

ANS 6932 - DAIRY CATTLE REPRODUCTION

Spring 2024 Syllabus



FLORIDA INTERNATIONAL
DAIRY ACADEMY

DEPARTMENT OF ANIMAL SCIENCES

Class Periods: Online, up to three topics per week

Academic Term: Spring 2024

Instructor:

This will be an online course involving faculty and staff from the Dept. of Animal Sciences. The course will be instructed by Mariângela B C Maldonado and coordinated by Peter J Hansen. Contact information are as follows:

Mariângela B C Maldonado (main contact)

buenocordeirom.m@ufl.edu

Peter J Hansen

pjhansen@ufl.edu

Faculty collaborators:

José Santos, Rafael Bisinotto, John Bromfield, Albert De Vries, Klibs Galvão, Fiona Maunsell

Summary

This course focuses on dairy cattle reproduction, including reproductive management, fertility monitoring and key fertility problem areas.

Course Description

This is an 8-week course which consists of up to 3 topics per week. The lectures can be viewed at the student's convenience during the week, but all material should be covered prior to assessment.

Requirements

Consent of instructor is required, and enrollment will be limited.

Communication

Email will be used as the major method for communicating. Therefore, provide Dr. Maldonado with your email address if one is available. Dr. Maldonado's email is buenocordeirom.m@ufl.edu

Course Objectives

Lactation depends upon successful reproduction. Accordingly, the economics of dairy farming depends upon. This course is designed to give the successful student the tools needed to develop on-farm programs to optimize reproductive function on the dairy farm. After completion of the course, the student should 1) understand the biology of reproduction in cattle, 2) learn management approaches and techniques for detection of estrus and hormonal control of the estrous cycle to program the timing of estrus and ovulation, 3) understand management strategies for achieving pregnancies in first service lactating cows, resynchronized cows and heifers, 4) gain an appreciation for the epidemiology and management of anovular cows and how to reduce pregnancy loss, 5) learn how to measure reproductive performance, 6) understand the application of new reproductive technologies for dairy cattle reproduction, 7) learn management approaches to reduce the impact of heat stress on reproduction, 8) appreciate the role of genetics and genetic selection for determining reproductive performance, 9) learn how to minimize reproductive diseases through proper vaccination programs, 10) acquire knowledge on nutritional strategies to improve reproduction, and 11) understand the connection between reproduction and the economics of dairy production.

Course Schedule

Week 1 (Feb. 5-9)

Overview of reproduction in the dairy cow – Hansen
The estrous cycle (two lectures) – Hansen

Week 2 (Feb. 12-16)

Ovulation, fertilization and early embryonic development (three lectures) – Bromfield
Maintenance of pregnancy and placentation – Bromfield

Week 3 (Feb. 19-23)

Puberty in the female and postpartum reproduction – Hansen
Estrus – its expression and detection – Bisinotto
Artificial insemination – Hansen
Exam 1 – February 23 (material covers weeks 1 to 3)

Week 4 (Feb. 26 to Mar. 1)

Hormonal control of the estrous cycle for the synchronization of estrus – Santos
Hormonal control of the estrous cycle for the synchronization of ovulation – Santos
Implementing reproductive programs for first AI in lactating cows – Santos

Week 5 (Mar. 4-8)

Implementing reproductive programs for resynchronization in lactating cows – Santos

Implementing reproductive programs for dairy heifers – Santos

Anovular cows – epidemiology, management and mechanisms – Bisinotto

Exam 2 – March 8 (material covers weeks 4 and 5)

Week 6 (Mar. 18-22)

Pregnancy loss – epidemiology, management and mechanisms – Santos

Metrics for evaluating reproductive performance – Bisinotto

Embryo transfer – Hansen

Week 7 (Mar. 25-29)

Impacts and mitigation of heat stress on reproduction – Hansen

Genomics and genetics of reproduction – Hansen

Vaccination programs to reduce reproductive diseases – Maunsell

Week 8 (Apr. 1-5)

Nutritional strategies for reproduction (two lectures) – Santos

Economics of reproduction (two lectures) – De Vries

Economics of reproduction (two lectures) – Galvão

Exam 3 – April 5 (material covers week 6 to 8)

Expectations, and Make-Up Policy

The lectures can be viewed at the student's convenience during the week, but all material should be covered prior to exams. Conflicts that prevent students from taking an exam as scheduled should be discussed with the instructor.

Evaluation of Grades

Pass/fail

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the

following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code

(<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university’s counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/
 - Counseling Services
 - Groups and Workshops
 - Outreach and Consultation
 - Self-Help Library
 - Training Programs
 - Community Provider Database
- Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/