

EPHP 3301, Exercise Biochemistry

Fall 2019

Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION

This course meets face-to-face with supplemental materials made available online through the Texas A&M-Central Texas Canvas Learning Management System

[<https://tamuct.instructure.com/>].

Dates/Times: Tuesdays and Thursdays – 11:00am – 1:45pm

Location: Warrior Hall 304

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Julie Kresta, PhD

Office: 322M Warrior Hall

Phone: 254-519-5428

Email: jkresta@tamuct.edu

Office Hours

Monday-Thursday – 9:00-11:00am, or by appointment

Student-instructor interaction

Students are encouraged to use office hours and email as the primary methods to contact the course instructor. Email will be checked regularly throughout the day up until 9:00pm during the academic week. Email responses will be made within 24-48 hours. Appointments can also be made and are recommended to discuss any course material and/or issues.

WARRIOR SHIELD

Emergency Warning System for Texas A&M University-Central Texas

Warrior Shield is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in Warrior Shield through their myCT email account.

Connect to Warrior Shield by [911Cellular](https://portal.publicsafetycloud.net/Account/Login) [<https://portal.publicsafetycloud.net/Account/Login>] to change where you receive your alerts or to opt out. By staying enrolled in Warrior Shield, university officials can quickly pass on safety-related information, regardless of your location.

COURSE INFORMATION

Course Overview and description:

This course is designed to give students the opportunity to use and understand relevant fitness testing equipment and protocols. In addition, they will learn to utilize the data obtained through fitness testing to prescribe appropriate exercise programs. Students will learn the guidelines and protocols for safe and effective exercise testing for normal and special populations.

Course Objective:

The purpose of this course is to provide an overview of the biochemistry and metabolism related to exercise, training adaptations, and nutrition. Students will learn to describe and utilize the biophysical effects of exercise and nutrition as it related to different populations and training goals.

Student Learning Outcomes

1. Understand the structure and function of proteins and each of the major amino acids.
2. Understand the structure and metabolism of carbohydrates.
3. Understand the structure and metabolism of lipids.
4. Describe the acute metabolic responses to various forms of exercise, specifically regarding intensity and duration.
5. Describe the chronic metabolic response to various forms of exercise, specifically regarding modality and frequency.
6. Identify the role and regulation of enzymes in metabolic pathways.
7. Explain the bioenergetic requirements of muscle tissue
8. Describe the individual steps in each major metabolic pathway.

Required Reading and Textbook(s):

Mougios, Vassilis. Exercise Biochemistry, 2nd Edition. Human Kinetics 2020.
ISBN: 978-1-4925-2904-0

COURSE REQUIREMENTS

Course Requirements:

Written Examinations: All written examinations will be delivered during class time on the designated dates. Exams will include questions in various formats including multiple choice, short answer and/or essays. In addition, all examinations may be cumulative and will be explained by the course instructor.

EXAMINATION ATTENDANCE

All examinations must be taken on the date and at the time scheduled by the course coordinator. **Any student missing a scheduled exam will receive a 0 for that exam.** In the cases of extenuating circumstances, the student may petition for delayed or early examination. (Note: the early option is only available for written examinations). Requests

for an alternate examination period need to be submitted in writing or via email to the course coordinator at least **14 days in advance of the scheduled exam**.

For unanticipated events (illnesses, car accident, etc.), students should notify the course coordinator by email and by phone as soon as possible. Appropriate documentation (Doctor's note etc.) at the discretion of the course coordinator will need to be provided before an examination is re-scheduled.

EXAMINATION POLICY

The following items are not allowed during testing:

- Breaks / Bathroom breaks (If student needs to leave the classroom for any reason (including to use the bathroom) they must submit their exam whether or not it is completed)
- Book bags, handbags or any other bag of materials (bags to be placed in the front or side of the testing room)
- No food or drink on the desk or in the surrounding area
- No technology / electronic devices other than the computer used for testing (only if the exam is given through a computer-based program). This includes smart watches, cell phones, tablets, PDAs, etc.
- No hats or other large accessories
- No earphones / headphones

The following items may only be used as indicated by the course instructor and must be turned into the faculty upon completion of the examination:

- Blank sheet of paper (checked prior by instructor)
- Pen/pencil used to write on paper (checked prior by instructor)
- Ear plugs (checked prior by instructor)

Assignments: Students will be asked to complete several assignments related to the material being covered in class. These assignments will be explained in detail at least a week prior to the due date. Students may work together and/or use notes or other learning materials for these assignments, but each student might submit their own work to be graded, unless otherwise noted by the instructor.

Article Reviews/Presentations: Students will be asked to select a peer-reviewed, original research study article of their choice related to the current topics being discussed in lecture. These articles should be a recent publication of the previous 10 years and from a peer-reviewed journal and should be a review article or meta-analysis. An example of a resource for locating appropriate peer-reviewed articles includes Pubmed (<https://www.ncbi.nlm.nih.gov/pubmed/>). Once the article is selected, the student will review it and write an abstract of no more than 500 words summarizing the major sections and conclusions of the study to be graded. In addition, students will prepare a brief presentation of the research article. Students will be graded on the written abstract as well as the in-class presentation using rubrics that will be provided in advance.

GRADING POLICY: The student will be graded as follows:

<u>Item</u>	<u>Weight</u>
Exam I	25%
Exam II	25%
Assignments	25%
<u>Article Reviews/Presentations</u>	<u>25%</u>
Total	100%

Grading Criteria Rubric and Conversion

Specific rubrics to be used for grading will be made available via Canvas when the assignment is posted.

Posting of Grades

- Grades for assignments, quizzes, exams, and projects will be posted on the Canvas Grade book for students to access. In addition to individual item grades, a running cumulative course grade will be available to view.
- All assignments, exams, and presentations will be graded within 1 week of the due date, unless otherwise specified by the professor.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar

COURSE SCHEDULE: 1ST 8-WEEK TERM

WEEK 1 –

- LECTURE 1: *Tuesday, August 27*
 - **PRIMING ACTIVITY**: Read 2 (p. 21-31)
 - **IN CLASS**: Syllabus Review / Biochemistry Basics
- LECTURE 2: *Thursday, August 29*
 - **PRIMING ACTIVITY**: Read Chapter 3 (p. 35-54)
 - **IN CLASS**: Proteins

WEEK 2 –

- LECTURE 1: *Tuesday, September 3*
 - **PRIMING ACTIVITY**: Read Chapter 4 (p. 61-84)
 - **IN CLASS**: Nucleic Acids and Gene Expression
 - **POST ACTIVITY**: [ASSIGNMENT 1 – Due Tuesday, September 10](#)
- LECTURE 2: *Thursday, September 5*
 - **PRIMING ACTIVITY**: Read Chapter 5 (p. 89-100)
 - **IN CLASS**: Carbohydrates and Lipids

WEEK 3 –

- LECTURE 1: *Tuesday, September 10*
 - **PRIMING ACTIVITY**: Read Chapter 6 (p 105-116)
 - **IN CLASS**: Vitamins and Minerals
- LECTURE 2: *Thursday, September 12*
 - **PRIMING ACTIVITY**: Review Chapters 2-6
 - **IN CLASS**: Exam 1 Review / [ARTICLE REVIEW & PRESENTATION #1](#)

WEEK 4 –

- LECTURE 1: *Tuesday, September 17*
 - **PRIMING ACTIVITY**: Review Chapters 2-6
 - **IN CLASS**: [EXAM I – Biochemistry Basics, Proteins, Nucleic Acids & Gene Expression, Carbohydrates & Lipids, and Vitamins & Minerals](#)
- LECTURE 2: *Thursday, September 19*
 - **PRIMING ACTIVITY**: Read Chapter 9 (p. 171-179) and Chapter 10 (p. 183-232)
 - **IN CLASS**: Exercise Metabolism / Compounds of High Phosphoryl-Transfer Potential AND start Carbohydrate Metabolism in Exercise
 - **POST ACTIVITY**: [ASSIGNMENT 2 – Due Thursday, September 26](#)

WEEK 5 –

- LECTURE 1: Tuesday, September 24
 - **PRIMING ACTIVITY:** Read Chapter 10 (p. 193-232)
 - **IN CLASS:** Carbohydrate Metabolism in Exercise
- LECTURE 2: Thursday, September 26
 - **PRIMING ACTIVITY:** Read Chapter 11 (p. 239-275)
 - **IN CLASS:** Lipid Metabolism in Exercise

WEEK 6 –

- LECTURE 1: Tuesday, October 1
 - **PRIMING ACTIVITY:** Read Chapter 12 (p. 281-297)
 - **IN CLASS:** Lipid Metabolism (continued) AND Protein Metabolism in Exercise
- LECTURE 2: Thursday, October 3
 - **PRIMING ACTIVITY:** Read Chapter 13 (p. 305-323)
 - **IN CLASS:** Exercise on Gene Expression

WEEK 7 –

- LECTURE 1: Tuesday, October 8
 - **PRIMING ACTIVITY:** Read Chapter 14 (p. 327-368)
 - **IN CLASS:** Integration of Exercise Metabolism
- LECTURE 2: Thursday, October 10
 - **PRIMING ACTIVITY:** Read Chapters 16-18 (p. 407-438)
 - **IN CLASS:** Biochemical Assessments
 - **POST ACTIVITY:** [ASSIGNMENT 3 – Due Thursday, October 17](#)

WEEK 8 –

- LECTURE 1: Tuesday, October 15
 - **PRIMING ACTIVITY:** Review Chapters 9-14 and 16-18
 - **IN CLASS:** Exam 2 Review / [ARTICLE REVIEW & PRESENTATION #2](#)
- LECTURE 2: Thursday, October 17
 - **PRIMING ACTIVITY:** Review Chapters 9-14 and 16-18
 - **IN CLASS:** [EXAM II – Exercise Metabolism, Gene Expression, Biochemical Assessments](#)

Important University Dates

- September 3, 2019 – Deadline to Drop First 8-week classes with no record
- October 4, 2019 – Deadline to Drop First 8-week classes with a Quit (Q) or Withdraw (W)

TECHNOLOGY REQUIREMENTS AND SUPPORT

Technology Requirements

This course will use the A&M-Central Texas Instructure Canvas learning management system. Logon to A&M-Central Texas Canvas [<https://tamuct.instructure.com/>] or access Canvas through the TAMUCT Online link in myCT [<https://tamuct.onecampus.com/>]. You will log in through our Microsoft portal.

Username: Your MyCT email address. Password: Your MyCT password

Canvas Support

Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select “Chat with Canvas Support,” submit a support request through “Report a Problem,” or call the Canvas support line: 1-844-757-0953.

For issues related to course content and requirements, contact your instructor.

Other Technology Support

For log-in problems, students should contact Help Desk Central

24 hours a day, 7 days a week

Email: helpdesk@tamu.edu

Phone: (254) 519-5466

[Web Chat](http://hdc.tamu.edu): [<http://hdc.tamu.edu>]

Please let the support technician know you are an A&M-Central Texas student.

UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Drop Policy

If you discover that you need to drop this class, you must complete a [Drop Request Form](https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf) [https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf].

Professors cannot drop students; this is always the responsibility of the student. The Registrar’s Office will provide a deadline on the Academic Calendar for which the form must be completed, signed and returned. Once you return the signed form to the Registrar’s Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar’s Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

Academic Integrity

Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be reported to the university's Office of Student Conduct. Ignorance of the university's standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

For more [information regarding the Student Conduct process](https://www.tamuct.edu/student-affairs/student-conduct.html),

[<https://www.tamuct.edu/student-affairs/student-conduct.html>].

If you know of potential honor violations by other students, you may [submit a report](https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=0),

[https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=0].

Academic Accommodations

At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier-free education. The Office of Access and Inclusion is responsible for ensuring that students with a disability receive equal access to the university's programs, services and activities. If you believe you have a disability requiring reasonable accommodations please contact the Office of Access and Inclusion, WH-212; or call (254) 501-5836. Any information you provide is private and confidential and will be treated as such.

For more information please visit our [Access & Inclusion](https://tamuct.instructure.com/courses/717) Canvas page (log-in required)

[<https://tamuct.instructure.com/courses/717>]

Important information for Pregnant and/or Parenting Students

Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and related guidance from US Department of Education's Office of Civil Rights, the Dean of Student Affairs' Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. Students should seek out assistance as early in the pregnancy as possible. For more information, please visit [Student Affairs](https://www.tamuct.edu/student-affairs/index.html) [<https://www.tamuct.edu/student-affairs/index.html>]. Students may also contact the institution's Title IX Coordinator. If you would like to read more about these [requirements and guidelines](http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf) online, please visit the website [<http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf>].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender—including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Associate Dean in the Division of Student Affairs at (254) 501-5909 to seek out assistance. Students may also contact the University’s Title IX Coordinator.

Tutoring

Tutoring is available to all A&M-Central Texas students, both on-campus and online. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111. Tutor.com tutoring **will not offer writing support** beginning August 1, 2019, but will continue to offer other tutoring support.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or have any other question, contact Academic Support Programs at (254) 519-5796, or by emailing Dr. DeEadra Albert-Green at deeadra.albertgreen@tamuct.edu.

Chat live with a tutor 24/7 for almost any subject from on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log in and receive online tutoring support at no additional cost. This tool provides tutoring in over 40 subject areas. Access Tutor.com through Canvas.

University Writing Center

Located in Warrior Hall 416, the University Writing Center (UWC) at Texas A&M University–Central Texas (TAMUCT) is a free workspace open to all TAMUCT students from 10:00 a.m.-5:00 p.m. Monday thru Thursday with satellite hours in the University Library Monday thru Thursday from 6:00-9:00 p.m. This semester, the UWC is also offering online only hours from 12:00-3:00 p.m. on Saturdays.

Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students’ ideas and writing, our tutors highlight the ways in which they read and interpret students’ texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the UWC is here to help!

Students may arrange a one-to-one session with a trained and experienced writing tutor by visiting the UWC during normal operating hours (both half-hour and hour sessions are available) or by making an appointment via [WOnline](https://tamuct.mywconline.com/) [https://tamuct.mywconline.com/]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu if you have any questions about the UWC and/or need any assistance with scheduling.

University Library

The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 85,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available 24 hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our [Library website](http://tamuct.libguides.com/index) [http://tamuct.libguides.com/index].

OPTIONAL POLICY STATEMENTS

A Note about Sexual Violence at A&M-Central Texas

Sexual violence is a serious safety, social justice, and public health issue. The university offers support for anyone struggling with these issues. University faculty are mandated reporters, so if someone discloses that they were sexually assaulted (or a victim of Domestic/Dating Violence or Stalking) while a student at TAMUCT, faculty members are required to inform the Title IX Office. If you want to discuss any of these issues confidentially, you can do so through Student Counseling (254-501-5955) located on the second floor of Warrior Hall (207L).

Sexual violence can occur on our campus because predators often feel emboldened, and victims often feel silenced or shamed. It is incumbent on ALL of us to find ways to actively create environments that tell predators we don't agree with their behaviors and tell survivors we will support them. Your actions matter. Don't be a bystander; be an agent of change. For additional information on campus policy and resources visit the [Title IX webpage](#)

[<https://www.tamuct.edu/departments/compliance/titleix.php>].

Behavioral Intervention

Texas A&M University-Central Texas cares about the safety, health, and well-being of its students, faculty, staff, and community. If you are aware of individuals for whom you have a concern, who are exhibiting behaviors that pose a threat to safety, or individuals causing a significant disruption to our community, please make a referral to the Behavioral Intervention Team. You can complete the [referral](#) online [https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2].

Anonymous referrals are accepted. Please see the [Behavioral Intervention Team](#) website for more information [<https://www.tamuct.edu/student-affairs/bat.html>]. If a person's behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5800.

INSTRUCTOR POLICIES

Unauthorized and/or distracting use of electronic devices will not be tolerated in the classroom. Electronic devices include, but are not limited to, computers, cell phones, pagers, smart watches, and Tablets. Examples of unauthorized use include: "Instant-Messaging"; inappropriate internet browsing/surfing; playing games; talking on cell phones; e-mailing. Students are expected to turn off audio notification for cell phones and pagers. ***A student who engages in distracting or unauthorized use of electronic equipment in class may be asked to immediately leave class.***

COMPUTER ISSUES

Many students utilize personal laptops or tablets for note and examination taking, and for submitting assignments electronically to Canvas or other online programs. If a student should have issues regarding submission of assignments due to technical computer issues (i.e. computer malfunction, network outage, etc.), the student is responsible for submitting the assignment on time. They should email or phone their course instructor to notify them of the issue and attempt to submit the assignment via email or other means as decided by the course instructor. Submission of a late assignment due to technical computer issues as described above will follow the Late Work Policy. No exceptions will be made for technical problems involving the internet, email, or Canvas.

If a student has technical issues and requires an additional computer/laptop for examination, it is their responsibility to notify the course instructor to attain the necessary equipment. Notification should be given at least 24 hours prior to the examination date/time, if possible.

LATE WORK

Students should turn assignments in by their due date and time as indicated by the course instructor or syllabus. In the event that assignments are turned in after the appropriate designated date/time without prior approval by the course instructor, the following course policy applies:

- On the first offense, the student will receive a decrease in their grade on the assignment by one letter grade in addition to any missed points on the assignment.
- On the second late offense, or any thereafter, the student will receive a “0” for the assignment.

No exceptions will be made for technical problems involving the internet, email, or Canvas. Emergency or illness are some of the only exceptions to this policy. All potential exceptions will be dealt with on an individual basis.

EXAMINATION REVIEW

Students will be provided with one opportunity to review their examination. The review will be at the discretion of the course coordinator. Students are not permitted to copy, write, reproduce, photograph or identify in any way examination questions, answers and/or rationale (hard or electronic format) provided during an examination/quiz review and will be considered an honor code violation if done so. Students may request an appointment with the instructor to review exams an additional time.

Copyright Notice

Students should assume that all course material is copyrighted by the respective author(s). Reproduction of course material is prohibited without consent by the author and/or course instructor. Violation of copyright is against the law and Texas A&M University-Central Texas’ Code of Academic Honesty. All alleged violations will be reported to the Office of Student Conduct.

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