TEXAS A&M UNIVERSITY
COMMERCE
College of Science and Engineering

BSC 314 COMPARATIVE VERTEBRATE PHYSIOLOGY
COURSE SYLLABUS: Fall 2024

Meets 8/26/2024 through 12/13/2024
Location: Campus: Main, Building*:* STC Room: 122
Lecture Hours: Mon, Wed, Fri 11:00 AM-11:50 AM
Instructor: Dr. Archana Srinivas
Office Location: Science Building, STC 235
Student (Office) Hours: MF 4:00 PM-5:30 PM and by appointment
Office Phone: TBA
University Email Address: Archana.Srinivas@tamuc.edu
Preferred Form of Communication: Email

COURSE INFORMATION

Textbook: Animal Physiology, 4th Edition by Hill, R., Wyse, G. and Anderson, M., Sinauer Associates, Inc., 2016 (Recommended).

ISBN: 978-0-87893-559-8 (Casebound); 978-0-87893-898-8 (Looseleaf)

Course Description

This course is designed for majors with a well-rounded background in biology and provides students with an understanding of basic physiological principles as well as the functional organization of living systems. Emphasis will be placed on the functioning of organ systems in various vertebrate classes and their adaptation to the environment leading to an understanding of evolutionary relationships. We will evaluate i) the mechanisms by which animals perform their life-sustaining functions, ii) the evolution and adaptive significance of physiological traits, iii) the ways in which diverse phylogenetic groups of animals both resemble each other and differ, iv) the ways in which physiology and ecology interact, in the present and during evolutionary time, and v) the importance of all levels of organization—from genes to proteins, and tissues to organs—for the full understanding of physiological systems.

Student Learning Outcomes

Students completing this course will be able to:

1. Compare and contrast the functioning of the major organ systems in various vertebrates.

2. Delineate how differences in their physiology allow vertebrates to adapt to their environment and how this relates to evolutionary development.

3. Use the scientific method in the study of physiology.

4. Explain how a reformed worldview informs our understanding of the concepts discussed.

Specific learning outcomes will be provided in the class while covering each organ system in different vertebrate groups.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

- Proficiency in using the D2L Brightspace Learning Management System in *my*LEO Online
- Microsoft Word and PowerPoint
- Other relevant graphics programs for preparing effective PowerPoint presentations

Instructional Methods

Formal lectures will be supplemented with appropriate audiovisual materials, at home problems, laboratory exercises and discussions. PowerPoint of all lectures will be available for you in the course website in Learning Management System (D2L Brightspace) in *my*LEO Online at https://leo.tamuc.edu/ or sent as e-mail attachments to the students in case of any issues with D2L. I will post announcements on the home page of the course for reminders of important due dates in addition to announcing them in the class. Progress in the class can be monitored in the course webpage in D2L Brightspace.

Student Responsibilities or Tips for Success in the Course

- Dedicated study time each week to go over the materials covered in the class and the information in the relevant book chapter(s)
- Regularly checking both *my*LEO Online (D2L Brightspace) and emails for course related announcements
- Completing assignments on time

GRADING

Final grades in this course will be based on the following scale:

A = 89.5%-100%
B = 79.5%-89.4%
C = 69.5%-79.4%
D = 59.5%-69.4%
F = 59.49% or below

Assessments

Four Exams – 100 points each = 400 points
Quizzes and Assignments = 100 points
Research Paper Discussion/Topic Presentation = 100 points **Total = 600 points**

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

Assignments and Quizzes: At home questions will be assigned multiple times during the semester. Quizzes will be approximately every third week and will be administered in the class (10 questions; 15 min). If you complete the at home questions in the week they are assigned you will receive full credit for completing the assignment on time. If they are done in the subsequent week it will be treated as a quiz. This will hopefully push you to keep up with the material. Be sure to check D2L announcements for continual updates.

Exams: Consist of multiple choice questions (70-80%) and short answer questions (20-30%). The term exams will be taken in class and the final exam will follow the university exam schedule.

There will be four exams covering approximately four chapters each. Some questions for quizzes and exams from a given chapter may be derived from the same Test Pool and repeated.

Extra Credit: 20 points extra credit (3% of the total course grade) will be assigned for a group research presentation/discussion (details to be discussed in the class) on the topic or a published research paper in vertebrate physiology (NOT ANATOMY) to be selected by the students.

Attendance and Absences: You are expected to attend ALL scheduled lectures and take the exams as scheduled. You will be held responsible for all information covered in lecture.

The syllabus/schedule are subject to change

Makeup Policy: The student is responsible for requesting a makeup when they are unable to attend the regularly scheduled examination and must schedule the makeup within 2 days of the absence. Makeup exams will be scheduled only in the event of an EXCUSED absence (as defined in the Student Guidebook). If the test is not made-up, the student will receive a zero for that exam.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.
http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: Netiquette
http://www.albion.com/netiquette/corerules.html

Use of AI:
The critical work of creativity and original writing relies on integrity, originality, and ethical conduct in regard to appropriate representation as an author or creator. Thus, submitting work with a significant percentage of AI-generated content, unless otherwise permitted, can be considered academic misconduct under Texas A&M University Student Rule 20. Students must therefore cite the use of Generative AI tools and document what they have contributed to an assignment.

TAMUC Attendance

For more information about the attendance policy please visit the Attendance webpage and Procedure 13.99.99.R0.01.
http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Graduate Student Academic Dishonesty 13.99.99.R0.10

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf

ADA Statement

Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce
Gee Library- Room 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@tamuc.edu

Website: Office of Student Disability Resources and Services

http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

The syllabus/schedule are subject to change

For a list of locations, please refer to the Carrying Concealed Handguns On Campus document and/or consult your event organizer.

Web url:
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

Use of AI

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty
https://inside.tamuc.edu/aboutus/policiesproceduresstandardsstatements/rulesprocedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

13.99.99.R0.10 Graduate Student Academic Dishonesty
https://inside.tamuc.edu/aboutus/policiesproceduresstandardsstatements/rulesprocedures/13students/graduate/13.99.99.R0.10.pdf

COURSE OUTLINE / CALENDAR

Week 1:	Meet and Greet; Discuss Syllabus and Schedule Introduction (Ch 1) Nutrition, Feeding and Digestion (Ch 6)
Week 2:	Nutrition, Feeding and Digestion (Ch 6) – Cont'd

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Week 3:	Energy Metabolism (Ch 7) Aerobic/Anaerobic Metabolism (Ch 8) **Quiz #1**
Week 4:	Aerobic/Anaerobic Metabolism (Ch 8) – Cont'd **Exam #1**
Week 5:	Energetics of Aerobic Activity (Ch 9) Thermal Relations (Ch 10)
Week 6:	Thermal Relations: Poikilothermy (Ch 10) Thermal Relations: Homeothermy (Ch 10) **Quiz #2**
Week 7:	Neurons: Introduction, Resting Potential (Ch 12) Neurons: Synapses (Ch 13)
Week 8:	Neurons: Synapses (Ch 13) – Cont'd Sensory Processes (Ch 14) **Assignment 1 (Ch 10, 12 & 13)**
Week 9:	Sensory Processes (Ch 14) – Cont'd **Exam #2**
Week 10:	Sensory Processes (Ch 14) – Cont'd Nervous System (Ch 15)
Week 11:	Endocrine & Neuroendocrine Physiology (Ch 16) – Cont'd **Quiz #3**
Week 12:	Reproduction (Ch 17)
Week 13:	**Exam #3** Muscles (Chapter 20)
Week 14:	Respiration: Breathing (Ch 23) **Quiz #4** ***Thanksgiving Break***
Week 15:	Circulation (Ch 25) **Final Exam Review & Quiz #5 (Fri, Dec 6th)**
Week 16:	**Final Exam**

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