BSC 314.01E COMPARATIVE VERTEBRATE PHYSIOLOGY
(CRN: 81205)
COURSE SYLLABUS: Fall 2019

Class Schedule & Location: MWF, 11:00 – 11:50 AM; BA 245

INSTRUCTOR INFORMATION

Instructor: Izhar Khan
Office Location: STC 215
Office Hours: MTWR; 1:00-2:00 PM and by appointment
Office Phone: 903-468-3271
Office Fax: 903-886-5988
University Email Address: izhar.khan@tamuc.edu
Preferred Form of Communication: Email
Communication Response Time: 24 hours

COURSE INFORMATION


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 myLEO 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 myLEO 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 myLEO Online (D2L Brightspace) and emails for course related announcements
- Completing assignments on time
- Working in a group to prepare effective research presentation on a selected topic in animal physiology

The syllabus/schedule are subject to change
GRADING

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

A = 89.5%-100% (447.46 to 500 points)
B = 79.5%-89.4% (397.46 to 447.45 points)
C = 69.5%-79.4% (347.46 to 397.45 points)
D = 59.5%-69.4% (297.46 to 347.45 points)
F = 59.49% or below (297.45 points or below)

Assessments

Four Exams – 100 points each = 400 points
Quizzes and Assignments = 100 points
Research Paper Discussion/Topic Presentation = 20 points (extra credit, which I encourage)
Total = 500 points

TECHNOLOGY REQUIREMENTS

Browser support

D2L is committed to performing key application testing when new browser versions are released. New and updated functionality is also tested against the latest version of supported browsers. However, due to the frequency of some browser releases, D2L cannot guarantee that each browser version will perform as expected. If you encounter any issues with any of the browser versions listed in the tables below, contact D2L Support, who will determine the best course of action for resolution. Reported issues are prioritized by supported browsers and then maintenance browsers.

Supported browsers are the latest or most recent browser versions that are tested against new versions of D2L products. Customers can report problems and receive support for issues. For an optimal experience, D2L recommends using supported browsers with D2L products.

Maintenance browsers are older browser versions that are not tested extensively against new versions of D2L products. Customers can still report problems and receive support for critical issues; however, D2L does not guarantee all issues will be addressed. A maintenance browser becomes officially unsupported after one year.

Note the following:

- Ensure that your browser has JavaScript and Cookies enabled.
- For desktop systems, you must have Adobe Flash Player 10.1 or greater.
- The Brightspace Support features are now optimized for production environments when using the Google Chrome browser, Apple Safari browser, Microsoft Edge browser, Microsoft Internet Explorer browser, and Mozilla Firefox browsers.

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### Desktop Support

<table>
<thead>
<tr>
<th>Browser</th>
<th>Supported Browser Version(s)</th>
<th>Maintenance Browser Version(s)</th>
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</thead>
<tbody>
<tr>
<td>Microsoft® Edge</td>
<td>Latest</td>
<td>N/A</td>
</tr>
<tr>
<td>Microsoft® Internet Explorer®</td>
<td>N/A</td>
<td>11</td>
</tr>
<tr>
<td>Mozilla® Firefox®</td>
<td>Latest, ESR</td>
<td>N/A</td>
</tr>
<tr>
<td>Google® Chrome™</td>
<td>Latest</td>
<td>N/A</td>
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<tr>
<td>Apple® Safari®</td>
<td>Latest</td>
<td>N/A</td>
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</tbody>
</table>

### Tablet and Mobile Support

<table>
<thead>
<tr>
<th>Device</th>
<th>Operating System</th>
<th>Browser</th>
<th>Supported Browser Version(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Android™</td>
<td>Android 4.4+</td>
<td>Chrome</td>
<td>Latest</td>
</tr>
<tr>
<td>Apple</td>
<td>iOS®</td>
<td>Safari, Chrome</td>
<td>The current major version of iOS (the latest minor or point release of that major version) and the previous major version of iOS (the latest minor or point release of that major version). For example, as of June 7, 2017, D2L supports iOS 10.3.2 and iOS 9.3.5, but not iOS 10.2.1, 9.0.2, or any other version. Chrome: Latest version for the iOS browser.</td>
</tr>
<tr>
<td>Windows</td>
<td>Windows 10</td>
<td>Edge, Chrome, Firefox</td>
<td>Latest of all browsers, and Firefox ESR.</td>
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</tbody>
</table>
• You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
  o 512 MB of RAM, 1 GB or more preferred
  o Broadband connection required courses are heavily video intensive
  o Video display capable of high-color 16-bit display 1024 x 768 or higher resolution

• **For YouSeeU Sync Meeting sessions 8 Mbps is required.** Additional system requirements found here: [https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements](https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements)

• You must have a:
  o Sound card, which is usually integrated into your desktop or laptop computer
  o Speakers or headphones.
  o *For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.

• Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: [JAVA web site](http://www.java.com/en/download/manual.jsp)

• Current anti-virus software must be installed and kept up to date.

Running the browser check will ensure your internet browser is supported.
  Pop-ups are allowed.
  JavaScript is enabled.
  Cookies are enabled.

• You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
  o Adobe Reader [https://get.adobe.com/reader/](https://get.adobe.com/reader/)
  o Adobe Flash Player (version 17 or later) [https://get.adobe.com/flashplayer/](https://get.adobe.com/flashplayer/)
  o Adobe Shockwave Player [https://get.adobe.com/shockwave/](https://get.adobe.com/shockwave/)

• At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.

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ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

Brightspace Support

Need Help?
Student Support

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778 or click on the Live Chat or click on the words “click here” to submit an issue via email.

System Maintenance

D2L runs monthly updates during the last week of the month, usually on Wednesday. The system should remain up during this time unless otherwise specified in an announcement. You may experience minimal impacts to performance and/or look and feel of the environment.

Interaction with Instructor Statement

The grading of the assignments, quizzes, and exams will be completed within 1-5 days depending on the length of the assignment or test. In most cases the grading will be completed within 24 hours and the questions will be discussed during the next class period. Students are encouraged to make an appointment with the instructor outside the office hours to discuss any issue related to the course individually or in groups.

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

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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:** 15 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.

**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](http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx)

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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

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

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/

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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.

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.

COURSE OUTLINE / CALENDAR

Week 1: Aug 26-30 Meet and Greet; Discuss Syllabus and Schedule Introduction (Ch 1) Nutrition, Feeding and Digestion (Ch 6)

Week 2: Sep 2-6 Labor Day – No Class Nutrition, Feeding and Digestion (Ch 6) – Cont’d

Week 3: Sep 9-13 Energy Metabolism (Ch 7) Aerobic/Anaerobic Metabolism (Ch 8) Quiz #1 (Fri, Sep 13th; Ch 1, 6 & 7)

Week 4: Sep 16-20 Aerobic/Anaerobic Metabolism (Ch 8) – Cont’d Exam #1 (Fri, Sep 20th; Ch 1, 6 & 7)

Week 5: Sep 23-27 Energetics of Aerobic Activity (Ch 9) Thermal Relations (Ch 10)

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Week 6: Sep 30- Oct 4  
Thermal Relations: Poikilothermy (Ch 10) 
Thermal Relations: Homeothermy (Ch 10)  
**Quiz #2 (Fri, Oct 4th; Ch 8 & 9)**

Week 7: Oct 7-11  
Neurons: Introduction, Resting Potential (Ch 12) 
Neurons: Synapses (Ch 13)

Week 8: Oct 14-18  
Neurons: Synapses (Ch 13) – Cont’d 
Sensory Processes (Ch 14)  
**Assignment 1 (Ch 10, 12 & 13)**

Week 9: Oct 21-25  
Sensory Processes (Ch 14) – Cont’d 
Nervous System (Ch 15)  
**Exam #2 (Fri, Oct 25th; Ch 10, 12 & 13)**

Week 10: Oct 28- Nov 1  
Nervous System (Ch 15)  
Endocrine & Neuroendocrine Physiology (Ch 16)

Week 11: Nov 4, 6 & 8  
Endocrine & Neuroendocrine Physiology (Ch 16) – Cont’d 
**Quiz #3 (Mon, Nov 5th; Ch 14 & 15)** 
*TAMU Pathways Symposium – No Class on Wed & Fri*

Week 12: Nov 11-15  
Reproduction (Ch 17)

Week 13: Nov 18-22  
**Exam #3 (Mon, Nov 19th; Ch 15-17)**  
Muscles (Chapter 20)

Week 14: Nov 25-29  
Respiration: Breathing (Ch 23)  
**Quiz #4 (Mon, Nov 25th; Ch 20 & 23)**  
*Thanksgiving Break*

Week 15: Dec 2-6  
Circulation (Ch 25)  
**Final Exam Review & Quiz #5 (Fri, Dec 6th)**

**Wednesday, Dec 11th**  
Final Exam, 10:30 AM – 12:30 PM  
60% Cumulative + 40% from Chapters 20, 23 & 25

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