



# ANSC 4311 - 5303 Equine Genetics I

Summer I 2023

**Instructor:** Dr. Laura Patterson Rosa  
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**Office Hours:** By appointment

This web-delivered course will be accessible through Blackboard. Class correspondence will be through Blackboard or student's SRSU email account. **This course is Asynchronous.**

**Course Description:** The art of horse breeding has shaped equine genetics since domestication, yet most horse professionals have little understanding of the fundamentals of genetic selection and genome. In this course, students will examine the underlying mechanisms and inheritance patterns of diverse characteristics in the horse and other equids. Concepts covered will include basic genetics terminology, inheritance, coat color genetics and parentage testing.

## Student Learning Objectives (SLO):

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Upon completion of this course, students should be able to:

1. Students will acquire basic knowledge of genetic concepts and terminology.
2. Students will understand the relationship between genotype and phenotype.
3. Students will understand the applications of modern genetic selection assays used in color genetic and parentage testing in equids.
4. Students will learn to critically evaluate emerging research in the field of equine genetics.

## Animal Science Marketable Skills:

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- 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 (ANSLO):

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- 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](mailto: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, Sul 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](http://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](mailto:srsulibrary@sulross.edu)), or phone (432-837-8123).

## Assessments & Grading:

Undergraduate – ANSC 4311

- Weekly Quizzes and Assignments: 8 total = 80 points
  - Final Exam: 120 points
- Total = 200 points

Graduate – ANSC 5303

- Weekly Quizzes and Assignments: 8 total = 80 points
  - Final Exam: 120 points
  - Graduate Project Presentation: 100 points
- Total = 300 points

Percentage	Letter Grade	Meaning	Points
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

For additional information on current Sul Ross State University policies for assigning grade points, please refer to <https://www.sulross.edu/registrar/catalog-and-policies/>

## Textbook:

Bailey, Ernest, and Samantha A. Brooks. Horse Genetics: 3d edition. Cabi, 2020.

## Graduate Project Presentation:

Select one of the scientific publications posted on Blackboard, and develop a 15-minute presentation on the article using presentation software (PowerPoint, PREZI, etc.). Record your presentation and submit it for review. Your presentation must include personal perspective/remarks following the conclusion. A Rubric will be provided through Blackboard.

### Important Dates to Remember:

- June 1, Thursday - First day of classes
- July 4, Tuesday - Independence Day holiday
- July 7, Friday - Final Examinations, end of term

### Course Schedule (subject to adjustments)

Module	Topic	Reading	Quiz	Assignment
1	Basics of Genetics		1	Chromosome Champion
2	Base Coat Colors and Dilutions		2	Genetics Web Hunt
3	White Spotting Patterns		3	Spot the Spotting Pattern
4	Parentage Testing		4	Who's the Daddy
5	Inbreeding and Hybrids		FINAL EXAM	—

