



MATH 2318.001, Linear Algebra

COURSE SYLLABUS: Spring 2019

INSTRUCTOR INFORMATION

Instructor: Padmapani Seneviratne
Office Location: BIN 316
Office Hours: M 3:00 – 5:00 pm, TR 12:30 – 02:00 pm or by appointment
Office Phone: 903- 886-5952
Office Fax: 903-886-5945
University Email Address: Padmapani.seneviratne@tamuc.edu
Preferred Form of Communication: **email**
Communication Response Time: within 24 hours during weekdays

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required:
Linear Algebra and its applications, David C. Lay, Fourth edition.
Chapters 1- 6 will be covered.

Software Required: Sagemath(free) online version will be used.
Optional Texts and/or Materials: Students may use TI-83/84 or an equivalent calculator.

Course Description

This course studies vector spaces; linear transformations; matrices; determinants; systems of linear equations; equivalence relations on matrices; characteristic vectors; operators. Prerequisite: MATH 2305, Discrete Mathematics, Minimum of C grade.

Student Learning Outcomes: Upon successful completion of this course a student will:

The syllabus/schedule are subject to change.

1. Find solutions of systems of linear equations by using Gauss-Jordan elimination method.
2. Identify and compute algebraic properties of matrices and determinants.
3. Demonstrate a thorough knowledge of vector spaces and subspaces.
4. Find basis and rank for column, row and null spaces of a given matrix.
5. Compute eigenvalues, eigenvectors and eigenspace of a square matrix and matrix diagonalization.
6. Define linear transformations and examine the properties of linear transformations.
7. Identify inner product spaces and use Gram-Schmidt orthogonalization process to orthogonalize any given basis.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Use of TI-83/84 type calculator, Access MyLeo online.

Instructional Methods

Instruction is done by traditional lecture. Sagemath computer algebra system will be used to illustrate examples.

Student Responsibilities or Tips for Success in the Course

Attend all classes, Do all Homework and quizzes. Use office hours and Math Help Center.

GRADING

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

3 Midterm Exams:	60%
In-class Quizzes:	15%
Final Exam:	25%

Total:	100%

A = 90%-100%

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = 59% or Below

Exams: There will be three midterm exams and a comprehensive final exam for this course.

The syllabus/schedule are subject to change.

Exam 1: Tuesday February 12th 2019 (5th week)

Exam 2: Thursday, March 14th 2019 (9th week)

Exam 3: Tuesday, April 23rd 2019 (14th week)

Final Exam: Tuesday, May 7th, 10:30 – 12:30

Home work/Quizzes: You are encouraged to try all the homework problems. There will be announced quizzes from the assigned homework problems weekly.

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary

The syllabus/schedule are subject to change.

use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

You are expected to attend all classes.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:

<https://www.britannica.com/topic/netiquette>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx) webpage and [Procedure 13.99.99.R0.01](http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

The syllabus/schedule are subject to change.

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

The syllabus/schedule are subject to change.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE / CALENDAR

Weekly Schedule

Week	Topics
1-3	Chapter 1
4-6	Chapter 2
7-9	Chapter 3
10-12	Chapter 4
13-15	Chapter 5-6

Suggested Problems

- 1.1 : 1, 7, 11, 13, 15, 19, 21, 23
- 1.2 : 1, 3, 7, 13, 15, 17, 21
- 1.3 : 1, 5, 9, 11, 12, 13, 14, 15, 16, 25
- 1.4 : 1, 5, 7, 11, 13, 15, 17, 21, 25
- 1.5 : 1, 5, 9, 11, 17
- 1.7 : 1, 3, 5, 9, 11, 21, 33
- 1.8 : 1, 3, 5, 7, 9, 11, 13, 15, 17, 19
- 1.9 : 1, 3, 5, 11, 15, 17, 21, 22
- 2.1: 1, 2, 3, 4, 9, 11, 17, 27
- 2.2: 1, 3, 5, 7, 29-32, 35

The syllabus/schedule are subject to change.

2.3: 3, 5, 7, 11

2.4: 1, 3, 5, 13, 21

2.8: 7, 9, 11, 15, 17, 19, 23

2.9: 1, 3, 5, 9, 15, 29

3.1: 1, 3, 5, 9, 11, 13, 25, 37

3.2: 5, 7, 9, 15-20, 21, 23, 25, 31, 40

4.1: 1, 3, 5-11, 13, 21

4.2: 1, 3, 5, 7, 9, 11, 13, 23

4.3: 1-8, 9, 13, 15, 19

4.4: 1-4, 5-10, 13

4.5: 1-8, 13, 15

4.6: 1-4, 5, 7, 9, 11, 13

5.1: 1-8, 9, 11, 13, 15, 17, 21

5.2: 9, 11, 13

5.3: 3, 5, 7, 11, 13, 15, 17

6.1: 1-8, 14, 17, 23, 25

6.2: 1, 3, 7, 9, 11, 17

6.3: 3- 6, 7, 11

6.4: 1-7, 9, 13