# Math 3377, Section 01 (CRN 21254): Introduction to Linear Algebra And Matrices
## Spring 2018 Syllabus

## 1   Course Information

- Location and Time: TuTh 12:30pm–1:50pm, 400 Lee Drain Building

- Professor: Dr. Martin Malandro

- Department: Mathematics and Statistics

- Office: 433 Lee Drain Building

- E-mail (preferred method of contact): malandro@shsu.edu

- Phone number: (936) 294-1580

- Office Hours: MW 12:30pm–1:50pm, and by appointment

- Required Materials:

  - Textbook: *A First Course in Linear Algebra (A Free Textbook)* by Robert A. Beezer, available at `http://linear.ups.edu/` (If you Google *Beezer linear algebra* it should be the first link.)
  - Calculator: A calculator capable of doing matrix operations; TI-83 or better is recommended.

**Course Description**: Topics include: solving systems of linear equations, fundamental matrix theory (invertibility theorems, determinants), eigenvectors, and properties of linear transformations. Remaining topics are chosen from: Properties of general vector spaces, inner product spaces, and/or diagonalization of symmetric matrices. Prerequisite: Grade of C or better in Calculus II. Credit 3.

**Course Objectives/Learning Outcomes**: A successful student will attain mastery of the following topics. Other topics will also be covered.

- Solving systems of linear equations with matrices

- Invertible matrices

- The equivalence between matrices and linear transformations

- Vectors: linear independence and span

- Determinants: calculation and applications

- Change of basis

- Eigenvalues and eigenvectors

- Inner products and applications

## 2   Grading Policy

Your grade in the course will be based on the weights in the following table:

| | |
|---|---|
| Homework | 20% |
| Exam 1 | 25% |
| Exam 2 | 25% |
| Final exam | 30% |

Grading Scale:

| A | 90% or more points earned |
|---|---|
| B | 80-89% of points earned |
| C | 70-79% of points earned |
| D | 60-69% of points earned |
| F | Fewer than 60% of points earned |

**Homework**: I will assign homework on a regular basis. I expect you to take pride in the quality and the presentation of your work. Please neatly write or type your solutions on one side of the page. I encourage you to use a separate page for each problem because it makes things neater, but if the problems are short then you may combine them onto one page as long as everything is in order. Staple your assignments together in order.

If your homework is messy or you otherwise fail to follow directions, it may not be graded.

**Homework make-up policy:** Late homework will not be accepted. You can always turn in your homework early—just bring it to my office and slide it under my office door if I'm not there. I recognize that emergencies sometimes arise during the semester, so in calculating your homework average I will drop your (1) lowest homework score.

**Exams**: Many exam problems will be similar to homework problems or examples worked in class. The final exam will be cumulative.

If you arrive late to an exam, you may still take the exam in the remaining time as long as nobody has finished the exam yet.

**Exam make-up policy:** If you miss an exam, you will be expected to show appropriate cause in writing. If you must miss an exam, I expect you to contact me beforehand. If that is impossible, then you must contact me no later than 24 hours after the exam. If you miss an exam and have not contacted me by this time, you forfeit your right to a make-up.

**Academic Honesty Policy**:

- Homework: You may work together when solving homework problems and you may consult whatever sources you deem necessary while doing so, but no *copying* is allowed. Your write-ups must be done by yourself, in your own words, and without outside assistance. Copying the work of another is considered cheating. If you are working in a group that solves a problem, you may not copy the group answer. Instead, you must write up the answer alone, in your own words.

- Exams: Exams are individual endeavors, where no help is to be given or received. Cheating on an exam includes, but is not limited to, sharing answers or using any form of cheat sheet (note: notes programmed into a calculator count as a cheat sheet).

Cheating is punishable with a grade of F in the class. If you cheat you may also be referred to the dean on academic dishonesty charges.

**Grade Dispute Policy**: All grade issues need to be brought to my attention within one week of having your grade returned/posted.

**Final Exam Schedule**: Tuesday May 8, 1pm–3pm

# 3  Classroom Policies

**Attendance Policy**: I expect you to attend every class. If you miss a class, then I expect you to get notes from a classmate. I expect you to arrive to class on time.

**Classroom Rules of Conduct**: Students must refrain from behavior in class that disrupts the learning process. Students are prohibited from using tobacco products in class, making offensive remarks, reading

newspapers, sleeping, talking at inappropriate times or about inappropriate things, wearing inappropriate clothing, using cellphones, or engaging in any other form of distraction. Computers may not be used in a distracting way. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

Math-related questions and math-related discussion in the classroom are encouraged. However, chatter is disruptive to the learning process and will not be tolerated under any circumstances. Furthermore, any variation of the question "do we need to know this for the test?" is banned.

**Disablities policy**: Any student with a disability that affects his/her academic performance should contact the Office of Services for Students with Disabilities in the SHSU Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786) to request accommodations.

**Use of Telephones and Text Messengers in Class**: Be respectful of those around you and don't use these during class, except in the case of emergency. All messengers must be put away for exams.

# 4   Tentative Schedule

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|---|---|
| Linear systems, linear transformations, matrices, determinants | Jan 17–Feb 26 |
| Exam 1 | Tue, Feb 27 |
| Determinants, vector spaces, change of basis, eigenvectors and eigenvalues | Feb 28–Apr 9 |
| Exam 2 | Tue, April 10 |
| Diagonalization, inner products, Gram-Schmidt, further topics | April 11–May 3 |
| Final Exam | Tuesday May 8, 1pm–3pm |

The date/time of the final exam is set by official SHSU policy. All other dates in this list are tentative and subject to change.

# 5   Additional Information

All information on this syllabus is subject to change. All changes will be announced in class. Further university policies regarding academic dishonesty, student absences on religious holy days, disabilities, and visitors in the classroom which apply to this course may be found at http://www.shsu.edu/syllabus/. If there is a conflict between information on this syllabus and official university policy, university policy takes precedence.