

**Sul Ross State University**  
**ANSC 5324: Animal Physiology**  
**Spring 2021**

Instructor:

Dr. Perse McCrae

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Office hours: Monday & Wednesday 9:30-11:00 am or by appointment

Course description:

As an equine and canine exercise physiologist, I am very excited to be helping you all build upon your animal anatomy and physiology knowledge! My research program focuses on equine and canine biomechanics, respiratory and cardiovascular fitness, sports medicine and athletic performance. Having a strong understanding of anatomy and physiology is essential in understanding animal husbandry techniques, as well as animal health and disease.

This course is designed to expand upon the basic principles of anatomy and physiology of farm animals. Individual body systems will be discussed, with an emphasis placed on the integration of body systems for optimal health. To better understand these topics, we will assess and discuss emerging scientific literature. This allows you to choose topics and animal species that interest you, all while you learn to think scientifically and critically. As many of you are interested in working in industry or the veterinary field, this class has a strong emphasis placed on clinical, real-world applications. Through this course you will apply your knowledge of physiology to case studies that assess the health of different domesticated animal species.

This is an online course that spans the Spring semester. This course consists of 11 sequential modules where we will work through the different body systems and structures. As these topics build upon each other, you must complete each unit in order. Physiology is often a topic that students struggle to master – I highly recommend working through the units systematically and studying as you go. This is not a course you will be able to cram at the last minute. Each unit is composed of videos, textbook readings, discussions and exercises, all of which can be accessed through Blackboard.

Student Learning Outcomes:

By the end of this course, successful students will be able to:

- Identify anatomical structures as they relate to physiology of a variety of domesticated species.
- Apply their knowledge of physiology in both healthy and diseased states.
- Evaluate anatomical and physiological differences between species.
- Critically assess and evaluate scientific literature.

Marketable Skills for Department of Animal Science:

1. Knowledge of techniques and equipment for planting, growing, and harvesting food products (both plant and animal) for consumption, including storage/handling techniques.
2. Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

3. Understanding the implications of new information for both current and future problem solving and decision-making.
4. Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
5. Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions. Communicating finding in both oral and written form at a level appropriate for the needs of the audience.

Departmental projected learning outcomes:

1. Demonstrate the basic skills of interpreting research data gathered in an agricultural context.
2. Apply critical thinking skills to mitigate potential challenges in diverse animal sciences and related agricultural industries.  
Demonstrate the ability to communicate through written, spoken, and graphical methods.

Required text:

Functional Anatomy & Physiology of Domestic Animals. 4<sup>th</sup> Ed. 2009. Reece, Wiley-Blackwell.

Academic honesty:

The University expects all students to engage in all academic pursuits in a manner that is beyond reproach and to maintain complete honesty and integrity in the academic experiences both in and out of their classroom. **ANY FORM OF ACADEMIC DISHONESTY WILL RESULT IN A GRADE OF ZERO.** The University may initiate disciplinary proceedings against a student accused of any form of academic dishonesty, including but not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials.

For more information visit:

[https://www.sulross.edu/sites/default/files/sites/default/files/users/docs/stulife/student\\_conduct\\_discipline.pdf](https://www.sulross.edu/sites/default/files/sites/default/files/users/docs/stulife/student_conduct_discipline.pdf)

SRSU Disability Services:

Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class. Students seeking accessibility/accommodations services must contact Rebecca Greathouse Wren, LPC-S, SRSU's Accessibility Services Coordinator at 432-837-8203 (please leave a message and we'll get back to you as soon as we can during working hours), or email [rebecca.wren@sulross.edu](mailto:rebecca.wren@sulross.edu). Our office is located on the first floor of Ferguson Hall (Suite 112), and our mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas, 79832.

SRSU Library Services:

The Sul Ross Library offers FREE resources and services to the entire SRSU community. Access and borrow books, articles, and more by visiting the library's website, [library.sulross.edu](http://library.sulross.edu). Off-campus access requires logging in with your LoboID and password. Librarians are a tremendous resource for your coursework and can be reached in person, by email ([srsulibrary@sulross.edu](mailto:srsulibrary@sulross.edu)), or phone (432-837-8123).

SRSU Distance Education Statement:

Students enrolled in distance education courses have equal access to the university's academic support services, such as Smarthinking, library resources, online databases, and instructional technology support. For more information about accessing these resources, visit the SRSU website. Students should correspond using Sul Ross email accounts and submit online assignments through Blackboard, which requires secure login information to verify students' identities and to protect students' information.

Technical Support:

SRSU 24/7 Blackboard Technical Support: Toll Free: 888.837.6055. Email: [blackboardsupport@sulross.edu](mailto:blackboardsupport@sulross.edu)

Absence & late assignment policy:

It is expected that ALL assignments will be submitted on time. Valid absences include 1) medical emergencies with signed note from a doctor, 2) participation in a SRSU-sanctioned activity with a letter from faculty advisor, or 3) other emergencies or conflicts that are allowed at the professor's discretion. Students are expected to make up missed work within a week of original due date. **Late assignments will be accepted for 4 days following the initial due date and time with a 20% penalty per day late.**

**Quizzes (100 pts, 20 pts each):** There will be 5 quizzes throughout the semester. Quizzes will be available for a 12-hour period online and you will have 30 minutes to complete each quiz.

Quizzes require application of material discussed in lecture and studying is required to do well.

**Due: variable, see class schedule.**

**Exams:** There will be three exams (two midterm exams and a cumulative final) administered online throughout the semester. The dates of the exams are noted on the syllabus. There will be no make-up exams without prior approval or a valid doctor's excuse. If you need to reschedule an exam, please notify me as soon as possible. **Due: variable, see class schedule.**

Assignments:

**Thought Labs: 300 pts (50 pts each)**

There will be six Thought Labs over the semester (found under the "Thought Labs" tab on BlackBoard). Thought Labs are completed using videos and other resources posted for each section. **Due: variable, see class schedule.**

**Critical article review: 200 pts (100 pts each)**

You will choose a primary scientific paper (NOT a review paper or brief communication) published in a peer reviewed journal on a topic within the field of animal physiology (sign up required). Submission includes a two-page paper (12 pt. Times New Roman font, double spaced) explaining what the goal of the study was, how the authors conducted the research, what their results indicate and a critical review on how the research was carried out and interpreted. You must choose a different topic and paper for each review. See rubric for all details. **Due: February 21<sup>st</sup>, March 21<sup>st</sup>.**

Points Available:

Assignment	Points
Exams (125 points each X 2)	250 pts
Quizzes (20 points each X 5)	100 pts
Thought Labs (50 points each X 6)	300 pts
Critical article review (100 pts each X 2)	200 pts
Final Exam (Cumulative)	150 pts
Total	1000 pts

Grading scale:

A = 90-100%  
 B = 80-89%  
 C = 70-79%  
 D = 60-69%  
 F = below 60%

Tentative lecture schedule:

*\*This information should be treated as an outline – there may be alterations in sequence of topics.*

Unit	Week	Dates (Mon-Sun)	Topic	Activities/ Assignments All Due Dates @ 11:59 PM CST *Except for quizzes, which are open from 8 AM until 8 PM
Unit 1	Week 1	Jan 11 – Jan 17	Structures & Function <b>Reading: Ch. 1</b>	
Unit 2	Week 2	Jan 19 – Jan 24 (short week due to MLK day)	Neurophysiology I <b>Reading: Ch. 4</b>	Quiz 1: Jan 20 <sup>th</sup>
	Week 3	Jan 25 – Jan 31	Neurophysiology II	Thought lab 1: Jan 31 <sup>st</sup> by 11:59PM
Unit 3	Week 4	Feb 1 – Feb 7	Endocrine I <b>Reading: Ch. 6</b>	
	Week 5	Feb 8 – Feb 14	Endocrine II	Quiz 2: Feb 10 <sup>th</sup> Thought lab 2: Feb 14 <sup>th</sup> by 11:59PM
Unit 4	Week 6	Feb 15 – Feb 21	Bones, joints & synovial fluid <b>Reading: Ch. 7</b>	Critical article review 1: Feb 21 <sup>st</sup> by 11:59PM
	Week 7	Feb 22 – Feb 28	Muscle physiology <b>Reading: Ch. 8</b>	Quiz 3: Feb 26 <sup>th</sup>

				Thought lab 3: Feb 28 <sup>th</sup> by 11:59PM
Unit 5	Week 8	Mar 1 – Mar 7	Hematology <b>Reading: Ch. 3</b>	<b>Exam 1: Open Mar 5<sup>th</sup> at 8 AM until 8 PM (Units 1-4)</b>
		Mar 8 – Mar 14	SPRING BREAK	Have a happy Spring break!
Unit 6	Week 9	Mar 15 – Mar 21	Cardiovascular physiology <b>Reading: Ch. 9</b>	Critical article review 2: Mar 21 <sup>st</sup> by 11:59PM
	Week 10	Mar 22 – Mar 28	Cardiovascular physiology	Thought lab 4: Mar 28 <sup>th</sup> by 11:59PM
Unit 7	Week 11	March 29 – Apr 4	Respiratory physiology <b>Reading: Ch. 10</b>	
	Week 12	Apr 5 – Apr 11	Respiratory physiology	Quiz 4: Apr 7 <sup>th</sup> Thought lab 5: Apr 11 <sup>th</sup> by 11:59PM
Unit 8	Week 13	Apr 12 – Apr 18	Urinary physiology <b>Reading: Ch. 11</b>	<b>Exam 2: Open Apr 12<sup>th</sup> at 8 AM until 8 PM (Units 5-7)</b>
		Apr 19 – Apr 25	Digestive physiology <b>Reading: Ch. 12</b>	Thought lab 6: Apr 25 <sup>th</sup> by 11:59 PM
Unit 9	Week 14	Apr 26 – Apr 30	Reproductive physiology <b>Reading: Ch. 14 &amp; 15</b>	Quiz 5: Apr 28 <sup>th</sup>
	Week 15		FINAL EXAM	<b>Final exam: TBD</b>