

**Course Title**

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

**Course Instructors**

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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 (4<sup>th</sup> 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; 3<sup>rd</sup> 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, 6<sup>th</sup> edition 2008

### Course Website on Canvas

Our course Canvas website, to be found through login to [CANVAS \(http://elearning.ufl.edu\)](http://elearning.ufl.edu), will be the conversation, communication and information hub for this course. **ALL** email communications should happen through the course website. Syllabus, resources such as assigned and recommended readings, and lesson material, provided as *PowerPoint* and *pdf* files, 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
			<b>Total points: 500</b>	<b>Total score: 100%</b>

## Assessment schedule

### 1. Exams:

**Table 2** outlines the exam dates for Spring semester 2017. 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	09/15 2017	10/13 2017	11/08 2017	12/14 2017

*Note: Exam 4 will **NOT** be a comprehensive exam and will be held during Finals Week!*

### 2. Quizzes:

**Weekly** quizzes will be given every Friday at the beginning of class that will test material covered during the previous week. There will be no quizzes during exam weeks. Please note that there will be no extra quiz and that, consequently, each of the 10 quizzes will count toward your final grade.

## 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>.

Since you are all mature, responsible, and ambitious young adults, attendance is not required nor will it be recorded. However, it is recommended that you not miss class as your final grade will be positively correlated with attendance. 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 either 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) (<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**

Letter grade	A	B <sup>+</sup>	B	C <sup>+</sup>	C	D <sup>+</sup>	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	360-400	340-359	320-339	300-319	280-299	260-279	240-259	≤ 249

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>.

### Class Expectations

The foundation of this class will be based on developing mutual respect between students and instructors. We will work as diligently as possible to insure all individuals are treated fairly, all opinions and personalities are respected, and everyone has an equal opportunity to succeed in this class. We will put forth all our energy and enthusiasm into making this class not only academically challenging but also a rewarding and enjoyable experience. In return, we expect a similar commitment from you towards us, and equally important, towards your fellow students. We expect that you participate in in and out of class activities, such as discussions, peer evaluations, group exercises and general participation. Importantly, please respect your fellow student's opinions, their quest for knowledge, and their desire to succeed in this class.

*Mutual respect* includes **not using cell phones for anything, unless necessary for class and announced** (the instructors will use their cell phones also only in emergencies), and to **take a break from social media** for the duration of the class.

This class can be challenging for some, and may require some extra effort on your side – well, that is true for every class, isn't it? If you don't recall much from your Biology classes you may want to be prepared for having to catch up on some biology, physiology and cell biology alongside the provided lecture material. This extra effort will be advantageous for a better understanding of the physiology of growth and development of an organism.

## Course Topics

Week* <sup>1</sup>	Topic
1	<b>Introduction to the course</b> <b>General aspects of growth</b>
2	<b>Cells and principles of cell growth:</b> <ul style="list-style-type: none"> <li>➤ Cell structure</li> <li>➤ Mitosis</li> <li>➤ Origins of individual variation</li> <li>➤ Cell signaling</li> </ul>
3-4	<b>Embryo development:</b> from zygote to embryo: pre-implantation embryo, implantation, early embryogenesis (incl. neurulation, somitogenesis)
5-8	<b>Basic structure, development and function of select tissues:</b> <ul style="list-style-type: none"> <li>➤ Muscle: prenatal development, structural organization, pathologies, excitation-contraction coupling, muscle fiber types &amp; metabolism, postnatal growth</li> <li>➤ Connective tissue: general structure and types, cartilage,</li> <li>➤ Bone as connective tissue type: types, structure and anatomy, prenatal development,</li> <li>➤ Adipose tissue: types, structure and anatomy, prenatal development, regulation</li> </ul>
9-10	<b>Hormonal influences on growth:</b> <ul style="list-style-type: none"> <li>➤ General characteristics of hormones</li> <li>➤ Growth hormone and IGF-1</li> <li>➤ Sex hormones</li> <li>➤ Insulin and Glucagon</li> <li>➤ Leptin</li> <li>➤ Catecholamines</li> <li>➤ Glucocorticoids</li> <li>➤ Thyroid hormones</li> </ul>
11-12	<b>Whole animal development:</b> <ul style="list-style-type: none"> <li>➤ Phases of the growth curve</li> <li>➤ Models of growth</li> <li>➤ Types of growth curves</li> <li>➤ Components of whole body growth</li> <li>➤ Allometric growth</li> <li>➤ Types of growth curves</li> <li>➤ Whole body composition</li> <li>➤ Types of growth curves</li> <li>➤ Chemical composition of body tissues</li> </ul>
13-14	<b>Genetic factors affecting growth:</b> <ul style="list-style-type: none"> <li>➤ Species effects on growth</li> <li>➤ Breed effects on growth</li> <li>➤ Sex effects on growth</li> </ul>
15	<b>Environmental factors affecting growth:</b> <ul style="list-style-type: none"> <li>➤ Nutritional effects on growth</li> <li>➤ Microbial effects on growth</li> <li>➤ Stress effects on growth</li> <li>➤ Physical activity and growth</li> </ul>
Special topics* <sup>2</sup>	<i>For example: Muscle to Meat; Poultry Development; New Technologies in Embryo Growth; Development of the Mammary Gland</i>

! \*<sup>1</sup>: 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.

! \*<sup>2</sup>: Contents and timing of special topics lectures will depend on guest speaker availability.

### Important dates besides the assessment schedule (see above)

First class meets on August 21<sup>st</sup>. Last class is on December 6<sup>th</sup>. Reading days are December 7<sup>th</sup> and 8<sup>th</sup>. Final exam (**NOT COMPREHENSIVE**) is December 14<sup>th</sup>, 12:30-2:30 pm.

**No classes on:** Sep. 4<sup>th</sup> (Labor Day), Oct. 6<sup>th</sup> (Homecoming), Nov. 10<sup>th</sup> (Veterans Day), Nov. 22<sup>nd</sup>-24<sup>th</sup> (Thanksgiving).



### 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/](http://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/](http://www.counseling.ufl.edu/cwc/)
  - *Counseling Services*
  - *Groups and Workshops*
  - *Outreach and Consultation*
  - *Self-Help Library*
  - *Wellness Coaching*
- U Matter We Care, [www.umatter.ufl.edu/](http://www.umatter.ufl.edu/)
- *Career Resource Center*, First Floor JWRU, 392-1602, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)

## University of Florida Complaints Policy

For information on the University of Florida Complaints Policy, please see [here](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf) ([https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf)).

