BSC 523.01W VERTEBRATE ENDOCRINOLOGY (CRN: 25573)

COURSE SYLLABUS: Spring 2022

Virtual Class Meetings via Zoom in D2L: Mon or Tue (TBD),

6:00-7:00 PM or longer as needed

INSTRUCTOR INFORMATION

Instructor: Izhar Khan
Office Location: STC 215
Office Hours: Mon-Thu, 1:00-2:00 PM, or by email when needed
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

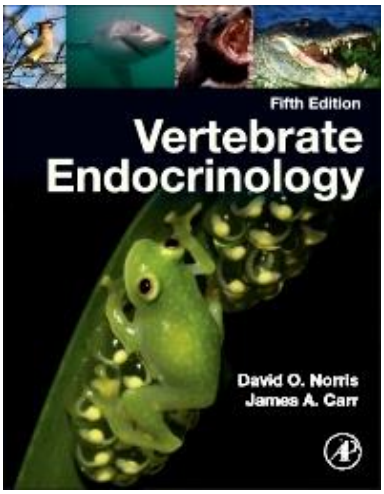
COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook:

> **Vertebrate Endocrinology** (2013, 5th Edition) by David O. Norris & James A. Carr, Academic Press (Print Book ISBN: 9780123948151; eBook ISBN: 9780123964656

In addition to the textbook, information from other sources, including original research papers, will be incorporated in the course as needed.



Course Description

This online course is designed for graduate students in the Biological and Environmental sciences interested in the field of Vertebrate Endocrinology. The course will focus on the

structure and function of the vertebrate endocrine system. Lectures encompass three major topic areas. The first topic area will focus on general principles of endocrinology including hormone synthesis and secretion, hormone receptors, endocrine feedback mechanisms and the basic molecular mechanisms of hormonal action. In the second topic area of the course, the hormonal regulation of growth, energy metabolism, reproduction and homeostasis will be presented using a "systems" rather than "hormone-by-hormone" approach. When relevant, endocrine disorders will be highlighted. The third topic area will focus on contemporary issues in endocrinology such as hormonal contraception, environmental endocrine disruption, sports "doping" and obesity. Students will draw upon concepts discussed in the first two topic areas of the course to critically evaluate peer-reviewed journal articles, newspaper articles, etc. related to these issues. In addition, students will complete several writing assignments designed to introduce them to the format of scientific writing in the field Endocrinology.

University Catalog Description

BSC 523 Vertebrate Endocrinology – Three semester hours. This course is designed for graduate students with a thorough background in biology and cell biology. Therefore, this course provides students with a greater understanding of molecular, developmental, and network mechanisms of endocrine function. After a basic introduction of endocrinology and basic mechanisms, emphasis and focus will be placed on individual tissues and their respective hormones including the pituitary, hypothalamus, neurohypophysial, gastrointestinal, pancreatic, adrenal, thyroid and reproductive systems.

Student Learning Outcomes

Upon completion of this course students will be able to:

1. Understand basic endocrine terminology.
2. Explain the cellular and molecular mechanisms of how hormones are synthesized and secreted, and act by binding to their specific receptors on the target cells
3. Explain how hormones regulate various aspects of normal physiology and how impairment of hormone synthesis, secretion and/or actions can result in endocrine disorders
4. Apply the knowledge of endocrine systems to understand contemporary issues in the field such as contraception, endocrine disruption, steroid abuse, and obesity
5. Interpret, summarize and present important research findings in vertebrate endocrinology, including endocrine disorders

COURSE REQUIREMENTS

Minimal Technical Skills Needed

- Proficiency in using the D2L Brightspace Learning Management System in myLeo Online
- Microsoft Word, Excel, and PowerPoint
- Other relevant graphics programs for preparing effective PowerPoint presentations

Instructional Methods

Weekly class meetings in the Virtual Classroom (Zoom) will be supplemented with a variety of assessment tools, review of relevant original research papers, and preparation of two research presentations on selected topics. All materials and assessments 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 website for reminders of important due dates in addition to announcing them in the virtual class meetings. 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 posted on the course website
- Submitting assignments before deadlines
- Regularly checking both *my*LEO Online (D2L) and emails for course related announcements

GRADING

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

A = 89.5%-100% (357.46 to 400 points)
B = 79.5%-89.4% (317.46 to 357.45 points)
C = 69.5%-79.4% (277.46 to 317.45 points)
D = 59.5%-69.4% (237.46 to 277.45 points)
F = 59.49% or below (237.45 points or below)

Assessments

Two lecture exams – 100 points each = 200 points
Three quizzes – 40, 30, and 30 points = 100 points
Two Research presentations = 50 points each = 100 points
Total = 400 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.

Desktop Support

Browser	Supported Browser Version(s)	Maintenance Browser Version(s)
Microsoft® Edge	Latest	N/A
Microsoft® Internet Explorer®	N/A	11
Mozilla® Firefox®	Latest, ESR	N/A
Google® Chrome™	Latest	N/A
Apple® Safari®	Latest	N/A

Tablet and Mobile Support

Device	Operating System	Browser	Supported Browser Version(s)
Android™	Android 4.4+	Chrome	Latest

Device	Operating System	Browser	Supported Browser Version(s)
Apple	iOS®	Safari, Chrome	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, D2Lsupports 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.
Windows	Windows 10	Edge, Chrome, Firefox	Latest of all browsers, and Firefox ESR.

- You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
    - 512 MB of RAM, 1 GB or more preferred
    - Broadband connection required courses are heavily video intensive
    - 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

- You must have a:
    - Sound card, which is usually integrated into your desktop or laptop computer
    - Speakers or headphones.
    - *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:
  - Adobe Reader https://get.adobe.com/reader/
  - Adobe Flash Player *(version 17 or later)* https://get.adobe.com/flashplayer/
  - Adobe Shockwave Player https://get.adobe.com/shockwave/
  - Apple Quick Time http://www.apple.com/quicktime/download/

- 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.

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: The assignment will consist of two research presentation files to be prepared by each student during the semester on any topics related to Vertebrate Endocrinology or Endocrine Disorders.

Quizzes & Exams: Consist of a mix of multiple choice and short answer type questions. Three quizzes and both the exams will be offered online and will remain open for 48 hours.

Attendance and Absences: Although there is no attendance requirement for this online course, you are expected to complete assignments and take the tests as scheduled. You are also responsible for all information covered in the virtual class meetings over Zoom within the course website in D2L.

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's Guidebook). If the test is not made-up, the student will receive a zero for that assessment.

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

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.

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: Jan 12-14	Syllabus – No Virtual Class Meeting (Classes start on Wed)
Week 2: Jan 17-21	Introduction: Concept of bioregulation and bioregulators (Ch 1)
Week 3: Jan 24-28	Introduction: Concept of bioregulation and bioregulators (Ch 1) Methods to study bioregulation (Ch 2)
Week 4: Jan 31-Feb 4	Synthesis, metabolism and actions of bioregulators (Ch 3)
Fri & Sat, Feb 4th & 5th	**Quiz 1 (Chapters 1-3)**
Week 5: Feb 7-11	Mammalian hypothalamus-pituitary axes (Ch 4)
Week 6: Feb 14-18	Mammalian hypothalamus-pituitary axes (Ch 4) Hypothalamus-pituitary system in non-mammalian vertebrates (Ch 5)
Week 7: Feb 21-25	Hypothalamus-pituitary system in non-mammalian vertebrates (Ch 5)
Fri & Sat, Feb 25th & 26th	**Quiz 2 (Chapters 4 & 5)**
Week 8: Feb 28-Mar 4	Hypothalamus-pituitary-thyroid axis of mammals (Ch 6)
Fri & Sat, Mar 4th & 5th	**Exam 1 (Chapters 1-6)**
Week 9: Mar 7-11	Hypothalamus-pituitary-thyroid axis of non-mammalian vertebrates (Ch 7)
Sat, Mar 12th	**First Research Presentation File Due**
March 14-18 – Spring Break	
Week 10: Mar 21-25	Mammalian adrenal glands (Ch 8)
Week 11: Mar 28-Apr 1	Comparative aspects of vertebrate adrenal Glands (Ch 9)
Week 12: Apr 4-8	Endocrinology of mammalian reproduction (Ch 10)

Fri & Sat, Apr 8th & 9th	**Quiz 3 (Chapters 8 & 9)**
Week 13: Apr 11-15	Endocrinology of mammalian reproduction (Ch 10) Comparative aspects of vertebrate reproduction (Ch 11)
Week 14: Apr 18-22	Comparative aspects of vertebrate reproduction (Ch 11))
Sat, Apr 23rd	**Second Research Presentation File Due**
Week 15: Apr 25-29	Regulation of feeding, digestion and metabolism (Ch 12)

Tue, May 3rd (Last Class Day) – Catch-up or answer any questions in a Zoom meeting on Mon or Tue in consultation with the students

Sat & Sun, May 7th & 8th	**Exam 2 (Final) - (50% Cumulative + 50% from Chapters 7-12)**