MTHK 3332-110, 10210 LINEAR ALGEBRA
Spring 2020 rev. 01.07.2020
Texas A&M University - Central Texas

COURSE DATES, MODALITY, AND LOCATION
16-week class, 01/13/20 – 5/8/20
This course is designated as “Web-enhanced”. Weekly classes are Tuesdays and Thursdays 11:30-12:45 pm, 309 Founder’s Hall. Classes will focus on problem-solving. Students are expected to already be familiar with the material BEFORE class either by reading the textbook, watching the course videos, and/or attended the online session (see below)

INSTRUCTOR AND CONTACT INFORMATION
Primary Instructor: Sam Jackson
Email: Please use the Canvas email for course issues.
Office hours: CTC, building 152 room 237:
Monday (7:30am–9:00am, 10:30am–12:00pm, 1:00pm–1:30pm)
Tuesday (7:30am–9:00am, 10:30am–11:30am)
Wednesday (7:30am–9:00am, 10:30am–12:00pm, 1:00pm–1:30pm)
Thursday (7:30am–9:00am, 10:30am–11:30am)
Secondary instructor: Chris Thron
Email: Please use the Canvas email for course issues.
Contact: hangouts.google.com (ID is chris.thron@gmail.com). You will need a Google account to log in to Hangouts. If you don't have gmail, you can still get a Google account: see instructions at https://www.wikihow.com/Make-a-Google-Account-Without-Gmail

COURSE INFORMATION
Course Overview and description: This course covers the material of a standard course in undergraduate linear algebra. Topics will include: vector spaces, linear mappings, subspaces, linear dependence and dimension, linear isomorphisms, matrices, change of basis, determinant of a linear transformation and a matrix, matrix factorization, computation of eigenvectors, eigenvalues, and inverses of matrices.

Student Learning Outcomes:
Upon successful completion of MATH 3332, students will be able to:
a) State and contextualize fundamental mathematical definitions
b) Recognize and compare properties of mathematical structures
c) Recognize and interpret hypotheses and conclusions of theorems.
d) Evaluate the truth of mathematical statements based on definitions and theorems.
e) Perform standard computations related to the material, and interpret the results of those computations.
f) Compose and critique mathematical proofs using sound logical argument and appropriate notation.
g) Demonstrate the use of the theoretical results and computational aspects on required applications; and
h) Connect the material to concepts in other courses.

**Competency Goals Statements (certification or standards):**
The student will gain competency in the following Mathematics 7-12 TEKS skills:

1. Competency 001. E. Uses a variety of models (e.g., geometric, symbolic) to represent operations, algorithms and real numbers.
2. Competency 001. F. Uses real numbers to model and solve a variety of problems
3. Competency 011. D. Applies the Pythagorean theorem, proportional reasoning and right triangle trigonometry to solve measurement problems.
4. Competency 003. C. Compares and contrasts properties of vectors and matrices with properties of number systems (e.g., existence of inverses, non-commutative operations).
5. Competency 003. C. Applies techniques of linear and matrix algebra to represent and solve problems involving linear systems.
6. Competency 012. B. Uses properties of points, lines, planes, angles, lengths and distances to solve problems.
7. Competency 012. C. Applies the properties of parallel and perpendicular lines to solve problems.
8. Competency 014. B. Uses the properties of transformations and their compositions to solve problems.
9. Competency 014 C. Uses transformations to explore and describe reflectional, rotational and translational symmetry.
10. Competency 014 D. Applies transformations in the coordinate plane.
11. Competency 014 E. Applies concepts and properties of slope, midpoint, parallelism, perpendicularity and distance to explore properties of geometric figures and solve problems in the coordinate plane.

**Required Reading and Textbook(s):**
All materials are online. Links are given in the Canvas site.

**COURSE REQUIREMENTS**
- Quizzes (50%). There is a 15 minutes quiz every Tuesday.
- Tests (50%). There are 2 tests of weight 25% and will be administered during class time.

**Grading Criteria Rubric and Conversion**

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Grade Range</th>
<th>Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>50% (200 points)</td>
<td>90- 100% = A</td>
<td>80- 89% = B</td>
</tr>
<tr>
<td>Test 1</td>
<td>25% (100 points)</td>
<td>70- 79% = C</td>
<td></td>
</tr>
<tr>
<td>Test 2</td>
<td>25% (100 points)</td>
<td>60- 69% = D</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>100% (400 points)</td>
<td>Below 60 % F</td>
<td></td>
</tr>
</tbody>
</table>

Partial credit for homework, quiz and test questions will be awarded according to the following guidelines:

100% Perfect
90% Minor careless or technical mistakes
80% Minor procedural error
70% Major conceptual or procedural error.
60% Makes beginning steps towards a solution
30% Some relevant information supplied.

Please note: If your overall grade (on a scale from 0 to 100) is within 1 point of the next highest grade level, I will increase your grade if you have done all of the quizzes. Otherwise you will be graded strictly according to the numbers. That means that if your average is 89.99 and you didn’t do all the quizzes, then you still get a B.

Posting of Grades
Combined grades will be posted on TAMUCT Canvas after each quiz and test.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar
***NOTE: Although the following should be fairly close to the actual schedule, some adjustments may be made to the schedule to accommodate the students’ learning speed.

<table>
<thead>
<tr>
<th>Week # (Mon.)</th>
<th>New Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 (1/13)</td>
<td>Chapter 1, What is Linear Algebra?</td>
</tr>
<tr>
<td>#2 (1/20)</td>
<td>Chapter 2, Systems of Linear Equations</td>
</tr>
<tr>
<td>#3 (1/27)</td>
<td>Chapter 2, ctd.</td>
</tr>
<tr>
<td>#4 (2/3)</td>
<td>Chapter 4, Vectors in Space</td>
</tr>
<tr>
<td>#5 (2/10)</td>
<td>Chapter 5, Vector Spaces</td>
</tr>
<tr>
<td>#6 (2/17)</td>
<td>Chapter 6, Linear Transformations.</td>
</tr>
<tr>
<td>#7 (2/24)</td>
<td>Chapter 7, Matrices</td>
</tr>
<tr>
<td>#8 (3/2)</td>
<td>TEST #1</td>
</tr>
<tr>
<td>(3/9)</td>
<td>SPRING BREAK</td>
</tr>
<tr>
<td>#9 (3/16)</td>
<td>Chapter 7 ctd.</td>
</tr>
<tr>
<td>#10 (3/23)</td>
<td>Chapter 8, Determinants</td>
</tr>
<tr>
<td>#11 (3/30)</td>
<td>Chapter 9, Subspaces and spanning sets</td>
</tr>
<tr>
<td>#12 (4/6)</td>
<td>Chapter 10, Linear independence and Chapter 11, Basis and dimension</td>
</tr>
<tr>
<td>#13 (4/13)</td>
<td>Chapter 12, Eigenvalues and eigenvectors</td>
</tr>
<tr>
<td>#14 (4/20)</td>
<td>Chapter 13, Diagonalization.</td>
</tr>
<tr>
<td>#15 (4/27)</td>
<td>TBD</td>
</tr>
<tr>
<td>#16 (5/4)</td>
<td>TEST #2</td>
</tr>
</tbody>
</table>

Important University Dates
See: [https://www.tamuct.edu/registrar/academic-calendar.html](https://www.tamuct.edu/registrar/academic-calendar.html)

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.

**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**

**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).

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, 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].
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].

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 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]. Students may also contact the institution’s Title IX Coordinator. If you would like to read more about these requirements and guidelines 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) 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. 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 WCONline [https://tamuct.mywconline.com/].
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].

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 concerning behaviors, or individuals causing a significant disruption to our community, please make a referral to the Behavioral Intervention Team. Referring your concern shows you care. 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.

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.