MTH 531-Introduction to Theory of Matrices
Course Syllabus: Fall-2016

INSTRUCTOR INFORMATION

Instructor: Padmapani Seneviratne, Ph.D.   **Office:** BIN 316
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Office Hours: TR 3:00 – 5:00 pm, W 1:15 – 2:15 or by appointment

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COURSE INFORMATION

Class Schedule: TR: 05:00 – 06:15 pm

Location: BA 224, MPLX 121

Textbook: Class Notes

Additional Reading: Linear Algebra, 4th Edition**,** Friedberg, Insel & Spence, fourth edition, Prectice Hall, ISBN 0-13-008451-4

Technology:

- SageMath software will be used. Calculator is available at http://sagecell.sagemath.org

Course Description (Catalogue):

Introduction to Theory of Matrices. Three semester hours. Vector spaces, linear equations, matrices, linear transformations, equivalence relations, metric concepts. Prerequisite: MATH 334 or 335.

Student Learning Outcomes:

Upon successful completion of this course a students will:

- Analyze properties of vector spaces and subspaces.

- Understand concepts in vector spaces such as linear combinations, independence, and bases.

- Demonstrate an understanding of linear transformations, invertible transformations, change of basis, composition of linear transformations.

- Calculate inverses, rank and nullity, eigenvalues and diagonlization of a given matrix.

- Understand concepts such as inner product spaces, Gram-Schmidt orthogonalization.

- Analyze singular value decomposition and Jordan canonical form.

- Use a computer algebra system to understand concepts in linear algebra concepts.

COURSE REQUIREMENTS

Instructional: Lecture, software

Attendance:
It is expected that you attend classes daily.

Exams: There will be 2 mid-term exams and a comprehensive final exam for this class.

Midterm 1 : Week 5
Midterm 2 : Week 10
Final Exam: Final Exam Week.

Make-up Policy:
No make-up exams will be given. If you miss a test, the final will be used to replace that score.

COURSE GRADES

Grading policy: The course grade consists of

Home Work:	20%
Test 1:	25%
Test 2:	25%

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                  Final  Exam:              30%
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                  Total:                    100%
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Grading Scale:

A: 90 – 100%, B: 80 – 89%, C: 70 – 79%, D:60 – 69%, F: 0 – 59%

<div style="border:1px solid black; text-align:center; color:#2E5496; font-weight:bold">COURSE AND UNIVERSITY PROCEDURES/POLICIES</div>

Withdrawal Policy:
Concerning the deadlines and consequences of withdrawals please check on:
https://ems.tamuc.edu/MasterCalendar/MasterCalendar.aspx

Academic Integrity:
Texas A&M University –Commerce has explicit rules and regulations governing academic dishonesty and academic misconduct. These policies are stated in details in the student's Guide Handbook. Each students is expected to read this document and abide by the contained polices. These university polices will be followed in class. The minimum penalty an act of academic dishonesty will be a grade of 0 on the examination or homework assignments.

University Specific Procedures

Students with Disabilities
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 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamuc.edu

Nondiscrimination Statement

A&M-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.

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct from Student Guide Handbook).*

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.

Weekly Schedule

Week 1   – Systems of linear equations
Week 2-4   - Vector Spaces
Week 5-7   - Linear transformations
Week 8-9   - Determinants
Week 10 – 11 – Diagonalization
Week 12 – 14 – Inner product spaces
Week 15 -   Canonical forms