

EPHP 3304, Exercise Biochemistry

Spring 2021

Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION

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

Office: 322M Warrior Hall

Phone: 254-519-5428

Email: jkresta@tamuct.edu

Office Hours

By appointment or via email.

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.

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.

COVID-19 SAFETY MEASURES

To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, Texas A&M University-Central Texas has adopted policies and practices to minimize virus transmission. All members of the university community are expected to adhere to these measures to ensure their own safety and the safety of others. Students must observe the following practices while participating in face-to-face courses, course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.) and co-curricular programs:

- Self-monitoring—Students should follow CDC recommendations for self-monitoring. Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely and should not participate in face-to-face instruction. Students required to quarantine must participate in courses and course-related activities remotely and must not attend face-to-face course activities. Students should notify their instructors of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities.
- Face Coverings— Face coverings must be worn inside of buildings and within 50 feet of building entrances on the A&M-Central Texas Campus. This includes lobbies, restrooms, hallways, elevators, classrooms, laboratories, conference rooms, break rooms, non-private office spaces, and other shared spaces. Face coverings are also required in outdoor spaces where physical distancing is not maintained. The university will evaluate exceptions to this requirement on a case by case basis. Students can request an exception through the Office of Access and Inclusion in Student Affairs.
 - o If a student refuses to wear a face covering, the instructor should ask the student to leave and join the class remotely. If the student does not leave the class, the faculty member should report that student to the Office of Student Conduct. Additionally, the faculty member may choose to teach that day’s class remotely for all students.
- Physical Distancing—Physical distancing must be maintained between students, instructors, and others in the course and course-related activities.
- Classroom Ingress/Egress—Students must follow marked pathways for entering and exiting classrooms and other teaching spaces. Leave classrooms promptly after course activities have concluded. Do not congregate in hallways and maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.
- The university will notify students in the event that the COVID-19 situation necessitates changes to the course schedule or modality.

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:

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):

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

COURSE REQUIREMENTS

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. (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 **7 days in advance of the scheduled exam.**

For unanticipated events (illnesses, car accident, etc.), students should notify the course coordinator 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 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 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 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	20%
Exam II	20%
Assignments	25%
Weekly Discussions	15%
<u>Article Reviews/Presentations</u>	<u>20%</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: 2ND 8-WEEK TERM

WEEK 1 – March 22-26

- Lectures and Chapters to Review:
 - Lecture 1_Biochemistry Basics (Chapter 2, p. 21-31)
 - Lecture 2_Proteins (Chapter 3, p 35-54)
- **Weekly Discussion Board 1**

WEEK 2 – March 29 – April 2

- 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)
- **ASSIGNMENT 1 – Due Tuesday, April 6 by 11:59pm**
- **Weekly Discussion Board 2**

WEEK 3 – April 5-9

- Review for Exam 1
- **EXAM I – Biochemistry Basics, Proteins, Nucleic Acids & Gene Expression, and Carbohydrates & Lipids**
 - Posted Thursday, April 8 and Due by Sunday, April 11 at 11:59pm

WEEK 4 – April 12-16

- 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)
- **ASSIGNMENT 2 – Due Friday, April 23 by 11:59pm**
- **Weekly Discussion Board 3**

WEEK 5 – April 19-23

- Lectures and Chapters to Review:
 - Lecture 6_Lipid Metabolism in Exercise (Chapter 11, p. 239-275)
 - Lecture 7_Protein Metabolism in Exercise (Chapter 12, p. 281-297)
- **Weekly Discussion Board 4**

WEEK 6 –April 26-30

- 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 Board 5**

WEEK 7 – May 3-7

- **EXAM II – Exercise Metabolism (CHO, Lipid and Protein), Gene Expression, Biochemical Assessments**
 - Posted Wednesday, May 5 and due by 11:59pm on Friday, May 7
 - No weekly discussion board

WEEK 8 – May 10-14

- **PRESENTATION AND ARTICLE REVIEW**
 - Due by Tuesday, May 11 at 11:59pm
 - Discussion boards will open Tuesday, May 11 and remain open through Sunday, May 16 at 11:59pm for participation
- No weekly discussion board

Important University Dates

- March 29, 2021 – Deadline to Drop First 8-week classes with no record
- April 30, 2021– Deadline to Drop First 8-week classes 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 or Firefox browsers. 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/>]. 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.

Online Proctored Testing

A&M-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 also requires the Chrome web browser with their custom plug in.

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 the [Drop Request](#) Dynamic Form through Warrior Web.

[<https://dynamicforms.ngwebsolutions.com/casAuthentication.ashx?InstID=eaed95b9-f2be-45f3-a37d-46928168bc10&targetUrl=https%3A%2F%2Fdynamicforms.ngwebsolutions.com%2Fsubmit%2FForm%2Fstart%2F53b8369e-0502-4f36-be43-f02a4202f612>].

Faculty 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. Once you submit the completed 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, working with others in an unauthorized manner, 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 referred 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, on a remote online basis. Visit the Academic Support Community in Canvas to view schedules and contact information. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors will return at the Tutoring Center in Warrior Hall, Suite 111 in the Fall 2020. Student success coaching is available online upon request.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, success coaching, or have any other question, contact Academic Support Programs at (254) 501-5836, visit the Office of Student Success at 212F Warrior Hall, or by emailing studentsuccess@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 except writing support. Access Tutor.com through Canvas.

University Writing Center

The University Writing Center (UWC) at Texas A&M University–Central Texas (TAMUCT) is a free service open to all TAMUCT students. For the Fall 2020 semester, all services will be online as a result of the COVID-19 pandemic. The hours of operation are from 10:00 a.m.–5:00 p.m. Monday thru Thursday with satellite hours online Monday thru Thursday from 6:00–9:00 p.m. The UWC is also offering 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. 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. While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. 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 [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].

For Spring 2021, all reference service will be conducted virtually. Please go to our [Library website](http://tamuct.libguides.com/index) [http://tamuct.libguides.com/index] to access our virtual reference help and our current hours.

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/compliance/titleix.html) [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 [referral](https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2) online [https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2].

Anonymous referrals are accepted. Please see the [Behavioral Intervention Team](https://www.tamuct.edu/student-affairs/bat.html) 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.

OTHER POLICIES

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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