

# Animal Science 4543

## Dairy Cattle Science

### Class Syllabus

Spring, 2009

**Dr. Ron Kensinger**

Professor and Head of Animal Science, 101 AN SI, [ron.kensinger@okstate.edu](mailto:ron.kensinger@okstate.edu)

Graduate Assistants:

Kyle Thompson, 202 Animal Science, 744-7066

Evin Sharman, 209 Animal Science, 744-7362

<b>Date</b>	<b>Day</b>	<b>Topic</b>
<b>Class Organization and Introduction to Dairy Production</b>		
1-13	Tues	Class Introduction
1-15	Thur	Oklahoma and U.S. Dairy Industry Scope and Trends
1-16	Fri	Phases of production and life cycle ( <i>201 4-H</i> )
<b>Nutrition and Feeding</b>		
1-20	Tues	Introduction to feeding systems
1-22	Thur	Forages
1-23	Fri	<b>Lab</b> Feed analysis (Determining feed composition) ( <i>201 4-H</i> ) Assign Producer for Phone Interview
1-27	Tues	Water and Energy
1-29	Thur	Carbohydrates (and grain processing)
1-30	Fri	<b>Lab</b> Dairy cattle behavior and handling ( <i>OSU Dairy farm</i> )
2-3	Tues	Protein nutrition
2-5	Thur	Lipids in dairy nutrition
2-6	Fri	<b>Lab</b> Feed particle size/Dig./Manure/Rumination ( <i>OSU Dairy farm</i> )
2-10	Tues	Vitamins/Minerals
2-12	Thur	Byproduct Feeding
2-13	Fri	<b>Lab</b> Hot Topic in Feeding ( <i>201 4-H</i> )
2-17	Tues	Feed additives
2-19	Thur	Introduction to ration balancing
2-20	Fri	<b>Lab</b> Dairy Ration Balancing

2-24 Tues **EXAM 1**

### **Life Cycle Management**

2-26 Thur Baby Calf Management

2-27 Fri **Lab** Calf management and measurements (*OSU Dairy farm*)  
Assign Farm Skills

3-3 Tues Growing heifer management

3-5 Thur Dry cow management

3-6 Fri **Lab** PCDART and dairy record analysis (*OSU Dairy farm*)

3-10 Tues Fresh cow and early lactation management

3-12 Thur Milk Secretion

### **Animal Health and Welfare Management**

3-13 Fri **Lab** Cow health (CMT, temp, locomotion score etc.) (*OSU Dairy*)

**Spring Break**.....3-14-09 until 3-22-09

3-24 Tues Reproductive management

3-26 Thur Mastitis and Milk quality

3-27 Fri **Lab** Dairy cattle judging/Linear scoring (*OSU Dairy*)

3-31 Tues Housing systems

4-2 Thur Foot and hoof health

4-3 Fri **Lab** Adopt a cow evaluation day (*OSU Dairy*)

4-7 Tues Dairy cattle genetics and selection

4-9 Thur **EXAM 2**

Farm Skills Summary Due

### **Dairy Farm Evaluation and Economics**

4-10 Fri **Lab** Dairy Farm Case Study (*201 4-H*)

4-14 Tues Introduction to Benchmarking

4-16 Thur Milk Marketing

4-17 Fri **Lab** Global dairy industry perspective (*201 4-H*)

4-21 Tues Waste management

4-23 Thur Dairy business evaluation

4-24	Fri	<b>Lab</b> Farm Visits (Saturday?)
4-28	Tues	Farm evaluation presentations
4-30	Thur	Farm evaluation presentations
5-1	Fri	Course Summary
5-7	Thur	<b>FINAL EXAM (2:00-3:50 PM)</b>

**Course Objectives:**

1. AN SI 4543 will serve as the capstone course in dairy herd management. Course will use information from student's previous courses in animal science, nutrition, physiology, genetics, and agribusiness and relate these to principles of modern dairy farm management.
2. Provide exposure to and practical experience with facilities, software, systems, and management practices currently in use in the dairy industry.
3. Provide practice in evaluating the adequacy of dairy herd management practices and making recommendations for change or improvement.
4. Provide practice in collecting and organizing information about dairy management from a variety of sources and presenting this information clearly in both written and verbal formats.

**Credit:** 3 hours

**Meets:** Tuesday and Thursday: 2-2:50 (ANSI 125)  
Friday 1:30-5:20 (4HYD 201 or OSU Dairy Farm)

**Prerequisites:**

ANSI 3433 (Animal Breeding), ANSI 3443 (Animal Reproduction), and ANSI 3653 (Applied Animal Nutrition), or consent of instructor.

**Attendance:**

Required. Students should inform Dr. Kensinger of planned absences.

**Exams:**

Exams will include a variety of questions. The exam format will include multiple choice, calculations, and short answer/essay questions. All exams will be cumulative and will include practical applications of knowledge learned throughout the semester.

**Projects:**

*P1. Interview a Dairy Industry Representative.* The objective is to gain first hand experience in communicating with producers or agribusiness personnel and to discover more about their philosophy and perspective regarding the future of the Oklahoma Dairy Industry.

*P2. Farm Skills.* A practical experience at the OSU dairy cattle center during which students will obtain experience handling, evaluating, and milking dairy cattle. Pedigree and production records will be available for evaluation. A short report will serve as a means of evaluation. Your report will include body condition scores, locomotion scores, fecal scores, keep/cull, production summary, life cycle analysis, and net profitability.

*P3. Dairy Farm Consultation.* Students will be split into small groups and assigned a topic (nutrition, reproduction, waste management, milking facility etc.) to evaluate a farm. Students will prepare a written report for the producer and the instructor and present an oral report to the class that includes:

- a. Positive aspects of the dairy farm
- b. Concerns about the dairy farm
- c. Recommendations for improvement of the farm business

**Evaluation Item:**

**Points Possible**

1 <sup>st</sup> hour exam	100
2 <sup>nd</sup> hour exam	100
Final exam	100
Farm skills assignment	25
Dairy industry interview	25
Farm Evaluation	25
Attendance and Participation	25

400 Total points

**Planned Grading Scale:**

- A >90
- B 80 – 89.9
- C 70 – 79.9
- D 60 – 69.9
- F < 60