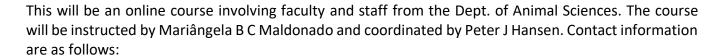
# ANS 6932 - DAIRY CATTLE REPRODUCTION

# **Spring 2024 Syllabus**

**Class Periods:** Online, up to three topics per week

Academic Term: Spring 2024





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# **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/



