AGRI 2500

Division: Natural Science and Mathematics
Department: Agriculture
Course: AGRI 2500
Title: Animal Breeding
Catalog Description:

Reproductive physiology and artificial insemination will be covered as well as basic genetic and inheritance interactions. Principles involved in breeding animals including mating systems, performance testing and progeny testing will be examined. Students will be introduced to production selection principles such as indexing, genetic selection, keep/cull criteria and other methods for the improvement of farm animals.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 4; Lecture: 4; Lab: 0
Clock/Hour Requirements: 0
Offered for Non-Credit: No
Justification:

Animal breeding is an important activity in the animal science industry. Evaluating genetic potential and selection of breeding animals are important activities as man tries to influence change in animals. For the producer, selection principles such as standardizing weights, or knowing methods to determine whether to keep or cull breeding animals are important. Large animal and poultry production is becoming more and more intensively managed and the need to produce genetically superior animals that can cope with today s management systems is becoming increasingly important. The class covers the basics of reproductive physiology, a review of practical animal genetics and selection principles.
This class articulates as AGSC 3500 at SUU and can be substituted at USU for ADVS 4560 for some majors

Student Learning Outcomes:

As a result of taking this course, students will:

- be familiar with the anatomy and physiology of the male and female reproductive tracts of domestic animals and their basic function
- have a basic understanding of artificial insemination techniques
- have a basic understanding of estrus, pregnancy, gestation, and parturition
- have a basic understanding of cells and chromosomes and gametes as they relate to cell division, fertilization and new individuals
- be aware of the basic concept of gene frequency and qualitative and quantitative inheritance and the importance of measurement

- be aware of the variation in the economic traits of farm animals
- have an understanding of the keep/cull decisions that a livestock producer has to make
- be aware of selection principles and systems of breeding in beef cattle, sheep, dairy, swine and horses

Content:

- Anatomy of domestic animal male and female reproductive tracts
- Physiology of the male and female reproductive systems, mainly cattle, sheep, swine, horses, poultry and companion animals
- Determining estrus, fertilization, gestation and parturition
- Synchronizing estrus, artificial insemination and embryo transfer
- Caring for young at parturition
- Genetics and environment interactions
- Methods of inheritance
- Simple genetic problems as they relate to farm animals
- Heritability estimates and the transferring of traits
- Industry genetic developments
- Animal performance measures
- Repeatability and probable producing ability
- Predicted difference
- Standardizing weights
- Predicting genetic change
- Performance testing and evaluation
- Simple statistical evaluation of group performance
- Mating systems, crossbreeding, inbreeding, line breeding
- AI breed books and sire analysis

Field trips are also taken to local agricultural operations Students are assigned to write up and hand in a summary of each visit or field trip.

General Education Outcomes:

6) Apply computational skills to a variety of contexts.

Students use basic math to make animal comparisons and predictions. Calculations to estimate the rate of genetic change, standardizing weights and calculating probable producing ability are some of the math computations encountered. Math is used to determine keep/cull decisions in practical situations.

Key Performance Indicators:

Overall assessment will be made on the following criteria:

- Scores on faculty developed written tests, short answer and short essay ---- 45%
- Scores on quizzes from previous lecture material 10%
- Individual project, poster and presentation 10%
- Homework assignments ---------- 25%
- Class presentation of current events ---------- 10%

Representative Text and/or Supplies:

A set of animal science booklets published by Texas A&M supplemented by other reference material located in the agriculture lab.

Optimum Class Size: 24
Maximum Class Size: 30

Signatures:

I hereby submit this course syllabus:

Jack Anderson, , Professor

I hereby find this course consistent with the goals and resources of the Agriculture Department:

, , , Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)