Course Title

ANS 3043 Growth & Development of Farm Animals (3 Cr)

Course Instructors

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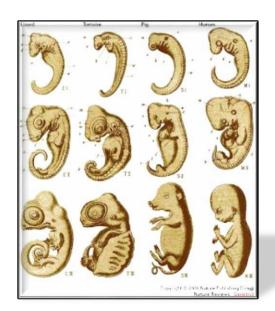
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Office hours

We have an open-door policy, and appointments can be scheduled on demand. We will respond to emails within 48 hours.

Course Description

An integration of the physiological, genetic and nutritional bases of animal growth, development, and body composition with application to livestock production.

Course Objectives

ANS 3043 is a three-credit undergraduate level course offering insights into the physiological, genetic, and nutritional basis of animal growth, development, and body composition with application to livestock production.

At the end of the course, the student will be able to:

- ✓ Understand the core concepts of animal growth;
- ✓ Describe the dynamic forces that influence early embryonic, prenatal, and postnatal growth and development of domesticated livestock and other mammalian species;
- ✓ Discuss the fundamentals of cell biology, and connective tissue, muscle, bone and fat anatomy, formation and function;

- ✓ Place tissue growth in the context of endocrine, paracrine and autocrine modifiers;
- ✓ Summarize factors that control and influence animal growth and development including gender, genotype, nutrition, environment, endocrine, growth promotants, and genetic engineering.

Time and Location

MWF 10:40-11:30 am (4th period)
Location: ANS 156

Prerequisites

BSC 2010 and 2010L (or equivalent); BSC 2011 or 2011L (or equivalent), ANS 3006C (or equivalent); must be AL major.

Supporting texts

There is no assigned textbook. Some reading assignments and suggestions will be provided and will come from research and popular press articles, online resources, and book chapters. However, we recommend the following textbooks, which the student may wish to consult:

- ✓ ***Principles of Animal Growth and Development***, Gerrard and Grant; ISBN13: 978-0-7575-2986-3; Kendall Hunt Publishing, Dubuque, Iowa 52002.
- ✓ ***Growth of Farm Animals,*** Lawrence, Fowler and Novakofski; 3rd ed. (2012); ISBN-13: 978-1-84593-558-0 (paperback); CABI Cambridge, MA;

- ✓ College level *Biology* textbook
- ✓ *Physiology* textbook, for example: Color Atlas of Physiology, Silbernagl and Despopoulos; ISBN-13: 978-3135450063; Thieme Publishing, 6th edition 2008

Course Website on Canvas

Our course Canvas website, to be found through login to CANVAS (http://elearning.ufl.edu), will be the information hub for this course. Syllabus, resources such as assigned and recommended readings, and lesson material will be posted in CANVAS. The lesson material ("the slides" as well as readings and other related material) will be organized by topic within modules. The lesson material will have blanks and missing information that need to be completed by you during the lectures. We will not post completed lesson material. The completion will be your responsibility!

If you have not made yourself familiar with CANVAS yet, please take a look at the *Canvas Student Quickstart Guide*. An important first step to make sure you are not missing any announcement or email is that you set your CANVAS settings to receive emails and announcements related to this class as soon as possible. In order to change settings to accommodate this requirement, please:

> Go to your general **CANVAS Settings** (upper right corner within CANVAS) > **Notifications** (left menu bar) > **Notification Preferences**: here set to **"*ASAP*"** (at least) the following activities: Announcements and Conversations (all three subcategories).

In case you need a general introduction to CANVAS or additional help, the e-learning site and the CANVAS site provide links to more help options.

Assessments

We will use **exams and short quizzes** to assess your performance and knowledge. A majority of the exam and quiz material will come from the lecture notes (90%) with the remainder (10%) coming from readings or other assigned materials. The exams and quizzes will consist of multiple choice questions, short essay answers, fill in the blanks, labeling of drawings and schemes, and free drawings. **Table 1** outlines the assessments and their respective point and % values.

Table 1: Assessment points and scores

Assessment type	Number per semester	Points for each	Total points per assessment type	% of overall grade
Exam	4	100	400	80
Quiz	10	10	100	20
			Total points: 500	Total score: 100%

Assessment schedule

1. Exams:

Table 2 outlines the exam dates for Fall semester 2019. Please enter those dates into your calendar, and check on our course CANVAS calendar.

Table 2: Exam schedule

Assessment	Exam 1	Exam 2	Exam 3	Exam 4
Date	09/16 2019	10/14 2019	11/08 2019	12/04 2019

2. Quizzes:

Weekly quizzes will be given on Fridays at the beginning of class and will test material covered during the previous week. Note that 10 quizzes will count toward your final grade. In the event that there will be more than 10 quizzes during the semester, your ten highest quiz scores will count toward your grade.

IMPORTANT! We intend to give weekly quizzes using iClicker polling system. You are required to bring a device to participate in these sessions during class. We will be allowing participation with the iClicker Reef app on a smartphone. It is your responsibility to follow the steps to properly register your iClicker Reef account in a timely fashion (see below). It is also your responsibility to regularly check your iClicker grades for discrepancies and bring them to the instructor's attention within 1 week.

iClicker sessions

Participating in iClicker sessions for quizzes at the beginning of class on Fridays **will be counted** toward your final grade.

However, we will also use the iClicker system at other times during class to help us understand what you know and give everyone a chance to participate; points earned from these sessions are **not included in your final grade** but may be used for extra credit or bonus points.

> **Instructions for iClicker Reef:**
> 1. Create an iClicker Reef account. It's free to create an account!
>   - You can do this by downloading and opening the iClicker Reef mobile app via the App Store or Google Play, or by visiting iclicker.com. If you already have an account, DO NOT create a new one; just proceed to the next step.
> 2. Add my course to your iClicker Reef account.
>   - Use the + sign to search for my course in iClicker Reef.
>   - In the "Find Your Institution" field, enter University of Florida
>   - In the "Find Your Course" field, enter ANS 3043
>   - Click "Add This Course" and it will be added to the main screen of your iClicker Reef account
> 3. Set up the device you plan to use in class to participate in my sessions
>   - You can download the iClicker Reef mobile app via the App Store or Google Play

4. Purchase an iClicker Reef subscription or enter an access code in order to participate in polling using iClicker Reef.
- Upon signing up with iClicker Reef, you will have a two week free-trial period for using the app for polling in class. Before the free trial ends, you need to purchase an iClicker Reef subscription or obtain an access code in order to continue participating with iClicker Reef on your mobile device. iClicker Reef will let you know when your free trial has ended. If your free trial ends without completing this step, you will be unable to participate in polls until you purchase a subscription or enter an access code.

5. Participate in my sessions during class.
- Each time our class meets, make sure you have selected my course from the main screen of your iClicker Reef account.
  - When I start a session, click the Join button that appears on your screen, then answer each question I ask in iClicker Reef.
  - For short answer and numeric questions, make sure you press Send.

6. Review your work in iClicker Reef.
- You can review your grades, performance, and participation in iClicker Reef

Academic Integrity Information

iClicker activities fall under the provisions of our campus academic honesty policy. Students must not engage in academic dishonesty while participating in iClicker activities. This includes but is not limited to:
- Answering polling questions while not physically in class
- Looking at other students' devices while answering live questions
- Using more than one iClicker remote or account at a time

**Any student found to be in violation of these rules will lose polling points for the entire term and may be reported to the Dean of Student Discipline.

Need help with your iClicker remote or iClicker Reef?
- Find answers to many of your questions and contact the iClicker Tech Support Team by visiting iclicker.com/support at any time.
- If you are having issues connecting to iClicker Reef, check out these iClicker Reef Connectivity Tips.
- If you are having issues seeing your iClicker Reef points, check out this troubleshooting guide.

Attendance Policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Attendance is not required nor will it be recorded. However, it is highly recommended that you attend class. If attendance becomes an issue we reserve the right to give announced or unannounced quizzes for points throughout the semester.

Missing an assessment:

An exam or quiz may not be missed without an excused absence or prior consent of the instructor. All requests to miss an assessment must be submitted in writing and signed by the student regardless of the reason. Any assessment missed for reasons other than those listed below or as outlined in the UF attendance policy (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx) will not be excused and a grade of zero will be recorded. In general, acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, and professional conferences), military obligation, severe weather conditions, religious holidays and participation in official university activities such as music performances, athletic competition or debate. Absences from class for

court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Other reasons also may be approved. No make-up exams or quizzes will be granted without a valid excuse.

Request to re-grade an exam must be made within one week from the date the grades were assigned. Grade challenges must be submitted in writing, and returned to the instructor.

If for any reason you are having problems understanding the course material and/or are having other academic, university, or personal problems that are affecting your performance in class, please make an appointment with us as early in the semester as possible so the problems can be addressed.

Grades and Grading Policy

Grades are based on performance in the assessments (exams and quizzes). Detailed information about points and % of total score distribution is given in **Table 1** above. Grade assignment and corresponding point range are shown in **Table 3**.

Table 3: Grade assignment and point range

	A	B$^+$	B	C$^+$	C	D$^+$	D	E
% score range	90-100	85-89.99	80-84.99	75-79.99	70-74.99	65-69.99	60-64.99	≤59.99
Point range	450-500	425-449	400-424	375-399	350-374	325-349	300-324	≤ 299

Please note that no minus grades will be used.

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

Important dates besides the assessment schedule (see above)

First class meets on August 21st. *Last class* is on December 4th (Wed.), and the last exam will be held during class on this day.

No classes on: Sept. 2nd (Labor Day), Oct. 4th (Homecoming), Nov. 11th (Veterans Day), Nov. 27th & 29th (Thanksgiving)

Course Topics

Week*[1]	Topic
1	**Introduction to the course** **General aspects of growth**
2	**Cells and principles of cell growth**: ➢ Cell structure ➢ Mitosis ➢ Origins of individual variation ➢ Cell signaling
3	**Embryo development:** from zygote to embryo: pre-implantation embryo, implantation, early embryogenesis (incl. neurulation, somitogenesis)
4-8	**Basic structure, development and function of select tissues:** ➢ Muscle: prenatal development, structural organization, pathologies, excitation-contraction coupling, muscle fiber types & metabolism, postnatal growth ➢ Connective tissue: general structure and types, cartilage, ➢ Bone as connective tissue type: types, structure and anatomy, prenatal development, ➢ Adipose tissue: types, structure and anatomy, prenatal development, regulation
9-10	**Hormonal influences on growth**: ➢ General characteristics of hormones ➢ Growth hormone and IGF-1 ➢ Sex hormones ➢ Insulin and Glucagon ➢ Leptin ➢ Catecholamines ➢ Glucocorticoids ➢ Thyroid hormones
11-12	**Whole animal development**: ➢ Phases of the growth curve ➢ Models of growth ➢ Types of growth curves ➢ Components of whole body growth ➢ Allometric growth ➢ Types of growth curves ➢ Whole body composition ➢ Types of growth curves ➢ Chemical composition of body tissues
13-14	**Genetic factors affecting growth**: ➢ Species effects on growth ➢ Breed effects on growth ➢ Sex effects on growth
15	**Environmental factors affecting growth**: ➢ Nutritional effects on growth ➢ Microbial effects on growth ➢ Stress effects on growth ➢ Physical activity and growth
Special topics[2]	*For example: Muscle to Meat; Poultry Development; New Technologies in Embryo Growth; Development of the Mammary Gland*

!   ***[1]: Please note that the syllabus is an evolving animal. Contents, topics and timeline listed in the syllabus may therefore be subject to slight modifications, in part tailored to you**.

!   ***[2]:** Contents and timing of special topics lectures will depend on guest speaker availability.

General information

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/

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.

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.

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:

https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/

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/**
  - o *Counseling Services*
  - o *Groups and Workshops*
  - o *Outreach and Consultation*
  - o *Self-Help Library*
  - o *Wellness Coaching*

- U Matter We Care*, www.umatter.ufl.edu/*
- *Career Resource Center,* First Floor JWRU, 392-1602, **www.crc.ufl.edu/**

University of Florida Complaints Policy

For information on the University of Florida Complaints Policy, please see
https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/