

ANS 6932 Physiology of Farm Animals

Course Syllabus

Instructors

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Catalog Description:

Credit: 3; Prerequisites: BCH3025, BCH4024, or instructors' consent.

Overview of animal physiology with an emphasis on farm species that seeks to organize students' knowledge of the basic sciences around physiological processes and functions of animal systems.

Time and Location

Fall Semester

When: Mondays, Wednesdays and Fridays, Period 2 from 8:30 to 9:20 a.m.

Where: Animal Science, Room 102

* Office hours by appointment

Textbooks

Recommended:

Animal Physiology, From Genes to Organisms, 2nd edition; Editors: Sherwood, Klandorf Yancey, Brooks Cole Publisher, 2012. ISBN: 0840068654

Functional Anatomy and Physiology of Domestic Animals, 4th edition; William O. Reece, Wiley-Blackwell Publishers, 2009. ISBN 978-0-8138-1451-3

Supplemental:

Biochemistry, 8th Edition. Jeremy M. Berg, John L. Tymoczko, Gregory J. Gatto, Lubert Stryer; W.H. Freeman Publishers, 2015. ISBN-10: 1464126100

Course objectives and Outcomes

Objectives:

- To provide introductory graduate students with a comprehensive overview of animal physiology from molecular, cellular and whole animal systems approaches.
- To organize the students knowledge of basic sciences (biology, chemistry, and physics) around the physiological functions of whole animal systems with a special emphasis on farm species.

- To be able to read, interpret and discuss scientific journal articles related to physiology of farm animals.
- To critically evaluate clinical and research case problems relating to endocrinology and cell biology as they apply to farm animals.
- To develop independent thinking skills and written and oral communication abilities.

Expected Outcomes:

- Understand the physiological processes that regulate body functions and the regulation of an organ system from the molecular all the way to the whole animal level
- Be able to describe interactions between different organ systems (homeostasis)
- Know the anatomy of different physiological systems and their specific functions
- Understand how changes in one system may impact a different system
- Be able to apply knowledge of a physiological mechanism to explaining how a whole animal physiological process occurs (i.e. gestation, lactation, etc.)

Course website

Power point lectures, supplementary materials, and syllabus are available in Canvas.

Grades

Exams: 4 exams, 100 points each;

Group topic presentation: 50 points;

In class discussions/Quizzes 5 points each: 50 points.

Research Highlights: 100 points.

Total Points: 600

A	(93-100%)
A-	(90-92%);
B+	(87-89%);
B	(83-86)
B-	(80-82)
C+	(77-79%)
C	(73-76%)
C-	(70-72%);
D+	(67-69%)
D	(63-66%)
D-	(60-62%)
E	(<60)

Group Topic Presentation (50 pts)

- Groups of students (2-4) will be assigned to present and lead a 15 minute class discussion on a scientific journal article.
- Student presenters will be expected to present and discuss the following aspects:

- Brief background and objectives of the work
- Explanation of specific studies (i.e. explaining individual figures and tables) which includes a discussion of the methods utilized
- Interpretation of results
- General discussion of outcomes and future perspectives
- See Group Presentation handout for specific instructions and deadlines.

Discussion questions and quizzes (50 points)

Throughout the course period, students will be given a question to answer individually or in a small group discussion (3-4/group). There will be 10 discussion questions over the course of the semester, each worth 5 points. Written answers can be submitted by email or hardcopy. If you are absent for the in-class discussion question, you may make-up the points by submitting a review of a journal article related to the discussion question topic (1 page summary and critique of the article).

Research Highlights (100 points)

Over the course of the semester graduate students are required to review four primary journal articles (25 points each). The student is to select the article based on topics covered in class (i.e. cellular physiology, neurophysiology, bioenergetics, metabolism, etc.). Due dates for the reviews will be spaced over the course of the semester and posted on Canvas at the start of the semester.

Course Topics

Week 1 (Aug 21-25)

M: Course overview and expectations
 W: Introduction to Physiology (Nelson)
 F: Molecular Physiology (Nelson)

Week 2 (Aug 28-Sept 1)

M: Molecular Physiology (Nelson)
 W: Cellular Physiology (Nelson)
 F: Cellular Physiology (Nelson)

Week 3 (Sept 4-8)

M: Labor Day (no class)
 W: Neurophysiology (Nelson)
 F: Neurophysiology (Nelson)

Week 4 (Sept 11-15)

M: Sensory system (Nelson)
 W: Sensor System (Nelson)
 F: Midterm (1)

Week 5 (Sept 18-22)

M: Cardio-pulmonary physiology (Nelson)
 W: Cardiopulmonary physiology (Nelson)
 F: Renal Physiology (Nelson)

Week 6 (Sept 25-29)

M: Renal Physiology (Nelson)
W: Fluid and pH Balance (Nelson)
F: Integration of systems (Nelson)

Week 7 (Oct 2-6)

M: Gastrointestinal physiology (invited)
W: Gastrointestinal physiology (invited)
F: Homecoming, no class

Week 8 (Oct 9-13)

M: Student Presentations (3 groups 15 min each)
W: In-class discussion and Review
F: Midterm (2)

Week 9 (Oct 16-20)

M: Introduction to Endocrinology
W: Endocrinology II (Laporta)
F: Endocrinology III (Laporta)

Week 10 (Oct 23-27)

M: Liver physiology I (Laporta)
W: Liver physiology II (Laporta)
F: Adipose tissue physiology (Laporta)

Week 11 (Oct 30-Nov 3)

M: Thermal Physiology (Laporta)
W: In-class discussion and Exam review
F: Midterm (3)

Week 12 (Nov 6-10)

M: Energy Balance I (Laporta)
W: Energy Balance II (Laporta)
F: Veterans Day (no class)

Week 13 (Nov 13-17)

M: Bone physiology I (Laporta)
W: Muscle physiology (Laporta)
F: Physiological adaptations of pregnancy (Laporta)

Week 14 (Nov 20-24)

M: Physiological adaptations of Lactation I (Laporta)
W: Thanksgiving (no class)
F: Thanksgiving (no class)

Week 15 (Nov 27-Dec 1)

M: Physiological adaptations of Lactation II (Laporta)
W: Student Presentations (3 groups 15 min each)
F: Student Presentations (3 groups 15 min each)

Week 16 (Dec 4-6)

M: In class discussion and Review
W: Midterm (4)

Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Absences and Make-Up Work

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

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>.

Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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."*

It is assumed that you 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>.

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.

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

- U Matter We Care, www.umatter.ufl.edu
- *Career Resource Center*, First Floor JWRU, 392-1601, www.crc.ufl.edu/

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Student Complaints

Residential Course: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

Online Course: <http://www.distance.ufl.edu/student-complaint-proces>