ANSC 4305 Ag Genetics (Online course) -- Spring 2026

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This **ONLINE** course will be accessible through Blackboard. Class correspondence will be through Blackboard or student's SRSU email account.

Course Description: This course is designed to introduce students to the quantitative genetic principles applied to mating and selection of domestic livestock and wildlife. The course integrates Mendelian principles with biometrical and statistical probability techniques for proper application to breeding, selection, inbreeding, line breeding, and pedigree information for progressive animal and plant breeding. The influences of gene frequency, heritability, and genetic relationships on the gene pool of populations is integrated into this course. The course includes application of the Hardy-Weinberg law and statistical correlation and regression as applied to selection of superior genetic lines of animals.

Student Learning Outcomes (SLO):
Upon completion of this course, students should be able to understand:

1. The concepts of genetics necessary to understand the genetic processes used in animal breeding.
2. How to develop and run genetic-based breeding program.
3. The relationship between genotype and phenotype.
4. How to perform genetic selection.
5. Estimating Breeding values in livestock species.

Animal Science Marketable Skills:

- Knowledge of techniques and equipment for planting, growing, and harvesting food products (both plant and animal) for consumption, including storage/handling techniques.
- Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.
- Understanding the implications of new information for both current and future problem solving and decision-making.
- Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- Identifying 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.

Animal Science Learning Outcomes (ASLO):

- Demonstrate the basic skills of interpreting research data gathered in an agricultural context.
- Apply critical thinking skills to mitigate potential challenges in diverse animal sciences and related agricultural industries.
- Demonstrate the ability to communicate through written, spoken, and graphical methods.

Accommodations:
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. Alpine students seeking accessibility/accommodations services must contact Mary Schwartze Grisham, M.Ed., LPC, SRSU's Accessibility Services Coordinator at 432-837-8203 (please leave a message and we'll get back to you as soon as we can during working hours), or email mschwartze@sulross.edu. Our office is located on the first floor of Ferguson Hall (Suite 112), and our mailing address is P.O. Box C-122, SUI Ross State University, Alpine. Texas, 79832.

Academic Integrity:
The University expects all students to engage in all academic pursuits in a manner that is beyond reproach and to maintain complete honesty and integrity in the academic experiences both in and out of their classroom. The University may initiate disciplinary proceedings against a student accused of any form of academic dishonesty, including but not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials. For more information visit: https://www.sulross.edu/catalog/undergraduate-academic-regulations/

SRSU Library Services:
The Sul Ross Library - Bryan Wildenthal Memorial Library in Alpine offers 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 LobolD and password. Librarians are a tremendous resource for your coursework and can be reached in person, by email (srsulibrary@sulross.edu), or phone (432-837-8123).

Assessments & Grading:

90% - 100%	A	Excellent	4
80% - 89%	B	Good	3
70% - 79%	C	Average	2
60% - 69%	D	Poor	1
Below 60%	F	Failure	0

- 12 Weekly quizzes: 10 points each, 120 points total.
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- Three exams: 160 points each, totaling 480 points.

Total = 600 points

Course Schedule (subject to adjustments)

Week		Topic	Quiz/Exam
1	14 Jan	SYLLABUS REVIEW & INTRO	Syllabus Quiz
2	19 Jan	Basic Genetic Concepts	Quiz 1
3	26 Jan	Meiosis, Recombination and Relationships	Quiz 2
4	2 Feb	Planning Breeding	Quiz 3
5	9 Feb	Phenotype Measures and Statistics	Quiz 4
6	16 Feb	Genetic Models	**Exam 1**
7	23 Feb	Diversity and Inbreeding	Quiz 6
8	2 Mar	Inheritance Aspects	Quiz 7
9	**9 Mar**	**SPRING BREAK!!!**	
10	16 Mar	Breeding Value Estimation	Quiz 8
11	23 Mar	Response to Selection	**Exam 2**
12	30 Mar	Selection and Genetic Contribution	Quiz 9
13	6 Ap	Crossbreeding	Quiz 10
14	13 Ap	Evaluating a Breeding Program	Quiz 11
15	20 Ap	Maintaining Genetic Diversity	Quiz 12
16	27 Ap	**DEAD WEEK & FINAL EXAM**	**Exam 3**

Quizzes and Exam will be ONLINE

The are due by midnight on **Saturday** of the week of lecture. Meaning, you will have all day Friday-Saturday from 09:00 -23:59 to complete any quiz or exam for that week.

For **QUIZZES**, please make sure to review all the information prior to starting the Exam.

- Once started, you will have a half hour (30 minutes) in to complete the exam. It will auto-submit after this time.
- You only have one chance, so please make sure to have a stable internet connection, and a quiet, focused environment before starting!
- Quizzes will be available for students between Friday- Saturday 9am and 11:59pm.

For **EXAMS**, please make sure to review all the information prior to starting the Exam.

- Once started, you will have 2 hours in to complete the exam. It will auto-submit after this time.
- You only have one chance, so please make sure to have a stable internet connection, and a quiet, focused environment before starting!
- Exams will be available for students between Friday- Saturday 9am and 11:59pm.