

## **ANS3319C – Reproductive Physiology and Endocrinology in Domestic Animals**

### **Course coordinator:**

Dr. John Bromfield

Office Hours: M, W, F @ 11:30 AM and by appointment.

Room 122D Dairy Science building.

[jbromfield@ufl.edu](mailto:jbromfield@ufl.edu)

Ph: 352-294-6991



### **Laboratory instructor:**

Justin Callaham

Office Hours: Before and after class, by appointment (see lab syllabus)

Room 210E Animal Science building

[callaham@ufl.edu](mailto:callaham@ufl.edu)

Ph: 352-294-6754

### **Lectures:**

Monday, Wednesday, & Friday (Period 4) 10:40 – 11:30 AM, Animal Sciences, Room 156.

### **Labs:**

Monday, 12:50 – 2:45 (Periods 6 & 7), 3:00 – 4:50 (Periods 8 & 9);

Tuesday, 12:50 – 2:45 (Periods 6 & 7), 3:00 – 4:50 (Periods 8 & 9);

Wednesday, 12:50 – 2:45 (Periods 6 & 7), 3:00 – 4:50 (Periods 8 & 9)

### **Course Objectives:**

- 1) Familiarize students with the reproductive anatomy, physiology, & endocrinology of male & female domesticated animals including the cow, pig, horse, sheep, cat, dog, and human.
- 2) Introduce and discuss the interrelationships between reproductive hormones produced by the brain and reproductive glands and how they interact to control the reproductive processes of male and female domesticated animals including the cow, pig, horse, sheep, cat, dog, and human.
- 3) Utilize the knowledge learned from Objectives 1 and 2 to introduce and discuss reproductive management practices that optimize reproductive efficiency of domesticated animals and humans.

### **Textbook:**

*"Pathways to Pregnancy and Parturition"* (3rd Edition 2012, P. L. Senger) is required since we will lecture directly from it in addition to extensive use of pictures & diagrams. There is a copy of the textbook on reserve in the Marston Science Library on main campus. A laboratory manual will be distributed in class and posted on Canvas. Students are responsible for reading handouts before lab and bringing handouts to lab.

### Grading & Exams:

Your final grade will consist of lecture exams, online quizzes, lab exercises, and a comprehensive final exam.

**All exams and quizzes are closed book and do not permit any additional resources.**

Actual grades on all exercises will be the sum of the points received for correct responses as a percentage of total points possible. Final course grades will be based on the following percentage grade scale:

	<b>B+</b>	≥87 to <90	<b>C+</b>	≥77 to <80	<b>D+</b>	≥67 to <70	<b>F</b>	< 60
<b>A</b>	≥94	<b>B</b>	≥80 to <87	<b>C</b>	≥70 to <77	<b>D</b>	≥60 to <67	
<b>A-</b>	≥90 to <94							

<b>Final Grade Components</b>	<b>% final grade</b>
Three lecture exams (100 pts each)	40%
Four online quizzes (25 pts each)	10%
Lab grade (9 labs @ 50 pts each, two lab exams @ 200 pts each)	30%
Comprehensive final exam (200 pts)	20%

Information regarding University Policy on grade point equivalencies and calculation of grade points is located at (<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>).

### Lecture exam dates:

Exam 1: Feb 10<sup>th</sup> (Friday); Exam 2: March 10<sup>th</sup> (Friday); Exam 3: April 7<sup>th</sup> (Friday). *Lecture exam dates are tentative and can change at the discretion of the instructor.*

Final Exam: May 2<sup>nd</sup> (Tuesday @ 3:00 – 5:00 PM).

Exam and quiz questions will be true/false, multiple choice, matching, short answer, and essay. For short answer and essay questions, a legible, organized, concise and grammatically correct answer will be expected in order to receive full credit. Outlining answers into pertinent points is acceptable and the suggested method of answering questions provided that the interrelationships between points are indicated. Lecture exams/quizzes will cover all material presented in the textbook, lecture, and labs.

Exams, quizzes and assignments will be posted under the Assignment tab on the Canvas website <https://ufl.instructure.com/>. All quizzes will be conducted on Canvas using LockDown Browser. Reliability and preparation of internet connections are the student's responsibility. Approximately one weeks' notice will be given for the due date of quizzes. Quizzes will be available online for a 24 hour period and can only be taken once.

All exams will be held in person on the specified date during normal classroom hours. The use of different interfaces for graded activities may change at the instructor's discretion.

**Important Dates:**

No class

Jan 16<sup>th</sup> (Martin Luther King Jnr Day).

Mar 11<sup>th</sup> to 18<sup>th</sup> (Spring break).

Other significant dates:

Jan 9<sup>th</sup>: Class begins.

Jan 13<sup>th</sup>: End of drop/add.

Feb 3<sup>rd</sup>: Deadline to withdraw and receive a 25% fee refund (W assigned).

April 14<sup>th</sup>: Deadline to withdraw without receiving failing grades.

April 26<sup>th</sup>: Last day of class.

April 27<sup>th</sup> & 28<sup>th</sup>: Reading days.

April 29<sup>th</sup> to May 5<sup>th</sup>: Final exams.

## Lecture Schedule

*The schedule below is tentative regarding the dates and topics to be covered; this schedule can change at the instructor's discretion.*

<b>Week</b>	<b>Date</b>	<b>Assignment</b>	<b>Topic</b>
1	01/09 – 01/13		Introduction / Female Anatomy
2	01/16 – 01/20	<i>MLK Day</i>	Female Anatomy / Male Anatomy
3	01/23 – 01/27		Male Anatomy / Reproductive Endocrine System
4	01/30 – 02/03		Reproductive Endocrine System
5	02/06 – 02/10	<b>Exam 1 (Fri)</b>	Puberty
6	02/13 – 02/17		Spermatogenesis
7	02/20 – 02/24		Spermatogenesis / Semen Collection
8	02/27 – 03/03		Mating behavior / Estrous Cycle
9	03/06 – 03/10	<b>Exam 2 (Fri)</b>	Estrous Cycle
10	03/13 – 03/17	<i>Spring Break</i>	
11	03/20 – 03/24		Estrous Cycle / Sperm Transport
12	03/27 – 03/31		Early Pregnancy – Ovulation, Corpus Luteum, Maternal Recognition of Pregnancy
13	04/03 – 04/07		Embryo Development, Placentation
14	04/10 – 04/14	<b>Exam 3 (Fri)</b>	Placentation / Fetal Growth
15	04/17 – 04/21		Parturition and Postpartum Period / Lactation
16	04/24 – 04/28	<i>Reading Days</i>	Reproductive Management / Reproductive Technologies
	05/02	<b>Final Exam</b>	Tuesday 3:00 – 5:00 PM

# ANS3319C – Reproductive Physiology and Endocrinology in Domestic Animals

## **Laboratory**

### **Instructor:**

Justin Callaham

Office Hours: M, W, F @ 10:00 AM, By appointment, or before and after lab.

Room 210E Animal Sciences (BLDG 459)

[callaham@ufl.edu](mailto:callaham@ufl.edu)

Ph: 352-294-6754

**I am committed to your success. If I am in my office and my door is open, I am happy to visit with students at any time.**

### **Laboratory Schedule, Instructor(s), & TA's:**

<b><u>Monday, 12:50 – 2:45 PM (RM67)</u></b> Justin Callaham  Teaching Assistant(s): TBD	<b><u>Tuesday, 12:50 – 2:45 PM (RT67)</u></b> Justin Callaham  Teaching Assistant(s): TBD	<b><u>Wednesday, 12:50 – 2:45 PM (RW67)</u></b> Justin Callaham  Teaching Assistant(s): TBD
<b><u>Monday, 3:00 – 4:55 PM (RM89)</u></b> Justin Callaham  Teaching Assistant(s): TBD	<b><u>Tuesday, 3:00 – 4:55 PM (RT89)</u></b> Justin Callaham  Teaching Assistant(s): TBD	

## **Laboratory Objectives**

- The primary objectives of lab are to provide hands-on activities with live animals, dissection of tissues harvested from deceased animals, and operating laboratory and technical equipment frequently used in reproductive biology.
- To provide experiential learning that includes manipulation, dissection, animal handling and laboratory techniques concerning the anatomy and physiology of reproductive physiology in large animals.
- To develop skills and understanding of the basic principles of collection, evaluation, extension, and freezing of semen from farm animals.
- To introduce the concept of early embryonic development and provide hands-on experience dissecting pregnant reproductive tracts from the bovine and porcine.
- To develop skills and understanding of estrous synchronization, artificial insemination, embryo collection, embryo freezing, reproductive ultrasonography, and pregnancy diagnosis in the bovine, porcine, and equine species.

## **ANS3319C – Reproductive Physiology and Endocrinology in Domestic Animals**

### **Lab Policies**

- Communication is very important. If you have any questions or problems, please reach out to your **lab** instructor(s) as soon as possible.
- Class begins promptly at the designated start times. Students will be marked absent if more than 10 minutes late. Students with course conflicts should notify an instructor as soon as possible if you have an issue.
- **Working with livestock** will require students to adhere to handling practices provided by the instructor either in written or verbal format. Animals are capable of injuring people, especially when they are in the flight or fight mode inspired by a stressful situation. The instructor will work to provide students with the ability to manage livestock with minimal stress, thus lowering the risk of injury to people and animals.

### **Weekly Laboratory Activities**

- **Reading** – the lab utilizes a lab manual that provides general reading about each week's lab topic. Lab manual chapters are released each week in CANVAS in the laboratory home page.
- **Take Home Messages** – each lab topic has an associated homework assignment designed to ensure students retention of important information that should be taken away from each week's lab. These assignments will assist students in preparing for the 2 lab practical examinations.
- **In lab experiential activities** – each lab topic has an associated hands-on learning component to expose students to laboratory bench top skills and concept reinforcement. Review the laboratory schedule for dates, locations, and topics for these F-2-F sessions. **Students must attend their specific enrolled section to participate in each week's lab activities. Attendance is required to receive credit for weekly graded exercises.**
- **Pre-Lab Activities** – students will be presented with various activities both in lab and in CANVAS. These activities may include in lab quizzes, videos, and augmented reality exercises.
- Lab activities will include dissection of reproductive tissues including brain, male, female animal tracts obtained from the abattoir. You will be required to dissect and study these tissues in lab. The utilization of live animals and dissection of tissues are central to effective learning and enhancement of your lab experience.

### **Assignment Deadlines and Submittals**

- All handwritten worksheets and homework **must be completed and uploaded into Canvas by 11:59 PM on the DUE DATE specified for each section in the lab schedule.**
- **No LATE Assignments will be accepted. It is the student's responsibility to ensure assignment files are uploaded correctly.**
- All readings, worksheets, and Take Home Messages will be available the Thursday prior to each scheduled lab.
- **Review Lab Schedule for specific course section dates and deadlines. This information is listed on the Canvas assignment as well.**

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### Lab Grading:

- Lab is worth **30%** of your **final** course grade.
- Each lab is worth a total of 50 points each with 2 practical exams worth 200 points each. *The table below details assignments and point value specifics.*
- Your lowest lab grade during the semester (**excluding the lab practicum and final lab exam**) will be dropped from your lab grade.
- Attendance is vital to students' success and understanding of lab materials in preparation for the 2 lab practical exams. **If you have 2 or more unexcused lab absences your lab grade will be lowered by 1 letter grade.**

### Grading Points and Percentages

	<u># of Assignments</u>	<u>Points</u>	<u>Total Sem. Points</u>
1. Pre-Lab Assignments	10	10	100 pts
2. In Lab Worksheets	10	20	200 pts
3. Take Home Messages	10	20	200 pts
4. Practical Exams	2	200	400 pts
5. Lab Attendance	1	100	100 pts
<b>Total Points Available</b>			<b>1,000 pts</b>

### Locations:

Laboratories will be held at several locations including room 155 Animal Sciences, Dairy Unit, Swine Unit, and Horse Teaching Unit. Please refer to the lab schedule to determine where lab will be each week. Refer to this link for unit locations <https://animal.ifas.ufl.edu/facilities/>.

**Transport is NOT provided to the farm units.**

### Laboratory Schedule

<u>Lab</u>	<u>Week</u>	<u>Location</u>	<u>Topic</u>	<u>Dates &amp; Deadlines</u>
1	1/9 – 1/11	ANS 155	Lab Introduction	
	1/16 – 1/18	NO LAB	MLK Holiday 🇺🇸	
2	1/23 – 1/25	ANS 155	Female Macro & Microscopic Reproductive Anatomy	<b><u>Due Date (Sections):</u></b> Jan 24, 11:59 PM (RM67, RM89) Jan 25, 11:59 PM (RT67, RT89) Jan 26, 11:59 PM (RW67, RW89)
3	1/30 – 2/1	ANS 155	Male Macro & Microscopic Reproductive Anatomy	<b><u>Due Date (Sections):</u></b> Jan 31, 11:59 PM (RM67, RM89) Feb 1, 11:59 PM (RT67, RT89) Feb 2, 11:59 PM (RW67, RW89)
4	2/6 – 2/8	ANS 155	Brain, Hypothalamic, and Pituitary Anatomy	<b><u>Due Date (Sections):</u></b> Feb 7, 11:59 PM (RM67, RM89) Feb 8, 11:59 PM (RT67, RT89) Feb 9, 11:59 PM (RW67, RW89)
5	2/13 – 2/15	ANS 155	Exam Review	<b>Diagram Drafts <u>Due IN CLASS</u></b>

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## Laboratory Schedule Continued

6	2/20 – 2/22	ANS 155	<b>Lab Practicum Exam</b> (Material from first three labs)	
7	2/27 – 3/1	Swine Unit	Semen Collection & Artificial Insemination: Porcine	<b>Due Date (Sections):</b> Feb 28, 11:59 PM (RM67, RM89) Mar 1, 11:59 PM (RT67, RT89) Mar 2, 11:59 PM (RW67, RW89)
8	3/6 – 3/8	Horse Unit	Semen Collection & Artificial Insemination: Equine	<b>Due Date (Sections):</b> Mar 7, 11:59 PM (RM67, RM89) Mar 8, 11:59 PM (RT67, RT89) Mar 9, 11:59 PM (RW67, RW89)
	3/13 – 3/15	NO LAB	Spring Break 🌸	
9	3/20 – 3/22	ANS 155	Evaluation of Semen, Processing, and Cryopreservation	<b>Due Date (Sections):</b> Mar 21, 11:59 PM (RM67, RM89) Mar 22, 11:59 PM (RT67, RT89) Mar 23, 11:59 PM (RW67, RW89)
10	3/27 – 3/29	ANS 155	Embryology and Early Embryonic Development	<b>Due Date (Sections):</b> Mar 28, 11:59 PM (RM67, RM89) Mar 29, 11:59 PM (RT67, RT89) Mar 30, 11:59 PM (RW67, RW89)
11	4/3 – 4/5	ANS 155	Placental, Fetal Development and Fetal Sexing by Ultrasound	<b>Due Date (Sections):</b> Apr 4, 11:59 PM (RM67, RM89) Apr 5, 11:59 PM (RT67, RT89) Apr 6, 11:59 PM (RW67, RW89)
12	4/10 – 4/12	Dairy	Palpation Practice, Use of Ultrasound for pregnancy determination and fetal sexing	<b>Due Date (Sections):</b> Apr 11, 11:59 PM (RM67, RM89) Apr 12, 11:59 PM (RT67, RT89) Apr 13, 11:59 PM (RW67, RW89)
13	4/17 – 4/19	ANS 155	<b>Final Lab Exam – Cumulative</b>	
14	4/27 *reading days	Newberry	Study Break – Tactical Lazer Tag	Optional Fun Study Break

## Attendance and Make Up Policies:

- Class grade will be **lowered one letter grade with excessive unexcused absences (>2)**. Excused absences are consistent with university policy. Confirmed illnesses, family emergencies, military/jury duty, religious observances, and university-sponsored events will be excused with proper documentation. For each of these instances, you must (1) provide written documentation from an authority (such as a doctor's note, commanding officer, published obituary, etc) and (2) notify Mr. Callaham before the absence. Link to university policy <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/#religiousholidaystext>.
- There will be **no make-up labs** during the semester. Any lab missed for reasons other than those listed below will not be excused and a grade of "0" will be recorded. All requests to be excused from a lab must be submitted to Mr. Callaham either in writing or requested by email. This policy will be strictly enforced.
- A student **missing an exam** will be allowed to make up the exam provided that a documented, valid reason for missing it exists. Whenever possible, these problems should be discussed with the instructor



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in advance, preferably by email, excuse note, or handwritten note. A missed exam with no valid excuse will be considered as a “0”.

- Excused absences include: 1) Absence for a university-approved field trip or activity (must be cleared one week in advance). 2) Absence for a death (verification by obituary if requested) or serious illness in family. 3) Absence resulting from personal illness (verification consisting of a letter of explanation from hospital or doctor on official letterhead). Please review the excuse note policy of the Student Health Care Center (<http://shcc.ufl.edu/forms-records/excuse-notes/>)
- If you need to **attend a lab other than your scheduled lab**, please contact Mr. Callaham either in person, or by email to request a change of lab giving a reasonable reason for the change. Failure to do so will result in a “0” grade for that lab.
- Request to **regrade** an exam or take-home message must be made within one week of the return date. Grade challenges must be submitted in writing and attached to the assignment/exam in question.

### **Academic Accommodations**

Students that have sought academic accommodations will need to submit those accommodations using the form provided in the Canvas Laboratory Home Page. *Click* on the tab for **‘Academic Accommodations’ tab**, complete the online form and upload/attach the UF Letter of Accommodation.

### **Working with Livestock**

Working with livestock will require students to adhere to handling practices provided by the instructor either in written or verbal format. Animals are capable of injuring people, especially when they are in the flight or fight mode inspired by a stressful situation. The instructors will work to provide students with the ability to manage livestock with minimal stress, thus lowering the risk of injury to people and animals.

### **Biosafety and Biosecurity**

The biosafety and biosecurity of animals and students is a top priority for laboratory activities. Disease transmission can have severe negative consequences on animal and human health that can also be fiscally taxing. Some laboratory activities may require you to bring clean rubber boots that must be washed and disinfected prior to laboratory activities. You must also complete the biosecurity exercise prior to participation in labs conducted at animal units. The use of cell phones or cameras at animal facilities is not permitted without receiving written permission. Instructors and TA’s may dismiss students from a lab for violation of biosecurity procedures.

## **ADDITIONAL COURSE INFORMATION**

### **Academic Honesty:**

As a student at the University of Florida, you have committed yourself to uphold the Honor Code. 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 specifies a number of behaviors that are in violation of this code and the possible sanctions. [Click here to read the Honor Code](#). 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.

Students will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>

### **Disability Issues:**

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center. [Click here to get started with the Disability Resource Center](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### **Software Use and Privacy Policies:**

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.

### **Software Privacy Policies:**

1. Canvas (Instructure) - <https://sonicfoundry.com/privacy-policy/>
2. PlayPosit - <https://api.playposit.com/privacy/>
3. Mediasite - <https://sonicfoundry.com/privacy-policy/>
4. Zoom - <https://zoom.us/privacy>
5. Honorlock - <https://honorlock.com/student-privacy-statement/>
6. You Tube - <https://policies.google.com/privacy>

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## **Campus Assistance Resources:**

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

### Health and Wellness Resources

*U Matter, We Care:* If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

*Counseling and Wellness Center:* [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

*Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).

*University Police Department:* [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

*UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road,

Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).

### Academic Resources

*E-learning technical support:* Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

*Career Connections Center:* Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

*Library Support:* Various ways to receive assistance with respect to using the libraries or finding resources.

*Teaching Center:* Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring.

*Writing Studio:* 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

*Student Complaints On-Campus:* [Visit the Student Honor Code and Student Conduct Code webpage for more information](#).

*On-Line Students Complaints:* [View the Distance Learning Student Complaint Process](#).

If you are having problems comprehending lecture and (or) lab material or have other academic, university, or personal issues that are affecting your academic performance, please feel free to visit with the instructors to address the problem(s). Please do not wait until the end of the semester to address any difficulties you may be having.

## **Online Course Evaluation Process:**

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

## **ANS3319C – Reproductive Physiology and Endocrinology in Domestic Animals**

### **Absences:**

Requirements for class attendance and make-up exams, assignments, and other work in this course are outlined herein and consistent with university policies. [Click here to read the university attendance policies.](#)

### **Make-up work:**

A student missing an exam will be allowed to make up the exam provided that a documented, valid reason for missing it exists (Please see valid excuses in lab section). Whenever possible, these problems should be discussed with the instructor in advance, preferably by email, excuse note, or handwritten note. A missed exam with no valid excuse will be considered as a “0”.

### **Materials and Supplies Fee:**

Instructors may require that students supply their own personal protection equipment (PPE) as well as rubber boots and coveralls for lab-related activities.

### **Course Expectations:**

Lecture and lab attendance are highly correlated with your final grade, so it is expected that you attend both on a regular basis. Class and lab are “No Cell Phone Areas”. Class and lab decorum require that you act socially, professional, treat fellow students with respect, and appreciate their viewpoints and beliefs.