counseling Center (903.566.7254) <https://www.uttyler.edu/counseling/>

[University Guidelines, Links and Policies](#)