



FLORIDA INTERNATIONAL  
DAIRY ACADEMY

DEPARTMENT OF ANIMAL SCIENCES

# LACTATION PHYSIOLOGY

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## Instructor

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## Course Description

This course will offer insights into the endocrinology and physiology of the defining characteristics of mammals: the mammary gland and lactation, focusing on the anatomy and development of the mammary gland with an overview of the biochemical, cellular and molecular processes controlling lactation, emphasizing livestock species, particularly the dairy cow.

The course is ideal for individuals who have been working with dairy cows and are looking to increase their knowledge of mammary biology, or those that have had some training but want a refresher and some updated information on lactation physiology.

## Course Layout

This 4-week course will be delivered via the Canvas course system. The major course topics will be separated into 4 separate modules according to the schedule below. Within each module there will be a series of recorded lectures that are approximately 50 minutes each. There will be questions embedded in each lecture to gauge understanding. Also, there will be recommended readings to accompany each topic in a module. You will be required to complete the previous module before moving to the next.

## Course Schedule

Week	Modules	Lectures
1	Module 1	<ul style="list-style-type: none"> <li>• Mammary anatomy I: macrostructure, microstructure</li> <li>• Mammary anatomy II: circulatory, lymphatic and neural systems</li> <li>• Endocrinology of lactation I: hormones &amp; receptors, hypothalamus, pituitary</li> </ul>
2	Module 2	<ul style="list-style-type: none"> <li>• Endocrinology of lactation II: reproductive &amp; metabolic hormones</li> <li>• Mammary gland development I: fetal through puberty</li> <li>• Mammary gland development II: post-puberty through involution</li> </ul>
3	Module 3	<ul style="list-style-type: none"> <li>• Neuroendocrine control of lactation</li> <li>• Lactogenesis</li> <li>• Galactopoiesis</li> </ul>
4	Module 4	<ul style="list-style-type: none"> <li>• Metabolic support of lactation</li> <li>• Colostrum and milk composition</li> <li>• Involution</li> </ul>

### 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 of 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.

## Certificate of Completion

A Certificate of Completion will be awarded upon successful completion of all modules and viewing of all required videos. This course is designed for self-paced learning, allowing students to progress through the material at their own speed. Students will have indefinite access to the course, enabling them to revisit the content at any time for continued learning and reference. We encourage students to engage with the material thoroughly to maximize their understanding of information provided.

### *Dairy AdvanCE Continuing Education*

Students earning continuing education credit through Dairy AdvanCE will be awarded credit only after course has been 100% completed. Please allow time for processing. Contact [fida@ifas.ufl.edu](mailto:fida@ifas.ufl.edu) for any questions or concerns.

This course will award 8 CEUs.