

**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 many links or see any addendums. Syllabus is subject to change by the instructor to meet course needs, especially for unexpected school disruptions or big changes in class size, resources, etc.

**Course Number:** MATH 4370-001 (CRN# 17866)

**Course Title:** Topics Seminar (Probability and Statistics for Middle School Teachers)

**Credit Hours:** 3

**Term:** Fall 2018

**Prerequisite:** STAT 1380

**Course Fee:** none

**Course Meetings & Location:** 9-10:20am TTh (except. Nov. 22) in **BUSN 330**. In a disruption (e.g., H1N1 epidemic, subzero weather, etc.), be prepared to maintain course progress via alternative means (e.g., Internet, our Blackboard course shell, Bb Collaborate Ultra, etc.) and check email (especially your UTEP account) regularly.

**UTEP set our finals week exam on Tues Dec.11, 10am-12:45pm.**

**Instructor:** Dr. Larry Lesser (rhymes with ‘Professor’, spelled like < ). I began teaching university courses (especially stats!) in 1988 (at UTEP since 2004), and I’ve also worked as a state agency statistician, a full-time HS math teacher, and director of UTEP’s (former) teaching center. In 2012, I taught a lesson to local first and second graders on surveys for a **children’s educational show on our region’s PBS-TV station!** I’ve served on national statistics education journal editorial and research advisory boards and have published in statistics education journals aimed at researchers (e.g., *SERJ*, *JSE*) as well as journals aimed at teachers (e.g., *Teaching Statistics*, *Mathematics Teacher*, *Statistics Teacher Network*, *STEW: Online Journal of K-12 Statistics Lesson Plans*).

**Office Location:** Bell Hall 213 (but I am sometimes across the street in UGLC 122)

**Contact Info:** Phone: (915) 747-6845

Email **Lesser (at) utep.edu** (please include **9am** in the subject line)  
also, emailing me from your [miners.utep.edu](mailto:miners.utep.edu) address is best because it provides more security and minimizes the chance the UTEP server rejects 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:** by Bell 213 **T 3-4pm** and additional hours or changes will be announced or posted later; you are welcome to try emailing, calling, or stopping by without an appointment for readily answered questions; for questions requiring longer 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 for a meeting whether it would

be in-person, by phone, or via Blackboard Collaborate Ultra (instructions are posted in Announcements in our course Bb shell); I expect to be assigned a graduate TA who may be able to offer some office hours at yet additional times; also there should be a number of tutors at <http://math.utep.edu/marcs> who can offer help related to our material

**Textbook(s), Materials:**

**Required textbook:** Perkowski, D. A. & Perkowski, M. (2007). *Data and Probability Connections: Mathematics for Middle School Teachers*. Upper Saddle River, NJ: Pearson Prentice Hall.

Subject to change based on timing, resources and interest, we plan to (un)cover the entire book in order, but moving through the early chapters at a faster pace (due to the foundation you gained from STAT 1380). There may also be occasional supplementary material provided on topics for which you are also responsible, such as the geometric distribution. You are expected to read each chapter and try the selected HW problems for that chapter (see below) before the class meeting we discuss that chapter (so that you are able to understand more and offer more) and to **bring your book to each class**. Depending on factors such as available TA support that I do not yet know, **For each chapter, there will be some subset or combination of: (1) in-class informal formative assessment, (2) having you turn in (with at least 2-3 calendar days’ advance notice) the exercises on paper, or (3) a quiz (with or without advance notice).**

| chapter | HW                           | chapter | HW                        |
|---------|------------------------------|---------|---------------------------|
| 1       | 3,4,5,7,8                    | 6       | 4,5a,6a,7abefg,8,10abc,12 |
| 2       | 3,5,7f, 9,10                 | 7       | 3,6,11,13-15,18defgh,20   |
| 3       | 3cd, 4acfgk,6,7,9,11,14,15ab | 8       | 3,5-7,8de,10,14,15        |
| 4       | 3,4,5,7bc, 8,9               | 9       | 3,9,11,15                 |
| 5       | 4,6,8-12, 14,16              | 10      | 3,4,9,10,15               |

*Note: Don’t worry about continuity correction (p. 223) or classical approach (p. 322).  $H_o$  will never be an inequality in our class (see pp. 304-5)*

**Required technology:**

- **“low-tech” clicker (ABCD Card), brought to each class, starting Aug. 30:** <http://www.math.utep.edu/Faculty/lessner/ABCDclassResponseCard.pdf> (print the card from the URL above on a color printer or print it black-and-white and color it in with the same color scheme as the URL above) see the “Participation” section in this syllabus for more information
- **TI-83/84+ calculator brought to each class.** The **TI-83/84** (Guidebooks are under the Downloads pulldown menu at the above link) not only is commonly used in secondary school classes like Algebra I, AP statistics, etc., but also our textbook includes specific support for it and I will often demonstrate things with it (and possibly occasionally with the TI-73 as well). Having a common course calculator also creates a “level playing field” and streamlines instruction. You’ll be allowed to use it on virtually all activities and assessments (but it has to be a separate calculator, because you aren’t allowed to use Internet-enabled/storage devices such as a laptop, smartwatch, or cell phone on tests). You still need to be able to show enough work so I can

follow your process and give full credit for your work. Example: to find mean of {3, 4, 5, 5, 8}, don't just state "5", but write out  $(3 + 4 + 5 + 5 + 8) / 5 = 5$ . Websites such as [http://www.prenhall.com/esm/app/calc\\_v2/](http://www.prenhall.com/esm/app/calc_v2/) help you get the most out of your calculator.

- As logistics and interest allow, I'll also expose you to how stats are computed with applets and software (e.g., Excel or Minitab). While **Minitab** is in some on-campus labs (e.g., <http://utep.edu/chs/ilc>), it is possible to access it anytime anywhere (even in class or at home!) using UTEP MY.APPS (see <https://admin.utep.edu/Default.aspx?tabid=74096> <http://admin.utep.edu/Default.aspx?tabid=74328> and <http://admin.utep.edu/Default.aspx?tabid=74340>) its Calc, Stat, Graph pulldown menus have about all you'd need (and more)!
- **(other technology resources you may want to explore on your own include:**

<http://learn.desmos.com/statistics/>, <https://www.desmos.com>,  
<http://codap.concord.org>, <https://www.jake4maths.com/grapher/>,  
<https://www.stat.auckland.ac.nz/~wild/iNZight/index.php>, <https://tuvalabs.com/>;  
also, students can sometimes get free time-limited licenses of software such as  
<http://fathom.concord.org/> or <https://www.tinkerplots.com/>) & Probability Explorer

**Course Objectives (Learning Outcomes):** Students will be able to....

- gain more mathematical foundations and connections for the statistical literacy you were exposed to in STAT 1380,
- gain understanding some additional topics given little or no attention in Stat 1380, such as the binomial and geometric distributions, residual analysis in regression, combinations/permutations, inferential statistics, etc.
- increase your ability to carry out the collection, interpretation, and communication of real-world data to explore questions of interest.
- gain awareness of connections to current/recent middle school curricula and the most up-to-date guidelines, principles and standards for instruction being advocated by national mathematics/statistics organizations, such as:  
NCTM (<https://www.nctm.org/standards/> and Appendix A of <http://www.amstat.org/publications/jse/v18n3/metz.pdf>),  
GAISE ([http://www.amstat.org/asa/files/pdfs/GAISE/GAISEPreK-12\\_Full.pdf](http://www.amstat.org/asa/files/pdfs/GAISE/GAISEPreK-12_Full.pdf))  
*Common Core State Standards in Mathematics*,  
[http://www.corestandards.org/assets/CCSSI\\_Math%20Standards.pdf](http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf));  
Texas Essential Knowledge and Skills,  
<http://ritter.tea.state.tx.us/rules/tac/chapter111/ch111b.html>
- gain background to handle probability and statistics questions on the TExES/ExCET (<http://cms.texas-ets.org/texas/prepmaterials/tests-at-a-glance/>, then click on "Mathematics 4-8 (115)" and look up Domain IV)

**Course Activities/Assignments:** Students will participate in in-class activities, demonstrations, discussions, readings, and assessments. Assigned homework exercises from the textbook are listed previously on this syllabus where the textbook is stated.

**Assessment of Course Objectives:** Assessments include written homework (which may include reflections or projects), quizzes, and exams.

**Course Schedule:** UTEP Census Day: Sept. 12 for UTEP  
Midterm Exam: currently Tues. Oct. 9, but subject to change  
Deadline to Drop with a “W”: Nov. 2 (CoS won’t approve drop requests after Nov. 2 except for withdrawal of all courses)  
Last Regular Class Meeting: Wed., Dec. 3  
Finals Week Exam: **Tues Dec.11, 10am-12:45pm** (as set by UTEP registrar, with approval needed for any modifications; covers material AFTER the material covered by the midterm)

**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 3 parts:

\* Midterm Exam (25%) at least a week or two in advance, I’ll confirm the exact material covered, the date, and what formulas from the textbook will be provided; you must bring your own calculators (see p. 2 of the syllabus) and #2 pencils; the main emphasis of the exam is not on memorization or rote procedures, but on being able to recognize, apply, critique, and interpret concepts in context (e.g., in newspaper articles or graphs), even if the questions have a multiple-choice format; it is recommended that you study with a partner your class notes, the textbook chapters, homework and quizzes.

\* Finals Week Exam (35%) – see above

\* Homework/One-page Reflections/Projects/Quizzes (40%): Details announced later, informed by class interests/size, availability of TA grading support, new mandates, etc.

### **Makeup Policy:**

A makeup **exam** is possible if you take the initiative to send me an email or voicemail within 24 hours (or the earliest medically possible opportunity) that makes clear: (1) why missing the scheduled class exam date was unavoidable for a serious reason, and (2) gives me multiple days/times within the next few days when you would be available to take a makeup exam. If it takes more than 48 hours after an exam to receive such an email from you, I would consider a makeup only in extreme circumstances with written documentation.

With a missed in-class **quiz**, you have two choices: (1) don’t worry about it because only the top “n” quizzes will count, so missing a quiz doesn’t give you a 0, that quiz just simply won’t be a score in your top “n”; or (2) if the missed quiz is for a serious reason for which you email me or hand me written third-party documentation (e.g., a doctor’s note) within 3 calendar days, then the missed quiz will be replaced by your score on the ensuing exam.

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 by the time it is due. 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.

**Attendance Policy:** I view attendance as **required** 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 future teachers, for example). Therefore, if you are now in a situation where you expect to have frequent absences, you might consider taking this class in another section or another semester. Attendance is generally taken each meeting using a sign-in sheet and it’s your responsibility to sign it and not wait until the end when I’m packing

up materials. 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. 2] and with a grade of “F” after the course drop deadline.” In practical terms, this means a student is **subject to being dropped for 6 or more 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 15<sup>th</sup> day of the semester [Mon., Sept. 17] 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 “regular class meeting,” you don’t need to contact me, but you do need to get notes and announcements from a classmate: be sure you have 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 of Operating Procedures, <https://www.utep.edu/vpba/hoop/>). 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! Conversations between teams are not allowed during in-class quizzes taken as teams.

**Civility Statement:** We should all strive to follow basic standards of courtesy. Our comments during classroom discussions should focus constructively and respectfully on the intellectual merit of a position, *not* critiquing the person expressing it. Please avoid side conversations when one person (me, or another student) is address the class. Engaging in activities such as texting, Facebook, YouTube, phone conversations, or emailing are inappropriate because they distract and impact class participation by you and



others. If you are expecting an urgent call, *please keep your phone on vibrate* instead of anything loud, sit near the door to minimize disruption, and have the phone handy so you don't have to dig around for it. Or you might give your childcare provider or family member the phone number for the campus police (747-5611) so you can rest assured that someone will let you know if there is an emergency. Finally, know that free speech has limits and that the *UTEP Handbook of Operating Procedures* prohibits communication that is harassing, disruptive, or that incites imminent violations of law. Violations may be referred to the Dean of Students or Campus Police.

**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](mailto:cass@utep.edu); <https://www.utep.edu/student-affairs/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. At the start of a term, CASS sometimes has processing delays, and you are responsible to contact (and follow up with) CASS promptly so I that receive the CASS accommodation letter as soon as possible. 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.

#### ADDITIONAL INFORMATION

**Professionalism Statement:** Beyond the previously mentioned Civility Statement, students in this course are expected 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. This also includes supporting a classroom culture respecting “incorrect answers” as usually correct answers to a different question or valuable opportunities to address an important distinction or common misconception. (*Fun Fact:* “mistakes” led to inventing sticky notes, penicillin, and rubber tires!) Also, be open to local opportunities for professional growth or service. For example, future teachers may consider encouraging K-12 students to enter an **ASA Project or Poster** (due April 1) or joining (at cheaper student rates!) professional organizations -- local (GEPCTM), state (**TCTM**), or national (**NCTM**, **TODOS**, etc.). You can also get a taste of student research by attending (and one day presenting at) events on campus such as the COURI symposium and the strongest student project authors in our class might consider entering a national contest before Dec. 21: <https://www.causeweb.org/usproc/USCLAP%20Competition>.

Finally, start to be aware of statistics in the mass media around you, in places such as: <http://www.gallup.com/home.aspx>, <https://www.statslife.org.uk/significance>, [https://www.causeweb.org/wiki/chance/index.php/Main\\_Page](https://www.causeweb.org/wiki/chance/index.php/Main_Page), <http://stats.org>, <http://usatoday30.usatoday.com/snapshot/news/snapndex.htm>,

<http://nieonline.com/coloradonie/downloads/minipage/MiniPage8.10.16.pdf>, etc.

**Participation:** Part of your expected daily class participation involves answering questions posed by the instructor. These questions are ongoing assessment designed to give feedback to you as well as to the instructor. Some questions will be answered “simultaneously and anonymously” using the research-backed, classroom-tested ABCD Class Response Card. **Each student is responsible for bringing to each class the ABCD Card** that has the same color scheme as the one located at the following URL: <http://www.math.utep.edu/Faculty/lesser/ABCDclassResponseCard.pdf>. Your participation can only help (not hurt) your learning and grade. If I call on you on a day you’re not feeling well, you have a “lifeline” to “pass” to a classmate.

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

**Other Resources:** For those who may be helped by consulting statistics books for additional mathematical theory, conceptual intuition, or real-world connections, go to the UTEP library circulation desk and ask them to look under “STAT 1380”). Also, know that there are free statistics textbooks online (e.g., <https://openstaxcollege.org/textbooks/introductory-statistics/get> or <http://onlinestatbook.com/>) that can be consulted as references as well. I compiled <http://www.math.utep.edu/Faculty/lesser/StatEdIntro.html> to share applets and other resources that not only can help your own understanding in this course, but also offer further context and connections with some topics. Please let me know of other resources you find helpful that I may not know about.

Calculation pages: <http://statpages.org/> (includes much beyond our course)

Classroom connections (interesting for all, especially future teachers):

<http://ww2.amstat.org/education/stn/> (e.g., browse issue #64)

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

<https://www.causeweb.org/cause/resources/>

<http://www.amstat.org/asa/education/K-12-Statistics-Education-Webinars.aspx>

<https://onlinelibrary.wiley.com/journal/14679639> (UTEP students have access through the UTEP library webpage)

UTEP Library: Also, I’ve put some statistics books with other conceptual intuition or real-world connections on reserve at the circulation desk under “Lesser” or “Stat 1380.” On the 2nd floor, [free walk-in tutoring](http://marcs.utep.edu) is available for this course (<http://marcs.utep.edu>; Library 218; 747-5366) as well as [free help with writing papers](http://uwc.utep.edu) (Library 227; 747-5112; Writing Center (Library 227, 747-5112, <http://uwc.utep.edu>)).

General study tips: <http://www.math.utep.edu/Faculty/lesser/mathtips.html>

Campus Concealed Carry: <http://sa.utep.edu/campuscarry/> (knives over 5.5” remain banned on campus)

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**Student Support:** My training is limited to academic resources (e.g., my chapter on statistics anxiety on (e)reserve in the UTEP library under “MATH 5364”), but I want anyone who feels overwhelming stress/crisis to know about these broader resources:

- **UTEP's Counseling Center** (free counseling to all students): 202 Union West, 747-5302 (which after-hours goes to a crisis line)
- El Paso's Mental Health Crisis Line: 779-1800 (24 hours)
- **National Suicide Prevention Hotline** or **Veterans Crisis Line**: 1-800-273-8255
- **NAMI (National Alliance Against Mental Illness) of El Paso**: 534-5478
- <http://carineducators.tumblr.com/survival>