

# TTU – MATH 3342 – Engineering Statistics – Spring 2016

<b>Section / Time / Location:</b>	004 / MWF 10:00-10:50am / MATH 014	<b>Instructor:</b>	Josh Engwer
		<b>E-mail:</b>	<a href="mailto:josh.engwer@ttu.edu">josh.engwer@ttu.edu</a>
		<b>Website:</b>	<a href="http://www.myweb.ttu.edu/jengwer">http://www.myweb.ttu.edu/jengwer</a> or Google™ "josh engwer"
<b>Office Hours:</b>	MWF 11:00am - 2:00pm (or by appt.)	<b>Office:</b>	MATH 003A
<b>Textbook:</b>	<i>PROBABILITY &amp; STATISTICS FOR ENGINEERING AND THE SCIENCES</i> 9 <sup>th</sup> Ed by Devore		

**Prerequisites:** Any one of [A]-[B] below. (Legend: / = 'or', + = 'and', :X = 'at least a grade/score of X')

[A] MATH 2450:C    [B] Departmental permission    [i.e. **Calculus III**]

**Course Content:** (not exhaustive, but the main themes – hours are approximate)

(4 hrs) Ch1	<b>Descriptive Statistics</b>	(1 hr) Ch6	<b>Point Estimation</b>
(5 hrs) Ch2	<b>Probability</b>	(4 hrs) Ch7	<b>1-Sample Inference: Confidence Intervals</b>
(5 hrs) Ch3	<b>Discrete Random Variables</b>	(5 hrs) Ch8	<b>1-Sample Inference: Hypothesis Testing</b>
(5 hrs) Ch4	<b>Continuous Random Variables</b>	(4 hrs) Ch9	<b>2-Sample Inference</b>
(2 hrs) Ch5	<b>Central Limit Theorem</b>		

**Final Grade Assessment:** Attendance – 5%, Homework – 10%, 3 x Midterm Exams (20% each) – 60%, **Final Exam – 25%**

**Final Grade Scale:** A: 100%-90%    B: 89%-80%    C: 79%-70%    D: 69%-60%    F: 59%-0%

**Attendance Policy:** Attendance will be taken – it's your responsibility to sign/initial your name on the roll sheet each class.

**Homework:** All homework (HW) is assigned & completed online through **WebAssign** (**Access Code required!**)  
You should work HW problems by pencil & paper to realize the amount of work to be expected for similar problems on exams.

**Calculators:** **Any graphing or scientific calculator is permitted on exams. Avoid "basic" & "printing" calc's.**  
**Phones, laptops & tablets are forbidden as calculators on exams.**

**Midterm Exams:** In-class, **calculator permitted, formula sheet provided, closed-'everything else'**  
**Expect exam questions to be mostly/entirely free-response! Be prepared to show your RaiderCard.**  
Sufficient correct work must be shown to receive full points on exam problems – **answers without work earn no credit!**

**Final Exam:** In-class, **comprehensive, calculator permitted, formula sheet provided, closed-'everything else'**  
**Bluebook required! Instructor writes Final Exam. Expect exam questions to be mostly/entirely free-response!**  
It will be administered on **Monday, May 16<sup>th</sup>, 1:30pm - 4:00pm** in room MATH 014.  
**FAILING TO SHOW UP & TAKE THE FINAL EXAM WILL RESULT IN A FINAL GRADE OF "F", REGARDLESS OF HOW STELLAR YOUR COURSE GRADE MAY BE BEFORE THE FINAL EXAM!!**

**Make-up Policy:** **Homework will not be accepted late – hence, no make-ups for homework.**  
There will be no make-up exams given except for observance of a religious holiday.  
If a midterm exam is missed for a **legitimate documented** reason, then the Final Exam score will replace it.  
**Some legitimate excuses (with documentation): university field trip, severe illness, death in the family, ...**  
**Some non-legitimate excuses: "I already bought plane tickets", "I was stuck in traffic", "I overslept", ...**

**Email Communication:** Please use your **TTU email address** when sending email to the instructor.  
All instructor-responses & class-wide announcements will be sent to your **TTU email address**.

**KEYS TO SUCCESS:** Show up. Work problems. Seek help when stuck. Show work. Manage time.

**I never curve nor accept exam corrections nor drop the lowest exam score nor assign extra credit assignments!**

**Learning Objectives:** MATH 3342 satisfies part of the university Core Curriculum requirement in Mathematics: “*Students graduating from Texas Tech University should be able to demonstrate the ability to apply quantitative and logical skills to solve problems.*” It meets the TTU general education student learning outcomes for mathematics that students will:

- Apply arithmetic, algebraic, geometric, statistical and logical reasoning to solve problems.
- Represent and evaluate basic mathematical and/or logical information numerically, graphically and symbolically.
- Interpret mathematical or logical models such as formulas, graphs, tables and schematics and draw inference from them.

In particular, students will master the concepts of:

- Understand the need to be wary of statistical claims, common pitfalls in sampling, and misrepresentation of conclusions.
- Understand the meanings of statistical measures including mean, median, mode, standard deviation, variance & quantiles.
- Become familiar with various graphical representations of data and learn to recognize misleading graphs.
- Develop proficiency in probability distributions & real-world probability problems.
- Use and interpret the Central Limit Theorem, confidence intervals & hypothesis tests.

**ADA Accommodation:** (from OP §34.22)

Any student who, because of a disability, may require special arrangements in order to meet the course requirements should present appropriate verification from Student Disability Services (SDS) during the instructor’s office hours.

For details, contact the **SDS office:** (Address) **335 West Hall** (Phone) **806-742-2405**.

**Religious Holy Day Observance:** (from OP §34.19)

- “Religious holy day” means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code §11.20.
- A student who intends to observe a religious holy day should make that intention known in writing beforehand.  
A student who is absent for the observance of a religious holy day shall be allowed to take an exam or complete an assignment scheduled for that day within a reasonable time after the absence.
- A student who is excused for a religious holy day observance may not be penalized for the absence.  
However, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

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**Civility in the Classroom:** Students are expected to assist in maintaining a classroom environment conducive to learning.

- No chatting. No newspapers. No periodicals. No music players. Silence phones.
- **When the instructor says “Let’s get started,” all talking should stop.**
- Students who insist on using a laptop or tablet should sit in the back two rows. Of course, the device should be silenced.

**Academic Integrity:** (from OP §34.12)

It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and a high standard of integrity.

**Any attempt of scholastic dishonesty by the student is liable to serious consequences, possibly suspension.**

**Scholastic Dishonesty:** “Scholastic dishonesty” includes (but is not limited to): **Cheating & Misrepresenting Facts**

**Cheating:** “**Cheating**” includes (but is not limited to):

- Copying from another student’s exam
- Using unauthorized materials during an exam
- Collaborating with another student during an exam
- Leaving the exam room without submitting the exam for grading
- Taking an exam for someone else

**Misrepresenting Facts:** “**Misrepresenting facts**” includes (but is not limited to):

- Marking an absent student as present on the attendance roll sheet.
- Providing false or misleading information in an effort to receive a postponement or an extension on an exam or HW.