EPHP 3304-125, 80663, Exercise Biochemistry

Fall 2023

Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION

This course meets from August 28, 2022 through October 20, 2022

This is a 100% online course, and uses the A&M-Central Texas Canvas Learning Management System [https://tamuct.instructure.com/].

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Julie Kresta, PhD Email: jkresta@tamuct.edu

Office Hours

By appointment only, please email to schedule a time.

Student-instructor interaction

Students are encouraged to use email as the primary method to contact the instructor. Email is 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.

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

SAFEZONE. SafeZone provides a public safety application that gives you the ability to call for help with the push of a button. It also provides Texas A&M University-Central Texas the ability to communicate emergency information quickly via push notifications, email, and text messages. All students automatically receive email and text messages via their myCT accounts.

Downloading SafeZone allows access to push notifications and enables you to connect directly for help through the app.

You can download SafeZone from the app store and use your myCT credentials to log in. If you would like more information, you can visit the <u>SafeZone</u> website [www.safezoneapp.com].

To register SafeZone on your phone, please follow these 3 easy steps:

- 1. Download the SafeZone App from your phone store using the link below:
 - <u>iPhone/iPad</u>: [https://apps.apple.com/app/safezone/id533054756]
 - Android Phone / Tablet
 [https://play.google.com/store/apps/details?id=com.criticalarc.safezoneapp]
- 2. Launch the app and enter your myCT email address (e.g. {name}@tamuct.edu)
- 3. Complete your profile and accept the terms of service

For updates on COVID information, please monitor the University website

[https://www.tamuct.edu/covid19/]

COURSE INFORMATION

Course Overview and description

This course provides an overview of the biochemistry and metabolism related to exercise, training adaptations, and nutrition.

Course Objective or Goal

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

Examinations: All written examinations will be delivered online through Canvas 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. Requests for an alternate examination period need to be submitted in writing or via email to the course coordinator at least **7** days in advance of the scheduled exam.

For unanticipated events (illnesses, car accident, etc.), students should notify the course instructor by email and/or 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:

- Book bags, handbags or any other bag of materials (bags to be placed in the front or side of the testing room)
- No technology / electronic devices other than the computer used for testing. This includes smart watches, cell phones, tablets, PDAs, etc.
- No other individuals, as all examinations are to be completed independently

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 must submit their own work to be graded, unless otherwise noted by the instructor.

Weekly Discussions: Each week, there will be a discussion board created to cover specific topics. The course instructor will ask several critical thinking questions that each student will be asked to answer. Students must comment at least once per discussion board to receive credit and will be graded on the quality of their comments based on a rubric that will be provided in advance.

Article Review/Presentation: 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 not 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 that will be posted to Canvas for all students to view. A discussion board will be created for each presentation for comments and questions. The presenter will be responsible for leading the discussion for their presentation; however, all students must comment on at least 3 of their peers' discussion boards to receive participation credit. Students will be graded on the written abstract, the presentation, and the quality of comments on the discussion boards (both on their own presentation in leading the discussion and the comments posted to peer presentations) using rubrics that will be provided in advance.

Students will be graded as follows:

Item	Weight
Exam I	20%
Exam II	20%
Assignments	25%
Weekly Discussions	15%
Article Review/Presentation	20%

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, quizzes, exams, and projects will be graded within 1 week of the due date, unless otherwise specified by the professor.

Grading Policies

• **COMPUTER ISSUES**

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 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.

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. 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 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.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar

COURSE SCHEDULE: 1ST 8-WEEK TERM

WEEK 1 – August 28 – September 1

- Syllabus and Course Overview
- Lectures and Chapters to Review:
 - Lecture 1 Biochemistry Basics (Chapter 2, p. 21-31)
 - Lecture 2_Proteins (Chapter 3, p 35-54)
- WEEKLY DISCUSSION 1

WEEK 2 - September 4 - 8

- Lectures and Chapters to Review:
 - Lecture 3 Nucleic Acids and Gene Expression (Chapter 4, p. 61-84)
 - Lecture 4 Carbohydrates and Lipids (Chapter 5, p. 89-100)
- WEEKLY DISCUSSION #2
- ASSIGNMENT #1 Due Tuesday, September 12 by 11:59pm

WEEK 3 – September 11 - 15

- Review for Exam 1
- EXAM 1 Biochemistry Basics, Proteins, Nucleic Acids & Gene Expression, and Carbohydrates and Lipids
 - Posted on Thursday, September 14
 - Deadline Sunday, September 17 by 11:59pm

WEEK 4 – September 18 - 22

- Lectures and Chapters to Review:
 - Lecture 5_Energy Systems and Carbohydrate Metabolism in Exercise (Chapter 9, p. 171-179 and Chapter 10, p. 193-232)
- WEEKLY DISCUSSION #3
- ASSIGNMENT #2 Due Friday, September29 by 11:59pm

WEEK 5 – September 25 - 29

- Lectures and Chapters to Review:
 - o Lecture 6 Lipid Metabolism in Exercise (Chapter 11, p. 239-275)
 - Lecture 7 Protein Metabolism in Exercise (Chapter 12, p. 281-297)
- WEEKLY DISCUSSION #4

WEEK 6 - October 2 - 6

- Lectures and Chapters to Review:
 - Lecture 8_Exercise on Gene Expression (Chapter 13, p. 305-323)
 - Lecture 9_ Metabolic Adaptations and Biochemical Assessments (Chapter 14, p. 327-368; Chapters 16-18, p. 407-438)
- WEEKLY DISCUSSION #5

WEEK 7 – October 9 - 13

- EXAM II Exercise Metabolism (CHO, Lipid and Protein), Gene Expression, Biochemical Assessments
 - Posted Wednesday, October 11
 - Deadline Friday, October 13 by 11:59pm
- No weekly discussion board

WEEK 8 - October 16 - 20

- PRESENTATION AND ARTICLE REVIEW
 - Due by Tuesday, October 17 at 11:59pm
 - Discussion boards will open Tuesday, October 17 and remain open through Saturday, October 21 at 11:59pm for participation
- No weekly discussion board

Important University Dates

- September 5, 2023 Deadline to drop 1st 8-week course with no record
- October 6, 2023 Deadline to drop a 1st 8-week course with a Quit (Q) or Withdraw (W)
- https://www.tamuct.edu/registrar/academic-calendar.html

TECHNOLOGY REQUIREMENTS AND SUPPORT Technology Requirements

This course will use the A&M-Central Texas Instructure Canvas learning management system. We strongly recommend the latest versions of Chrome, Firefox, Edge, or Safari browsers. Canvas will run on Windows, Mac, Linus, iOS, android, or any other device with a modern web browser. Canvas no longer supports any version of Internet Explorer.

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/] by clicking on the "TAMUCT Online Canvas" tile. You will then log in through our Microsoft portal.

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

Canvas Support

Use the Canvas Help tab, located at the bottom of the left-hand menu, for issues with Canvas. You can search the support articles or use the Email, Call, or Chat buttons at the bottom of the support pop-up to contact the Canvas Help Desk.

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

Online Proctored Testing

Texas A&M University-Central Texas uses Proctorio for online identity verification and proctored testing. This service is provided at no direct cost to students. If the course requires identity verification or proctored testing, the technology requirements are: Any computer meeting the minimum computing requirements, plus web camera, speaker, and microphone (or headset). Proctorio requires use of the Chrome web browser with their custom plug in installed.

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]

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

UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Warrior Center for Student Success

The Warrior Center for Student Success is a comprehensive academic support department at A&M-Central Texas, dedicated to fostering an environment of excellence and empowerment among its student body. The center offers a wide range of programs and services to ensure every student reaches their full potential, and is a haven for students seeking guidance, resources, and a strong support network to excel in their educational journey.

ADA Access and Accommodations: Texas A&M University-Central Texas ensures that students with disabilities have equal access to educational opportunities by providing appropriate accommodations and support services. If you believe you have a physical, learning or socioemotional disability requiring reasonable accommodations, please visit Access and Inclusion [https://www.tamuct.edu/student-affairs/access-inclusion.html] for more details or contact the Office of Access and Inclusion, WH-212; (254) 501-5836. Any information you provide is private and confidential.

Success Coaching and Peer Mentoring: Our experienced Success Coaches work one-on-one with students to develop personalized action plans, set academic goals, and build effective study strategies, time management skills, and resilience. Our Peer Mentors provide a valuable support system, offering guidance, encouragement, and a relatable perspective to help students navigate their academic and personal challenges. For more details call 254-501-5836 or 254-501-5928 or visit Academic Support [https://www.tamuct.edu/student-affairs/academic-support.html]. Click the link to schedule a session (virtual or in-person) with a success coach bit.ly/3q7uB50 or visit WH, 111.

Testing Services: We offer a secure and comfortable environment for students and members of the community to take courses and distance learning exams, as well as placement tests and professional certification exams. Our Testing Service also offers resources and support referrals for testing related challenges (test anxiety, learning disabilities, etc.) and supports all approved ADA accommodations. Call (254) 519-5830 or visit the Testing Center [https://www.tamuct.edu/testing-center/].

Tutoring and Supplemental Instruction Services: Our team of qualified Tutors and Supplemental Instructors assist students in various non-writing subjects, promoting academic comprehension and enhancing learning outcomes. Click the link to schedule a tutoring session with a TAMUCT tutor (virtual or in-person) or view tutor availability bit.ly/43Q6wNz. You may also chat live with a remote tutor 24/7 for a variety of subjects through our partnership with Tutor.com, an online tutoring platform that is free to all TAMUCT students. To learn more please visit Tutoring Services [https://www.tamuct.edu/student-affairs/academic-support.html#tutoring] or call (254) 501-5836 or visit the Tutoring Hub in Warrior Hall, 111.

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. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. All academic misconduct concerns will be referred to the Student Conduct Office. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

For more information regarding the <u>student conduct process</u>, [https://www.tamuct.edu/student-affairs/student-conduct.html]. If you know of potential honor violations by other students, you may <u>submit a referral</u>, [https://cm.maxient.com/reporting.php?TAMUCentralTexas].

Drop Policy

If you discover that you need to drop this class, you must complete the <u>Drop Request</u> Dynamic Form through Warrior Web.

[https://federation.ngwebsolutions.com/sp/startSSO.ping?PartnerIdpId=https://eis-prod.ec.tamuct.edu:443/samlsso&SpSessionAuthnAdapterId=tamuctDF&TargetResource=https %3a%2f%2fdynamicforms.ngwebsolutions.com%2fSubmit%2fStart%2f53b8369e-0502-4f36-be43-f02a4202f612].

Faculty cannot drop students; this is always the responsibility of the student. The Records and Admissions Office will provide a deadline on the Academic Calendar for which the form must be completed. Once you submit the completed form to the Records and Admissions 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 Records and Admissions 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.

Pregnant and/or Parenting Students Rights and Accommodations

Texas A&M University-Central Texas supports students who are pregnant, experiencing pregnancy-related conditions, and/or parenting. In accordance with requirements of <u>Title IX</u> and related guidance from <u>US Department of Education's Office of Civil Rights</u>, the Associate Dean in the Division of Student Affairs, (254) 501-5909, can assist students who are pregnant, experiencing pregnancy-related conditions, and/or parenting by provide flexible and individualized reasonable accommodations. Students should seek out assistance as early in the pregnancy as possible through the <u>Pregnancy & Parenting webpage</u>

[https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html]. For more information, please visit <u>Student Affairs</u> [https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html]. If you would like to read more about these <u>requirements and guidelines</u> online, please visit the website

[http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

<u>Title IX of the Education Amendments Act of 1972</u> specifically prohibits discrimination against a student based on pregnancy, childbirth, false pregnancy, termination of pregnancy, or recovery from any of these conditions

[https://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.html].

Students experiencing any form of discrimination due to any of these conditions are encouraged to reach out to the Title IX Coordinator, 254.519.5716, titleix@tamuct.edu, Founders Hall 317B, or the Associate Dean of Student Affairs, 254.501.5909, Warrior Hall 105.

Title IX Rights and Reporting Responsibilities

Texas A&M University-Central Texas is committed to creating a safe and open learning environment for all students. If you or another student has experienced any form of gender discrimination or sexual misconduct, including sexual harassment, sexual assault, dating/domestic violence, and/or sex-based stalking, help and support are available. Our university strongly encourages all members of our campus community to report incidents and seek support for gender discrimination and sexual misconduct through the Title IX Office. You

may contact the Title IX Office at 254.519.5716, titleix@tamuct.edu, Founders Hall 317B, or learn more by visiting the Title IX webpage [https://www.tamuct.edu/compliance/titleix.html]. Please be aware that that under Title IX, Texas Senate Bill 212, and System Regulation 08.01.01, [https://policies.tamus.edu/08-01-01.pdf] all university employees are mandated reporters and are required to disclose information about suspected or alleged violations as listed above and defined in System Regulation 08.01.01. If the Title IX Office receives information about an incident, they will reach out to offer information about resources, rights, and procedural options as a member of the campus community. Although I have an obligation to report, you will, in most cases, control how your case will be handled. When working with the Title IX Office you will have access to resources and accommodations but also have the opportunity to express if you wish to move forward with an investigation. Our goal is to make sure you are aware of the options available to you as a student. Community members are not required to respond to this outreach.

If you or another student wishes to speak to a confidential employee who does not have this reporting responsibility, you can contact the Student (https://www.tamuct.edu/student-affairs/student-counseling.html], 254.501.5955, or swacc@tamuct.edu, located in Warrior Hall Room 207L or the Student Support Advocate, 254.501.5978 or ssa@tamuct.edu, located in founder Hall Room 317D.

University Library & Archives

The University Library & Archives provides many services in support of research across campus and at a distance. We offer over 350 electronic databases containing approximately 1,203,947 eBooks and 134,750 journals, in addition to the 96,879 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 virtually through WebEx, Microsoft Teams or in-person at the library. Schedule an appointment here

[https://tamuct.libcal.com/appointments]. 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 workspaces, 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 <u>Library website</u> [https://tamuct.libguides.com/index]

University Writing Center

Located in Warrior Hall 416 and online, the University Writing Center (UWC) at Texas A&M University—Central Texas (A&M—Central Texas) is a free service open to all A&M—Central Texas students. The face-to-face hours of operation are from 10:00 a.m.-5:00 p.m. Monday and Thursday in Warrior Hall 416. Online tutoring is available Monday thru Thursday from 10:00 a.m.-5:00 p.m. and from 6:00-9:00 p.m. and on Saturdays from 12:00-3:00 p.m.

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 making an appointment via WCOnline [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, need any assistance with scheduling, or would like to schedule a recurring appointment with your favorite tutor.

OTHER 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 Wellness and 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/compliance/titleix.html].

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, please make a referral to the Behavioral Intervention Team. Referring your concern shows you care. You can complete the $\underline{\text{referral}}$ online

[https://cm.maxient.com/reporting.php?TAMUCentralTexas].

Anonymous referrals are accepted. Please see the <u>Behavioral Intervention Team</u> website for more information [https://www.tamuct.edu/bit]. If a person's behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5805.

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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