



THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
DEPARTMENT OF MATHEMATICAL SCIENCES
¡BIENVENIDOS (WELCOME)!

note: From the top of <http://www.math.utep.edu/Faculty/lesser/schedule.html>, you can access this syllabus if you misplace yours, want to explore its links, or see any updates to it. Syllabus is subject to modification by instructor to meet course needs, especially if there are unexpected disruptions or changes in class size, resources, student backgrounds, etc.

Course Number: MATM 5361-01 (CRN# 17131)

Course Title: (Qualitative) Research Methods in Mathematics Education

Credit Hours: 3

Term: Fall 2017

Prerequisite: MATH(MATM) 5360

Course Fee: none

Course Meetings & Location: TTh 5-6:20pm in Bell 130 (or 130A – bring your laptop on the 130A days). If there's a major disruption (e.g., H1N1 epidemic, subzero weather, etc.), be prepared to maintain course progress via alternative means (e.g., phone, Internet, our Blackboard course shell, etc.) and check your email (especially your UTEP account) regularly. UTEP set our finals week meeting time as Thurs., Dec. 8, 4-6:45pm.

Instructor: Dr. Larry Lesser (rhymes with 'Professor', spelled like <). I began teaching university courses in 1988 (at UTEP since 2004), and I've also worked as a state agency statistician, a HS math teacher, and director of a university-wide teaching center. I've served on national statistics education journal editorial and research advisory boards and have published quantitative and qualitative studies in statistics education journals aimed at researchers (e.g., *Statistics Education Research Journal*, *Journal of Statistics Education*) as well as articles in journals aimed at teachers (e.g., *Teaching Statistics*, *Mathematics Teacher*).

Office Location: Bell Hall 213

Contact Info: Phone: (915) 747-6845

Email: **Lesser (at) utep.edu** (please put 5361 in the subject line)
emailing me from your UTEP email address provides more security and reduces the chance of UTEP's server rejecting it

Homepage: <http://www.math.utep.edu/Faculty/lesser/>

Fax: (915) 747-6502 (note: this is a departmental fax, so be sure to have my name clearly on it; be aware that staff are not available to relay faxes to me outside the math dept's hours of M-F 8-12, 1-5)

Emergency Contact: (915) 747-5761 (during math dept. office hours)

Office hours: Tues 3-3:50pm by Bell 213; for readily answered questions, the few minutes before/after class are usually fine and you are welcome to try emailing or stopping by anytime; for more involved questions requiring longer or live conversation,

just email me several possible times that would work for an appointment and I will reply with which option works in my schedule

Textbook, Materials:

No required book to buy; we'll use readings such as articles or books on reserve

Read/do each assignment before the class meeting we discuss it.

To tailor the course to specific mathematics education research and because no single book completely covers all goals of this course, we supplement this book with handouts, individual articles, online resources and demonstrations, taking into account class backgrounds, interests, and time available.

- **Readings** (e.g., pp. 6-7) are available to you without cost-- each in at least one of the following ways (depending on logistics and copyright issues):
 - on the Internet (e.g., certain open-access journal articles and websites like <http://www.math.utep.edu/Faculty/lesser/ResearchResources.html>).
 - sent by email to the email address that UTEP has on file for you.
 - in our class Blackboard shell
 - at UTEP library hardcopy reserve at Circulation Desk (under Lesser or 5360 or 5361). For example, the 2012 reference book Atkins and Wallace book *Qualitative research in education* (Sage Publications) is available using 2-hour checkout from the UTEP library hardcopy reserve for MATM/MATH 5361 at the Circulation Desk.
 - on UTEP library electronic reserve via library homepage:
Search and find →course reserves→type "Math 5360"→Lesser→Readings
 - from a UTEP library database (go to the UTEP library home page, and type the name of the journal's title into the Books & Journals tab's window and choose TITLE. This usually results in your being able to access the journal from one or more sources. Sometimes you can access more years than the listing implies.)

Course Objectives (Learning Outcomes): Students will....

- Increase ability to navigate, critique, and synthesize the research literature in mathematics education (which is assumed to include statistics education)
- Gain familiarity and hands-on experience with (primarily qualitative) methodology options and how to choose an option that aligns with the student's research question in mathematics education
- Develop understanding of criteria for rigor, reliability and validity in qualitative research
- Develop understanding of triangulation (four types: data, researcher, theory, method)
- Develop understanding of how qualitative methods can complement quantitative methods
- Understand pitfalls and ethical principles of (qualitative) research and how to comply with Institutional Review Board (IRB) requirements
- Write and present a mathematics education research paper that uses current edition of APA style
- Learn how to contribute to and benefit from being part of a community of (emerging) scholars, including peer debriefing and feedback on oral and written communication

Course Activities/Assignments: Students will participate in in-class activities, demonstrations, discussions, presentations, readings, papers, and assessments.

Assessment of Course Objectives: Assessments may include written homework (e.g., reflections or projects), quizzes, papers, presentations, and exams.

Course Schedule: Census Day: Wed., Sept. 13
Midterm Exam: currently set for Oct. 26, but subject to change
Deadline to Drop with a “W”: Fri., Nov. 3
Last Regular Class Meeting: Thurs., Dec. 7
Presentation of Final Papers: Tues., Dec. 12, 4-6:45pm (as set by UTEP registrar, with approvals needed for any modifications) if you have a pre-approved reason not to be able to present during this time, you need to arrange with me to either present at an earlier meeting or use an appropriate distance delivery technology on the finals week meeting date

Grading Policy: after any rescaling needed for all components to be on the 0-100 scale, the grade is determined by the usual cutoffs of 90-80-70-60 based on these 4 parts, *whose weightings were finalized by collective student vote on Aug. 29:*

* Midterm Exam (21.4%) at least a week or two in advance, I’ll confirm exact date and material covered

* Homework/One-page Reflections/Projects/Quizzes (33.6%)

* Final Paper (32.1%) – due at our last regular class meeting, Dec. 7 (this deadline gives you several days to focus only on the oral presentation; many research conferences work this way -- you submit your paper well before you present it so that a proceedings volume of everyone’s papers can be prepared in advance and released at the conference); details about what is expected in the paper should be available by the third class meeting

* Oral Presentation of Final Paper (12.9%) at our finals week meeting (Tues., Dec. 12)

Makeup Policy: If a written assignment is due in class and you are not able to get to UTEP, you are still responsible for emailing or faxing the assignment that night. In general (out of fairness and logistics), **late work will not be accepted**, and may be subject to a penalty in the rare borderline cases that it is accepted at the instructor’s discretion. A makeup exam is possible only if you take the initiative to send me a voicemail or email within 24 hours (or the earliest medically possible opportunity) and have the message (1) tell me why missing the scheduled class exam date was unavoidable, and (2) give me multiple days/times within the next few days when you would be available to take a makeup exam. If it takes more than 24 hours after an exam to receive such a message from you, I would consider a makeup only for extreme circumstances with written documentation.

Attendance Policy: **Attendance is expected** and here’s why: Much of this course involves beyond-the-book group activities, experiences or discussions that are virtually impossible to recreate or “make up.” Successful completion of this course is intended not only to imply you have demonstrated sufficient knowledge acquisition, but also that you have been exposed to key processes, modeling, and experiences (which are especially important for researchers or teachers, for example). Therefore, if you are now in a situation where you expect to have excessive absences, you might consider taking this class another semester. Attendance is generally taken each meeting using a sign-in sheet and it’s your responsibility to sign it each day you attend. Late arrival, early departure, or

blatant nonparticipation may be counted as a half-absence or even a full absence, depending on what is missed.

As the UTEP *Catalog* says, “When in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor may drop the student from the class with a grade of “W” before the course drop deadline [Fri., Nov. 3] and with a grade of “F” after the course drop deadline.” In practical terms, this means a student is **subject to being dropped for more than 5 absences** (unless you have given me a written or emailed reason I have approved). If you choose to withdraw, I ask that you submit the formal paperwork and send me an email to let me know rather than just stop attending class and assume you will be withdrawn automatically. On a positive note, a strong record of attendance will be taken into account if your final average is a point below a letter grade cutoff.

It’s **your responsibility** to....

- (1) give me a written note or email by the 15th day of the semester [Mon., Sept. 18] if you will have absence for religious holy days (which are excused, of course).
- (2) give me an email or written documentation as soon as possible if you anticipate the possibility of missing large parts of class due to exceptional circumstances such as military service/training, childbirth, or competing on official UTEP athletic teams.
- (3) let me know by email (**Lesser (at) utep.edu**) or voicemail (747-6845) or daytime math dept. fax (747-6502) at the *earliest opportunity* if you have a serious situation which may affect a test, major assessment deadline, the final exam week meeting, or a large number of “regular” class days. If you miss a single “regular class meeting,” you don’t need to contact me, but you **DO** need to get copies of notes and announcements from a classmate, so **get contact information for at least 3 classmates** for this purpose.

Academic Integrity Policy: It’s UTEP’s policy (and mine) for all suspected violations to be referred to the Dean of Students for investigation and disposition (see the **Handbook for Operating Procedures: <http://admin.utep.edu/Default.aspx?tabid=73922>**). Cheating, plagiarism and collusion in dishonest activities are serious acts which erode the university’s purpose and integrity and cheapen the learning experience for us all. Don’t resubmit work completed for other classes without specific acknowledgment and permission from me. It is expected that work you submit represents your own effort (or your own group’s effort, if it is a group project), will not involve copying from or accessing unauthorized resources or people (e.g., from a previous year’s class). You must cite references that you do consult, using **APA style** with complete citations even for websites and people you consult.

For Group Work: Within a group, members are allowed to divide up subsets of the project for which individuals will take the initial responsibility for coordinating efforts, but it is assumed that by the time a group turns in a writeup that all members have read, discussed, contributed to, and understand what is being turned in. Group members may even discuss general ideas and strategies with members of other groups, but **NOT** share parts of actual written work. At a minimum, to be safe, put away all written notes and writing materials and recording devices before having any intergroup conversations. And if you still see a “gray area,” play it safe and ask the instructor! Intergroup conversations are not allowed during in-class quizzes taken as teams.

Civility Statement: You are expected to follow basic standards of courtesy (**<http://admin.utep.edu/Default.aspx?tabid=73922>**) and may be dismissed from class for blatant or sustained disruptive behavior. Your comments during classroom discussions should focus constructively and respectfully on the intellectual merit of a position, *not* critiquing the person expressing it. You should avoid side conversations when one person (me, or another student) is talking to the whole class. Whether the

“weapon of math disruption” is a phone or laptop, engaging in off-task activities are inappropriate because they distract and disrupt class participation. If you are expecting an urgent call on your phone, please keep your phone on vibrate instead of anything loud, let me know and sit near the door to minimize disruption, and have the phone handy so you don’t have to dig for it. Or feel free to give a family member or childcare provider the number for the campus police (747-5611) so you can turn off your phone with the confidence that an officer will reach you quickly if there is ever an emergency.

Student Accommodations Statement: If you have or believe you have a disability requiring accommodations, you may wish to self-identify by contacting the Center for Accommodations and Support Services (CASS; 747-5148; East Union Building 106; cass@utep.edu; <http://sa.utep.edu/cass/>) to show documentation or register for testing and services. CASS will ask you to discuss needed accommodations with me within the first 2 weeks of the semester or as soon as disability is known, and at least 5 working days before an exam. You are responsible to make sure I receive any CASS instructions and accommodation letters. CASS provides note taking, sign language, interpreter, reader and/or scribe services, priority registration, adaptive technology, diagnostic testing for learning disabilities, assistance with learning strategies/tutoring, alternative testing location and format, and advocacy.

Military Statement: Give me an email or written documentation as soon as possible if you anticipate the possibility of missing large parts of class due to military service.

campus carry: <http://sa.utep.edu/campuscarry/>
campus safety: <http://utep.edu/emergency/>

ADDITIONAL INFORMATION

Professionalism Statement: Beyond the previously mentioned Civility Statement, students in this course are required to exhibit professionalism that goes beyond avoiding negative behaviors. This includes making a good faith effort in preparation for and participation in individual and collaborative class activities. A classroom culture must be actively supported that understands that “wrong answers” are usually correct answers to a different question or valuable learning opportunities to address a common misconception.

Confidentiality: UTEP policy requires that inquiries about confidential information such as grades cannot be done over the phone, but must be from your miners.utep.edu account and accompanied by your 800 number. Assuming time permits between when I submit course grades and UTEP puts them online, I will post them in our course Blackboard shell so that you can see only yours.

BIBLIOGRAPHY (see techniques for accessing articles listed on p. 2)

- Adams, T. L., & Harrell, G. (2010). A study of estimation by professionals at work. *Journal of Mathematics and Culture*, 5(2), 1-15.
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- students' images of mathematicians. *International Journal of Science and Mathematics Education*, 14(3), 527-548.
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<http://www.todos-math.org/assets/documents/TEEM2010v2n1.pdf>
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- Green, J. L. (2010). Highs and lows: Exploring university teaching assistants' experiences. *Statistics Education Research Journal*, 9(2), 108-122.
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- Groth, R. E. (2010). Situating qualitative modes of inquiry within the discipline of statistics education research. *Statistics Education Research Journal*, 9(2), 7-21.
[http://iase-web.org/documents/SERJ/SERJ9\(2\)_Groth.pdf](http://iase-web.org/documents/SERJ/SERJ9(2)_Groth.pdf)
- Gutstein, E. (2006). Driving while black or brown: The mathematics of racial profiling. In Joanna O. Masingila (Ed.), *Teachers Engaged in Research Inquiry into Mathematics Classrooms, Grades 6-8* (pp. 99-118). Charlotte, NC: Information Age Publishing.
[in the course reserves on UTEP library website under my Math 5360]
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[key excerpt of Pan is in the course reserves on the UTEP library website under my Math 5360]
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- Blackwell introductory chapter: https://www.blackwellpublishing.com/content/BPL/Images/Content_store/Sample_chapter/9780632052844/001-025%5B1%5D.pdf

some TOOLS (mostly free) for QUALITATIVE DATA ANALYSIS:

http://en.wikipedia.org/wiki/Computer_assisted_qualitative_data_analysis_software

<http://cat.ucsur.pitt.edu/>

<http://rqda.r-forge.r-project.org/>

<http://www.transana.org/>

<http://compendium.open.ac.uk/institute/>

<http://www.pressure.to/qda/>

<http://discovertext.com/>

<http://boardreader.com/index.php?a=a&x=1> (searches website for words)

<http://vue.tufts.edu/index.cfm> (concept map)

<http://texttexture.com> (graph network of key words in text)

<http://www.liwc.net/tryonline.php> (personal vs. formal)

<http://voyeurtools.org> (word cloud)

<http://admin.utep.edu/Default.aspx?tabid=74274> (NVIVO)