

STAT 3308 – Agricultural Statistics
Course Syllabus – Fall 2026

Course Information

Lecture

MWF at 2:00 – 2:50pm in RAS 130

Instructors

Dr. Maureen Frank

RAS 113

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(830) 261-0539 (8-5 daily, can text/call)

Office Hours

M 3:00 – 4:00 pm

W 10:00 am – 12:00 pm

Anytime my door is open, you are welcome to come in! You can also email me to make an appointment. Sometimes, field work will conflict with office hours. When this happens, I will give you as much advance notice as possible through a Blackboard announcement.

Course Description

This course is an introduction to statistical concepts that are applied to agricultural and biological systems. The course focuses heavily on statistical thinking rather than computation. Topics include the scientific method, sampling distributions, confidence intervals, comparing two populations, p -values, study design, and science communication.

Enhanced Course Description

This course received an overhaul in Fall 2025 to better align with the standards of the American Statistical Association. That means we won't be teaching you how to draw a histogram. We won't ask you to calculate a p -value by hand (or even with a calculator, for that matter. Our relationship with p -values is... complicated). But we will be teaching you how statistics actually applies to your life – the good, the bad, and the ugly.

In this course, you will learn more about how the human brain works, and why we like to find patterns when there aren't any. You will learn about good science, and bad science.

You will learn about how to share everything you learn with others! Many students do not look forward to taking a statistics course, and this probably won't be your favorite course this semester. But we hope you will see this as the most important course you take this semester. Our goal is to make this course applicable, understandable, and fun!

So, why do statistics matter? Here are a few of the questions we will explore:

- Does eating meat help or harm the environment?
- Is chocolate good for you?
- How much of a threat to the U.S. are the “super pigs” (feral hogs) in Canada?
- Why is climate change one of the biggest science communication failures?

Knowing statistics can help you answer these questions, make decisions, and communicate your reasoning.

Oh, and... you will learn the basics of coding! R is a programming language that has become a standard tool in many fields for data science, statistical analysis, and graphics. This class will teach the basics of R.

Course Objectives

At the completion of the course, the student will be able to:

1. Discuss the importance of statistics in agriculture and natural resources.
2. Calculate basic descriptive statistics using the computer program R.
3. Be able to make informative graphics with data using program R.
4. List the basic assumptions involved in statistics.
5. Describe the life cycle of science.
6. Analyze, interpret, and explain statistics from a case study.

Student Learning Outcomes, B.S. in Animal Science

- Students will demonstrate the basic skills of analyzing and interpreting information gathered in a research setting.
- Students will apply critical thinking skills to deal with potential challenges in diverse animal sciences and related industries.
- Students will demonstrate general knowledge in animal science content areas.

Student Learning Outcomes, B.S. in Natural Resource Management

- Students will be able to identify species of wildland plants and wildlife common to the western United States and describe their natural history.
- Students will be able to demonstrate knowledge of the elements of an ecosystem.
- Students will be able to communicate about natural resources and conservation both orally and in writing.

TEA AFNR Educator Standards

The AFNR teacher understands:

1. The foundations of agricultural education
 - a. (Competency I: F and G) Understands the use of scientific principles, methods, measurements and calculations in agriculture and agricultural education, and
 - b. Collects organizes, displays and analyzes data according to an orderly plan, using data, tables, graphs, narrative descriptions and other methods as appropriate.

Marketable Skills, B.S. in Agriculture/Animal Science

Students will acquire these marketable skills:

1. Students acquire knowledge of techniques and equipment for planting, growing, and harvesting food products (both plant and animal) for consumption, including storage/handling techniques.
2. Students acquire knowledge of plant and animal organisms, their tissues, cells, functions, inter-dependencies, and interactions with each other and the environment.
3. Students demonstrate understanding the implications of new information for both current and future problem solving and decision-making.
4. Students use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
5. Students identify complex problems and reviewing related information to develop and evaluate options and implement solutions. Communicating finding in both oral and written form at a level appropriate for the needs of the audience.

Marketable Skills, B.S. in Natural Resource Management

Students will acquire these marketable skills:

1. Students will demonstrate public speaking skills.
2. Students will demonstrate writing skills.
3. Students will be able to apply course knowledge through a research project.

Course Materials

Textbook and Supplies

There is no textbook for this class! I will assign readings from popular articles and scientific literature. These will be provided to you via Blackboard.

Some work in this class will require the use of a computer. This will be easiest if you have a personal laptop. If you do not have a personal laptop, you can use campus computer labs.

You must use program R for this course. **Before class on Sept. 4, please download and install program R as well as RStudio.** When installing, accept all default settings.

- To install R: <https://cloud.r-project.org/>
 - Click the link for your operating system (Windows, MacOS).
 - Windows Users: On the next page, click the link titled “install R for the first time”. On the next page, click “Download R-4.X.X for Windows”.
 - Mac Users: On the next page under the centered title “Latest release:”, click the link called “R-4.X.X-arm.pkg”.
- To install RStudio: <https://rstudio.com/products/rstudio/download/>
 - Windows Users: Click the blue box “Download RStudio Desktop for Windows”.
 - Mac Users: Scroll down to the first table of links and click the link next to “MacOS 13+” in the Download column.

Assignments and Examinations

Quizzes/Assignments

Each week, you will have a quiz, an assignment, or both, depending on the subject material that week and what method the instructors have determined will best evaluate what you have learned. Quizzes will be completed in class. Assignments will be completed outside of class and submitted via Blackboard. Some assignments will be individual; others will be done in groups. Altogether, quizzes and assignments will be 20% of your grade.

If you will be absent, you must take your quiz or turn in your assignment BEFORE your absence. Late assignments will have a 10% grade deduction for each day late up to 5 days; after 5 days, no credit will be given. **Late quizzes will only be administered in the case of a legitimate unexpected absence** (e.g., illness). You must contact your instructor before the end of the day that you are absent to arrange a makeup quiz.

Exams

Three exams will be given in the course (see schedule). Each exam is worth 20% of your grade. Exams are cumulative because concepts in this course build on each other. **If you will be absent, you must take the exam BEFORE your absence. No make-up exams will be given for an unexcused absence.** Use of internet-capable devices (e.g. smartphones, laptops) is not allowed for exams.

Final Project

There is not a final exam for this course. Instead, at the beginning of the third unit, you will be assigned to a group to complete a comprehensive project that ties together everything we have learned in the course. Your group will present to the class on the university-assigned final exam date. This final project is worth 20% of your grade. More information will be given in class.

Grade Breakdown

Quizzes/Assignments	20%
Exam I	20%
Exam II	20%
Exam III	20%
Final Project	20%

Grading Scale

A: 89.5 – 100%
B: 79.5 – 89.4%
C: 69.5 – 79.4%
D: 59.5 – 69.4%
F: below 59.4%

If you have a question about your grade, you **must** send a Blackboard message. In compliance with FERPA, I cannot discuss grades over email.

Course Policies

Attendance

Attendance is key to earning a good grade in this class. Students are expected to attend every class and arrive on time. If class must be missed, the student is expected to find out what was missed, including asking a classmate for hand-taken notes. Most information from lectures (slides, announcements, etc.) will be posted in Blackboard, but this will not include notes from the board. Roll will be taken every lecture.

Because attendance is crucial, **any student with 9 or more absences will be dropped from the class with a grade of “F.”** Any time class is missed, for any reason other than a university-approved event, it will be recorded as an absence.

Participation

This class requires you to engage with the instructors and your fellow students. This includes asking questions during class, attending office hours, completing readings and assignments, and being prepared to participate in class discussions and activities.

Group work will be assigned during this course, including the final project. All students must participate in group work.

Communication

You are required to check your Sul Ross email and Blackboard announcements several times per week. We do not use the personal or preferred email addresses that you may have on record with the university.

Academic Integrity and Generative Artificial Intelligence

Students in this class are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. A scholar is expected to be punctual, prepared, and focused. Academic dishonesty hurts everyone and reduces the value of college degrees.

Examples of academic dishonesty include but are not limited to:

- Turning in work as original that was used in whole or part for another course and/or professor
- Turning in another person's work as one's own
- Copying from professional works or internet sites without citation
- Collaborating on a course assignment, examination, or quiz when collaboration is forbidden

Generative AI may not be used in this class. The use of generative AI tools for ANY part of your work – including brainstorming, coding, creating images, creating slides, writing drafts, and composing final works – **will be treated as plagiarism**. If you have questions, please ask us.

It is your responsibility to read and understand the university's policy on academic dishonesty in the SRSU Student Handbook, as all violations will be taken seriously and handled through the appropriate university process. **Any student shown to violate academic integrity will receive no credit (score of 0) for work done and/or may be penalized in accordance with published University Rules.**

Electronics in the Classroom

Cell phones and other electronic devices can create distractions for learning, both for

yourself and others. Because this class uses laptops as a tool, you will have access to this device for taking notes and searching the internet for relevant material. Therefore, cell phones and other electronics may not be used. Laptops may not be used for activities that do not directly relate to class. **The use of internet-capable devices (e.g., smartphones) is not allowed for exams. Headphones/earbuds will not be allowed in class for any reason.**

Student Responsibilities Statement

All full-time and part-time students are responsible for familiarizing themselves with the [Student Handbook](#) and the [Undergraduate & Graduate Catalog](#) and for abiding by the [University rules and regulations](#). Additionally, students are responsible for checking their Sul Ross email as an official form of communication from the university. Every student is expected to obey all federal, state and local laws and is expected to familiarize themselves with the requirements of such laws.

<https://www.sulross.edu/wp-content/uploads/2020/09/Student-Handbook-25-26-1.pdf>

<https://catalog.sulross.edu/>

<https://www.sulross.edu/about/administration/university-policies/>

Resources

SRSU Disability Services (ADA Statement)

Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class. To help protect confidentiality, students seeking accessibility/accommodation(s) services must submit the [Accommodation Request Form](#) located on our [website](#). Students are welcome to call the Office of Accessibility Services at 432-837-8203 or stop by Ferguson Hall Room 112 if they have any additional questions regarding the process. Our mailing address is PO Box C-122; Alpine, TX; 79832.

Counseling Services

Sul Ross State University (SRSU) has partnered with TimelyCare, which is an online mental health support platform, and all SRSU students will have access to nine free counseling sessions. These can be accessed by visiting <https://timelycare.com/srsu>. Counseling is also offered in Ferguson Hall Room 112.

Library Information

The Bryan Wildenthal Memorial Library and Archives of the Big Bend in Alpine offer FREE resources and services to the entire SRSU community. Access and borrow books, articles, and more by visiting the library's website, library.sulross.edu. Off-campus access requires logging in with your LoboID and password. Librarians are a tremendous resource for your coursework and can be reached in person, by email (srsulibrary@sulross.edu), or by phone (432-837-8123).

No matter where you are based, public libraries and many academic and special libraries welcome the general public into their spaces for study. SRSU TexShare Cardholders can access additional services and resources at various libraries across Texas. Learn more about the TexShare program by visiting library.sulross.edu/find-and-borrow/texshare/ or ask a librarian by emailing srsulibrary@sulross.edu.

Tutoring

The [Lobo Den Tutoring Center](#) offers FREE tutoring support to help you excel in your courses. This class is not typically among the courses they support, so seeking help from classmates or the instructor is best.

Blackboard Support Desk

If you have any technical issues with Blackboard itself, the Blackboard Support Desk is open 24 hours a day, 7 days a week. You can reach the support desk by calling (888) 837-6055, emailing blackboardsupport@sulross.edu, using resources from the Technology Support tab within Blackboard, or clicking the Support Desk graphic on the course homepage.

Tentative Course Schedule

This schedule is subject to change. Any changes will be communicated in class and via Blackboard.

Week	Dates	Topic(s)	Monday	Wednesday	Friday
1	8/24 – 28	How stats works	Overview	Lecture	Quiz, lecture
2	9/2 – 4	Math and Data Concepts	–	Quiz, lecture	Assn. due, Lecture
3	9/7 – 11	Basics of R	Quiz, lecture	Lecture	Lecture
4	9/14 – 18	Populations and Samples	Assign. due, lecture	Lecture	Lecture
5	9/21 – 25	Confidence Intervals	Quiz, lecture	Review	Assign. due, Exam I
6	9/28 – 10/2	Comparing Two Populations	Lecture	Lecture	Lecture
7	10/5 – 9	<i>P</i> -values	Quiz, lecture	Lecture	Lecture
8	10/12 – 16	Permutations, Effect Sizes	Assign. due, lecture	Lecture	Lecture
9	10/19 – 23	Study Design	Quiz, lecture	Lecture	Assign. due, lecture
10	10/26 – 30	Public Speaking	Quiz, review	Exam II	Lecture
11	11/2 – 6	Big Data, Life Cycle of Science	Lecture	Lecture	Lecture
12	11/9 – 13	Science Communication	Quiz, lecture	Lecture	Lecture
13	11/16 – 20	Case Study	Assign. due, lecture	Lecture	Lecture
14	11/23	Review	Assign. due, review	–	–
15	11/30 – 12/2	Practice!	Exam III	Practice	<i>Finals</i>
Finals Week		Group Presentations			

Holidays

Labor Day (no classes)

Monday, Sept. 7

Thanksgiving (no classes)

Wednesday – Friday, Nov. 25-27