

**Instructor:** Shaye K. Lewis, Ph.D.  
**Office:** CARC 122  
**Phone:** 936-261-3650  
**Email:** [sklewis@pvamu.edu](mailto:sklewis@pvamu.edu)  
**Hours:** T 2:00 PM – 5:00 PM

**Course (Catalog) Description:** Animal Breeding and Genetics is focused on applying animal genetics to improving livestock breeding programs. The course requires an understanding of basic reproductive physiology (anatomy, physiology, and endocrinology) and genetics, considering emphases of the course include: important animal traits (phenotypes), influences of genetic variation, selections methods, mating systems and prediction of breeding outcomes.

**Course Goals:** To familiarize animal science students with the application of genetics to animal breeding in livestock.

**Course Objectives:** At the end of this course, the student will have a basic understanding of animal genetics applied to animal breeding for breed improvement and sustainability. Students will learn essential terminologies used in breeding and genetic programs. Learning objectives are in alignment with both the **Academic Program** and with the **Core Curriculum**

1. Describe genotypic and phenotypic selection as a foundation for breed selection practices
2. Explain the multifactorial basis for the development of phenotypes, and genotypic contribution to phenotypic variation
3. Describe how genetic inheritance occurs in animals
4. Evaluate and discuss current topics in genetics and animal breeding

**Course Schedule:** See Calendar sent to your email and posted on eCourse.

**Required Textbook:** Molecular and Quantitative Animal Genetics, ISBN: 9781118677407  
**Author:** Khatib

**Grading:**

Quizzes	50 points
<ul style="list-style-type: none"><li>• 5 quizzes, 10 points each</li><li>• <b>No make-up quizzes</b></li><li>• Learning objectives for lectures immediately preceding the quiz</li></ul>	
Exams	300 points
<ul style="list-style-type: none"><li>• Three exams, 100 points each</li><li>• No make-up exams</li></ul>	
Paper summary and critique (instructions below)	150 points
<ul style="list-style-type: none"><li>• Paper is not optional; final exam will not replace paper</li><li>• Two paper summaries during the semester (75 points each)</li></ul>	
Final Exam (optional)	
<ul style="list-style-type: none"><li>• Comprehensive exam, 75 points</li><li>• Score replaces the lowest exam score or missed exam</li><li>• <b>Final exam will not replace paper</b></li></ul>	
<hr/>	
Total	500 points

Grade Scale:

A	B	C	D	D
---	---	---	---	---

100%-90%	89%-80%	79%-70%		≤60%
----------	---------	---------	--	------

**Course Evaluation Methods:** This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

- **Exams** – written tests designed to measure knowledge of presented course material
- **Quizzes** – are also brief assessments used to measure knowledge of presented course material.
- **Semester Project** – See above grading criterion
- **Class Participation** – daily attendance and participation in class discussions

**Attendance Policy:** Students are responsible for all material discussed in class, including arranging with classmates to obtain material from missed class sessions. Students must notify the professor before an absence on an exam day to have the option of completing the exam at another time outside of class, which must be completed no later than the following class session.

**Cell Phones:** Please respect the learning environment of others by turning-off or silencing cell phones, tablets, computers or other electronic devices. Failure to control your electronic device will result in a pop quiz for all students. The quiz will count for a grade.

**Test and Quizzes:** Please leave bags and electronic devices at the perimeter of the room during all exams and quizzes.

## Course Learning Objectives

Following the **Scientific Method**, critique current peer-review original research article. This assignment gives you the opportunity to choose a topic related to genetics and animal breeding that is of interest to you and develop further knowledge and understanding that will be demonstrated through a written paper and an oral presentation to the class.

### Topic and Paper Selection – TBD

Submit the **topic** for your paper. Include a copy of the **first page** of article (not title page or abstract only) with your topic. These items may be submitted as a paper copy or electronically through e-mail. Your topic can be anything related to the genetics or physiology of reproduction that you can find recent publications to support. Examples could include a current genetic technology, inheritance of a specific trait, evaluation and comparison of breeds, description of a specific gene, selection tools, and mating systems. You are encouraged to discuss your topic idea with the professor to confirm it will be appropriate for the assignment. We will discuss in class how to find an orig

### Written paper (2-3 pages) – TBD

Paper guidelines:

- Typewritten in an easily readable font
- 1.5 pt. spacing; 11-12 point font
- Body of paper approximately 2-3 pages
- **Do not** select a review article; must be an original research article (consult w/Dr. Lewis, see calendar)
- Topic and article should be current information (2009-2014)
- Include a copy of the **first page** of the paper (not title page or abstract only)
- Direct quotations only when appropriate (not necessary in most cases)
- **Include your own personal evaluation and interpretation of information!!**
- No plagiarism
- Email (**as word document**) and turn-in a hard copy of the final paper assignment (attach paper with a staple, not a report cover, binder, etc.)
- Late papers receive a 15% grade reduction

Body of Paper:

- Question under investigation
- Relevance of the question under investigation
- Objectives of the current research written in the paper
- Hypothesis under investigation
- What is the null hypothesis (opposite)
- How did the authors test their hypothesis (methods used to answer the question)
- Did the authors data support their hypothesis (in part or whole)
- What was the finding?
- **Include your own personal evaluation and interpretation of the approach and results written by the authors of the paper** (were their methods/approach valid to answer the question (look-up methods to understand what they are measuring), were the authors conclusions valid based on the result presented or do they overreach in their assessment the results in the conclusion/discussion)

Grading considerations:

- Topic and references (30%)
- Content (30%) – knowledge of subject, scientific data, accuracy, relevance, focus, detail
- Organization and clarity (20%) – flow, coherence, conciseness
- Structure and mechanics (20%) – grammar and usage, spelling, terminology, sentence and paragraph structure, punctuation, format

Learning Resources:

Below are a few resources for locating information. You are encouraged to utilize the interlibrary loan system available through the TAMUS library to obtain free articles from journals not in the PVAMU library or e-Databases. The PVAMU campus Library e-Databases are an excellent resource. Either the Librarian or myself can show you how to access these tools. Industry magazines, extension fact sheets, textbooks, and other reliable publications are also good resources.

PVAMU Library:

- Phone: 936-261-500
- Website: <http://www.tamu.edu/pvamu/library/>

Search websites

- National Library of Medicine ([www.pubmed.gov](http://www.pubmed.gov))
- Google ([www.google.com](http://www.google.com))
- Google Scholar ([scholar.google.com](http://scholar.google.com))
- National Agriculture Library ([agricola.nal.usda.gov](http://agricola.nal.usda.gov))

Journals related to animal breeding and genetics

- Animal Genetics
- Journal of Animal Breeding and Genetics
- Small Ruminant Research
- Reproduction and Fertility
- Biology of Reproduction

## University Rules and Procedures

**Disability statement (See Student Handbook):** Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator.

**Academic misconduct (See Student Handbook):** You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

### **Forms of academic dishonesty:**

1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.
2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.
3. Fabrication: use of invented information or falsified research.
4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.

**Nonacademic misconduct (See Student Handbook):** The University respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. The Dean of Students under nonacademic procedures will adjudicate such incidents.

**Sexual misconduct (See Student Handbook):** Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

**Attendance Policy:** Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class.

**Student Academic Appeals Process:** Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

**Course Calendar:** See below calendar (subject to change)