ANS 3043 Growth & Development of Farm Animals (3 Cr) – Spring 2025

Course Instructor

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*Office hours: Tuesday and Thursday, 1:30 pm – 5:00 pm. # Available by email.

fish salamander turtle chicken sheep human

Note: We have an open-door policy, and you are welcome to send us an e-mail to set up an in person appointment on demand. We will respond to emails within 2 working days.

Meeting Days, Time, and Location

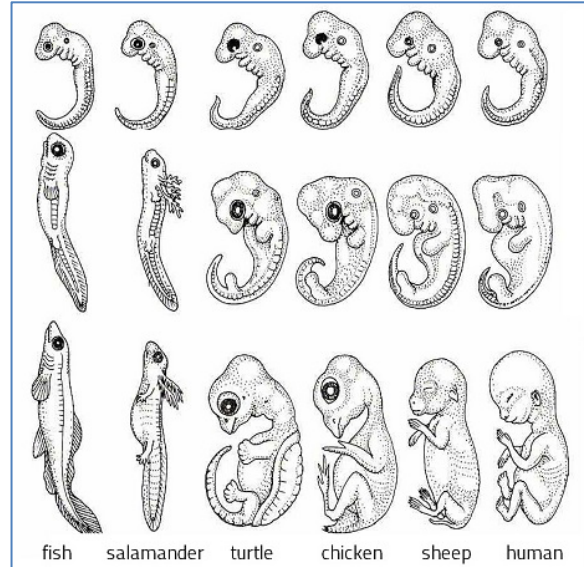Days: Mondays (M), Wednesdays (W), and Fridays (F)
Time: 9:35 am – 10:25 am (Period 3)
Location: Animal Science Building, Room ANS 0156

Course Description & Objectives

ANS 3043 is a three-credit undergraduate level course offering insights into the physiological, cellular, 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.

Prerequisites

BSC 2010 and 2010L (or equivalent); BSC 2011 or 2011L (or equivalent), ANS 3006C (or equivalent)

Supporting Texts

There is no textbook required. 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 (eBook is available online through UF library).
- ▪ *Physiology* textbook, for example: Animal Physiology, Hill, Wyse, and Anderson; 4th ed (2016); Sinauer Associates, Inc. ISBN-13: 978-1605355948.
- ▪ College level *Biology* textbook.

Course Website on Canvas

Our course Canvas website (login via https://elearning.ufl.edu/) will be the communication and information hub for this course. Syllabus, resources, and lesson material, provided as *PowerPoint* or *pdf* files, will be posted in CANVAS. The lesson 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!

- ✓ To make sure you are not missing any announcement or email, your CANVAS settings must be set to receive emails and announcements related to this class as soon as possible. To change these settings: 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).
- ✓ For more information on how to use Canvas, see Canvas Student Guide. The e-learning site and the CANVAS site also 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 lecture notes (90%) with the remainder (10%) coming from readings or other assigned materials. **There is no cumulative final exam.** The exams and quizzes will consist of multiple choice questions, true/false questions, short essay answers, fill-in the blanks, labeling of drawing and schemes, and free drawings. **Table 1** outlines the assessments and their respective point and % values.

Table 1. Assessment types and points

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 pts: **500**	Total score: **100%**

Request to re-grade a quiz or 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.

Assessment Schedule

1. Exam schedule:

Table 2. Spring 2025 Exam Schedule

Assessment	Date
Exam 1	W., Feb. 05, 2025
Exam 2	M., Mar. 03, 2025
Exam 3	W., Apr. 02, 2025
Exam 4	W., Apr. 23, 2025

Other important dates (besides quizzes and exams):

<u>First class:</u> Mon. Jan. 13rd   <u>Last class:</u> Wed., Apr. 23rd
<u>No class:</u> Jan. 20th (MLK Day); Mar. 17th – 21st (Spring Break)

2. Quizzes

Weekly quizzes will be available on Canvas every Friday (1st quiz on Jan. 17th) except the last quiz on Wednesday. You are responsible for logging into Canvas and taking the quizzes (they will be available for ~24h, from 10:35 am on Friday to 11:59 pm on Saturday, EST). The quiz will include material from the previous **Friday through** current **Wednesday, or** as indicated by the instructor. There will be 12 quizzes during the semester, and your ten highest quiz scores will count toward your final grade.

*Note: LockDown Browser (but NOT webcam/respondus monitor) will be used for quizzes. LockDown Browser is a locked browser that prevents you from printing, copying, going to another URL, or accessing other applications during an assessment.

- If LockDown Browser has not previously been installed on your device, you will be prompted to download and install the browser. Return to the quiz and open it to launch LockDown Browser. If prompted to close a blocked program, choose **Yes**.
- Once you have started a quiz with the LockDown Browser, you cannot exit until the quiz has been submitted for grading.

Grades and Grading Policy

Grades are based on performance in the assessments (exams and quizzes). Grade assignment and corresponding percentage and point ranges are shown in **Table 3**.

Table 3. Grade assignment and point range

Grade	% score range	Point range
A	90.0 – 100.0	450 – 500
B+	85.0 – 89.99	425 – 449
B	80.0 – 84.99	400 – 424
C+	75.0 – 79.99	375 – 399
C	70.0 – 74.99	350 – 374
D+	65.0 – 69.99	325 – 349
D	60.0 – 64.99	300 – 324
E	$\leq$ 59.99	$\leq$ 299

* Please note that no minus grades will be used. For information on current UF policies for assigning grade points: https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/.

Course Topics

Week*¹	Topic
1	**Introduction to the course** **General aspects of growth and development**
2-3	**Cells and principles of cell growth**: ➢ Cell structure ➢ Mitosis ➢ Origins of individual variation ➢ Cell signaling
3-4	**Embryo development:** from zygote to embryo: pre-implantation embryo, implantation, early embryogenesis (incl. neurulation, somitogenesis)
Feb. 5, 2025	**Exam 1**
4-7	**Basic structure, development and function of select tissues:** ➢ Connective tissue: general structure and types, cartilage ➢ Bone as connective tissue type: types, structure and anatomy, prenatal development, ➢ Skeletal muscle: prenatal development, structural organization, pathologies, excitation-contraction coupling, muscle fiber types & metabolism, postnatal growth ➢ Adipose tissue: types, structure and anatomy, prenatal development, metabolism and regulation
Mar. 3, 2025	**Exam 2**
8-12	**Hormonal influences on growth**: ➢ General characteristics of hormones ➢ Growth hormone and IGF-1 ➢ Sex hormones ➢ Insulin and Glucagon ➢ Leptin ➢ Catecholamine ➢ Glucocorticoids ➢ Thyroid hormones
Apr. 2, 2025	**Exam 3**
13	**Whole animal growth and development**: ➢ Phases of the growth curve ➢ Models of growth ➢ Types of growth curves ➢ Components of whole body growth ➢ Allometric growth ➢ Whole body composition ➢ Chemical composition of body tissues
13-14	**Genetic factors affecting growth**: ➢ Species effects on growth ➢ Breed effects on growth ➢ Sex effects on growth
14-15	**Environmental factors affecting growth**: ➢ Nutritional effects on growth ➢ Microbial effects on growth ➢ Stress effects on growth ➢ Physical activity and growth
Apr. 23, 2025	**Exam 4**
*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.

iClicker Sessions

We will also use the iClicker system 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 the iClicker student app (formerly iClicker Reef):

1. Create an iClicker Student account. You can do this by downloading and opening the iClicker Student 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 account; just proceed to the next step.
2. Add my course to your iClicker Student account. Use the "+" sign to search for my course in iClicker Student.
3. Click "Add this Course" and it will be added to the main screen of your iClicker Student account
   - 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 Student account
4. Set up the device you plan to use in class to participate in my sessions. You can download the iClicker Student mobile app via the App Store or Google Play.
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 Student account.
   - When I start a session, click the "Join" button that appears on your screen, then answer each question I ask in iClicker Student.
   - For short answer and numeric questions, make sure you press "Send".
6. Review your work in iClicker Student.
7. You can review your performance and participation in iClicker Student.

Need help with your iClicker Student account?

- 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 Student, check out these iClicker Student Connectivity Tips.
- If you are having issues seeing your iClicker Student points, check out this troubleshooting guide.

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.

Attendance 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/UGRD/academic-regulations/attendance-policies/.

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 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.

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. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at: https://gatorevals.aa.ufl.edu/public-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/process/student-conduct-honor-code.

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.

Use of Artificial Intelligence

Use of generative artificial intelligence is not permitted without written permission from the instructor. Use of generative artificial intelligence (including but not limited to ChatGPT) without permission, could result in a grade penalty. The university policy on plagiarism and the Honor Code (below) applies to the use of artificial intelligence.

Services for Students with Disabilities

The Disability Resource Center (DRC) 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, https://disability.ufl.edu/.

Class Expectations and Mutual Respect

The foundation of this class will be based on developing mutual respect between students and instructor. I would like to create a positive learning environment for my students that supports a diversity of thoughts, perspectives and experiences. To facilitate the accomplishment of this:

- I 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.
- I will put forth all my energy and enthusiasm into making this class not only academically challenging but also a rewarding and enjoyable experience.
- Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences background.
- You are expected to treat your instructor, teaching assistant, and all other participants in the course with courtesy and respect. Your comments to others should be factual, constructive, and free from harassing statements.
- You are encouraged to disagree with other students, but such disagreements need to be based upon facts and documentation (rather than prejudices and personalities).
- I expect that you participate in in- and out-of-class activities, such as discussions, peer evaluations, group exercises and general participation.
- If you feel like your performance in the class is being impacted by your experiences outside of class, please do not hesitate to come and talk with me. I want to be a resource for you.
- I (like many people) am still in the process of learning about diverse perspectives and identities. If something was said in class (by anyone) that made you feel uncomfortable, please talk to me about it.

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 growth and development physiology of an organism.

Other Course Policies

Student Feedback: ALL types of feedback are welcome. You can send me an email or drop a note into the "ANS3043 Suggestion envelope" that I will keep in the book shelf in the front of my office door (Bldg. 459, Room 202D).
Unsatisfied with the grades that you received? Please follow the steps below in order*:*

- Review the quiz/exam's questions and check what you have answered.
- Check the lecture materials.
- Make notes of what you think was not properly graded.
- Wait 24 hours and check again the questions and confirm your answers.

If you still think that your quiz/exam was not properly graded, then send me an email and I will be happy to discuss your grade with you!

Advice for Success:

- Attend the lectures in person.
- Arrive in class on time. The first 5 minutes of each lecture will be used to revise the key points of the previous lecture. This is a good time to clarify concepts and ask questions.
- Take notes. Not all the information will be listed on the slides because I expect you to pay attention to the class and make some notes.
- Ask your questions! You can ask questions in the classroom, by email or stop by my office.
- Revise the lecture materials after each class and before the exam.
- Keep in mind the lecture objectives.
- Study with a classmate. It helps to keep you motivated and give you different insights into course materials.
- Be active. Eat well. Get enough sleep. Enjoy your loved ones.

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.
  Counseling Services
  Groups and Workshops
  Outreach and Consultation
  Self-Help Library
  Wellness Coaching
- *U Matter We Care*, www.umatter.ufl.edu/.
- *Career Connections Center,* First Floor JWRU, 392-1601, https://career.ufl.edu/.

- *Student Success Initiative*, http://studentsuccess.ufl.edu.
- *Student Complaints On-Campus*: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/.

Other Academic Resources

➢ ***E-learning technical support:*** Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

➢ ***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***, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

➢ ***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).

Welcome to our Animal Growth & Development Class!