



## **ANIMAL BREEDING ANS 309.01E**

Fall 2026  
TR 8:00-9:15  
Location

### **INSTRUCTOR INFORMATION**

Instructor: **Dr. Douglas Eborn**  
Office Location: **AG/ET 233D**  
Office Hours: **MTW 1:00-3:00**  
Office Phone: **903.886.5676**  
Office Fax: 903.886.5990  
University Email Address: **Douglas.Eborn@etamu.edu**  
Preferred Form of Communication: **Email**  
Communication Response Time: **24 hours**

### **COURSE INFORMATION**

Materials – Textbooks, Readings, Supplementary Readings

**Suggested Textbook:** Understanding Animal Breeding, 2<sup>nd</sup> Edition (2000)

Author: Richard M. Bourdon

Publisher: Prentice Hall Publishing

ISBN-10: 0130964492 | ISBN-13: 978-0130964496

The textbook listed above is the source for much of the material that will be presented in class with some exemptions. It *is not required* but may be useful for supplementary reading and practice problems.

*The syllabus/schedule are subject to change.*

## Course Description

The aim of this course is to address methods used to improve livestock genetically. This begins by selection of individuals based on genetic merit followed by mating strategies to create particular genetic combinations. Topics covered include heritability and estimation of breeding values, basic population genetics and the use of inbreeding/crossbreeding in mating systems. The use of genomics and DNA markers will also be addressed.

Prerequisites:     ANS 1319 Introduction to Animal Science and  
                          MATH 1314 US-College Algebra

## Student Learning Outcomes

Students successfully completing the course should be able to:

1. Explain and define all breeding and genetics terms presented in lecture.
2. Describe Mendelian inheritance, the components of the genetic model, and difference between qualitative and quantitative traits.
3. Calculate population gene and genotypic frequencies.
4. Calculate the probability that an individual is a carrier of a particular gene and understand how those changes depending on the group of females the sire is mated to.
5. Calculate estimates of statistical parameters necessary to describe a population and understand the application of each.
6. Explain the cause and effects of hybrid vigor and inbreeding depression.
7. Describe different selection methods including tandem selection, independent culling methods and selection index methods.
8. Describe how marker-assisted selection works and how it impacts genetic predictions today.
9. Explain what breeding values are and how they estimated. Demonstrate how EPDs are to be used appropriately.

## COURSE OVERVIEW

### Course material

Course material will be provided in face-to-face lectures during the scheduled course time. Copies of the lecture slides will also be provided to download and print either before or after lecture.

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# COURSE SPECIFIC PROCEDURES/POLICIES

## Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

## General Guidelines

1. Attentiveness in class is suggested but not required. However, if you choose otherwise, do not:
  - Talk to your neighbors
  - Use an electronic device or text

## Attendance/Lateness

Attendance is expected and will be taken at the beginning of class. Future opportunities such as potential extra credit assignments may be based on attendance.

## Exams

4 exams will be given throughout the semester including the comprehensive final. Questions will include T/F, multiple choice, matching, short answer, and fill in the blank. Exams and quizzes will require math so you will need to bring a simple calculator. In addition, each exam may include a “take-home” or project-based section. Instructions and due dates for the additional work will be provided.

All students are to take the in-class exams at the time they are scheduled unless you have an approved excuse. If a makeup is written it may be more difficult, not easier, for the student.

### Tentative Exam Dates

Tuesday September 15<sup>th</sup>

Tuesday October 13<sup>th</sup>

Tuesday November 10<sup>th</sup>

**Final:** Tuesday, December 8<sup>th</sup> 8:00 A.M.

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## Quizzes

Online quizzes will be given weekly. In class quizzes announced or unannounced may also be given. No late quizzes will be accepted. 1 or 2 quizzes will be dropped at the end of the semester.

## Assignment

Homework will be given regularly throughout the semester. This will include math problems such as gene frequencies, probabilities, and simple calculation of breeding values. In each instance examples will be provided with answer keys. Also, homework may include assignment to use and compare EPDs in different breeds or species.

## Due Dates/Late or Missing Work

Due dates for exams/quizzes/assignments will be given during class, posted on the D2L course page, and by email. If a student is unable to meet the due date, they must contact the instructor prior to seek accommodations.

All students are to take the in-class exams at the time they are scheduled unless you have a great excuse or made prior arrangements with the instructor. If an exam is given at a different time, an alternative makeup exam may be more difficult, not easier, for the student.

The student must take responsibility to notify the instructor in a timely matter for consideration and accommodation due to school activities, emergencies, or other circumstances. Validation may be required.

**Late Work:** Late homework may be turned in by the following class period for 50% deduction.

## Grading

Final grades in this course will be based on the following scale:

|                |                  |
|----------------|------------------|
| Exams = 50%    | A = 90%-100%     |
| Quizzes = 25%  | B = 80%-89%      |
| Homework = 25% | C = 70%-79%      |
|                | D = 60%-69%      |
|                | F = 59% or below |

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## COURSE CALENDAR

|            |          |                              |
|------------|----------|------------------------------|
| 8/20/2026  | Thursday | #1 Intro to Animal Breeding  |
| 8/25/2026  | Tuesday  | #2 Selection                 |
| 8/27/2026  | Thursday | #3 Mendelian Genetics        |
| 9/1/2026   | Tuesday  | #3 Mendelian Genetics        |
| 9/3/2026   | Thursday | #4 Population Genetics       |
| 9/8/2026   | Tuesday  | #4 Population Genetics       |
| 9/10/2026  | Thursday | Catch Up/Exam Review         |
| 9/15/2026  | Tuesday  | <b>Exam #1</b>               |
| 9/17/2026  | Thursday | #5 Selection - Simply Inher  |
| 9/22/2026  | Tuesday  | #6 Genetic Model for Quan    |
| 9/24/2026  | Thursday | #6 Genetic Model for Quan    |
| 9/29/2026  | Tuesday  | #7 Statistics                |
| 10/1/2026  | Thursday | #8 Heritability              |
| 10/6/2026  | Tuesday  | #9 Repeatability             |
| 10/8/2026  | Thursday | Fall Break                   |
| 10/13/2026 | Tuesday  | <b>Exam #2</b>               |
| 10/15/2026 | Thursday | #10 Genetic Prediction       |
| 10/20/2026 | Tuesday  | #10 Genetic Prediction       |
| 10/22/2026 | Thursday | #11 Rate of Genetic Change   |
| 10/27/2026 | Tuesday  | #12 Large Scale Evaluation   |
| 10/29/2026 | Thursday | #13 EPDs                     |
| 11/3/2026  | Tuesday  | #13 EPDs                     |
| 11/5/2026  | Thursday | Catch Up/Exam Review         |
| 11/10/2026 | Tuesday  | <b>Exam #3</b>               |
| 11/12/2026 | Thursday | #14 Pedigree Matings         |
| 11/17/2026 | Tuesday  | #15 Inbreeding Coefficient   |
| 11/19/2026 | Thursday | #16 Outcrossing              |
| 11/24/2026 | Tuesday  | #17 Crossbreeding Systems    |
| 11/26/2026 | Thursday | Thanksgiving Break           |
| 12/1/2026  | Tuesday  | #18 Marker Assisted Selec    |
| 12/3/2026  | Thursday | Last Class Day               |
| 12/8/2026  | Tuesday  | <b>Final Exam 8:00-10:00</b> |

## TECHNOLOGY REQUIREMENTS

*The syllabus/schedule are subject to change.*

## LMS

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

[https://documentation.brightspace.com/EN/brightspace/requirements/all/browser\\_support.htm](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)

Zoom Video Conferencing Tool

[https://inside.etamu.edu/campuslife/CampusServices/CITESupportCenter/Zoom\\_Account.aspx?source=universalmenu](https://inside.etamu.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu)

## ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or [helpdesk@etamu.edu](mailto:helpdesk@etamu.edu).

**Note:** Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a East Texas A&M campus open computer lab, etc.

## COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your instructor.

### Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

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## **STUDENT RESPONSIBILITIES FOR COURSE**

### **CWID and Password**

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or [helpdesk@etamu.edu](mailto:helpdesk@etamu.edu).

### **Technology-Related Issues**

Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a ETAMU campus open computer lab, etc.

## **TECHNOLOGY REQUIREMENTS AND SUPPORT**

### **Minimal Technical Skills Needed**

Students will need reliable computer and internet access for this course. Students must be able to effectively use myLeo email, myLeo Online D2L, and Microsoft Office.

### **Learning Management System (LMS) – D2L**

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are the technical requirements:

- View the [Learning Management System Requirements Webpage](#).
- Learn more on the [LMS Browser Support Webpage](#).

### **Technical Support**

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found on the [Brightspace Support Webpage](#).

## **COMMUNICATION AND SUPPORT**

### **Interaction with Instructor Statement**

If you have any questions or are having difficulties with the course material, please contact your instructor. Correspondence will always be through university email (your “myLeo” mail) and announcements in myLeo online (D2L). You will not RECEIVE email through D2L, so be sure to check your ETAMU email for communication. Students are encouraged to check university email daily.

### **Include the Following in Emails with Instructor:**

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- Course name and subject in the subject line
- Salutation (Good afternoon, Dr. Jackson)
- Proper email etiquette (no “text” emails – use proper grammar and punctuation)
- Student name and CWID after the body of the email (possibly add to student signature on email)

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

### **University Specific Procedures**

#### **Syllabus Change Policy**

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

#### **Student Conduct**

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.

<https://inside.etamu.edu/admissions/registrar/documents/studentGuidebook.pdf>.

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:

<https://www.britannica.com/topic/netiquette>

#### **ETAMU Attendance**

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedures 13.99.99.R0.01](#)

<http://www.etamu.edu/admissions/registrar/generalInformation/attendance.aspx>

#### **Academic Integrity**

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty University Procedure 13.99.99.R0.03](#)

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[Undergraduate Student Academic Dishonesty Form](#)

[Graduate Student Academic Dishonesty University Procedure 13.99.99.R0.10](#)

[Graduate Student Academic Dishonesty Form](#)

## **Use of Artificial Intelligence**

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources

## **Students with Disabilities-- ADA Statement**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

### **Office of Student Disability Resources and Services**

East Texas A&M University  
Velma K. Waters Library Rm 162  
Phone (903) 886-5150 or (903) 886-5835  
Fax (903) 468-8148  
Email: [studentdisabilityservices@etamu.edu](mailto:studentdisabilityservices@etamu.edu)

Website: [Student Disability Services](#)

<https://www.etamu.edu/student-disability-services/>

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## **Nondiscrimination Notice**

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

## **Campus Concealed Carry Statement**

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and ETAMU Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

## **East Texas A&M Supports Students' Mental Health**

The Counseling Center at East Texas A&M University, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit [www.etamu.edu/counsel](http://www.etamu.edu/counsel)

## **Mental Health and Well-Being**

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code to download the app and explore the resources available to you for guidance and support whenever you need it.



<http://telusproduction.com/app/5108.html>

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