I. Course: MATH 335, Linear Algebra, 3 credit hours

II. Course Description: This course covers matrices, determinants, systems of linear equations, vector spaces, real inner product spaces, linear transformations, eigenvalues, eigenvectors, diagonability, quadratic forms and symmetric matrices, equivalence relations on matrices. Prerequisite Math 331.

III. Text: Linear Algebra with Applications, by Steven Leon, 8th edition. We study Chapters 1--6.

IV. Technology: Use of a graphing calculator having at least the capabilities of the TI-83 will be helpful throughout the course. TI-89 is highly recommended. A computer algebra system will be used for some problem exploration, enhanced conceptual understanding, and to engage students as active participants in the learning process.

V. Student Learning Outcomes: Upon successful completion of this course, students will be able to:

1. Solve systems of linear equations using multiple methods, including Gaussian elimination, Cramer’s rule and matrix inversion.
2. Carry out matrix operations, including inverses and determinants.
3. Demonstrate understanding of the concepts of vector space and subspace.
4. Demonstrate understanding of linear independence, span, and basis.
5. Determine eigenvalues and eigenvectors and solve problems involving eigenvalues and diagonalization.
6. Apply principles of matrix algebra to linear transformations.
7. Demonstrate application of inner products and associated norms.
8. Verify orthogonality and find orthonormal bases.

VI. Methods of Evaluation: (To be determined by instructor)

Evaluation methods can include grading homework, tests and final exam.

Attendance: It is essential. We will check attendance. If you have six or more unexcused absences, you automatically fail this class. If you miss a class, you are responsible for learning the materials by yourself and all announcements and materials presented in the class. My office hours cannot be used to teach you for your absence.
Homework: There is a daily assignment. Although they are not collected and graded, answer keys will be provided for your study.

Quizzes: There are 11 10-minute quizzes. Each Quiz given on Wednesday (9am) is worth 8 points. 80 points are used for the course grade, and 8 are extra credit. A make-up quiz needs to be completed in the same week, and will be subject to two-point deduction.

Tests: There will be two exams plus a final. Each exam is worth 80 points, and the final 120 points. A make-up test can only be given under a very special circumstance and if I am notified before the exam. The make-up exam may be more difficult than the classroom exam and must be made up within one week. The final cannot be made up. To request a make-up exam, please send me an email.

Grades: Your course grade will be based on the following scale:

- Quizzes: 80 points
- Two Exams: 160 points
- Final: 120 points
- Total: 360 points

A = 90%  B = 80%  C = 70%  D = 60%

VII. Other Information

- The information for students with disability: 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, email: StudentDisabilityServices@tamuc.edu

- Basic Tenets of Common Decency: “All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment.” (Student’s Guide Handbook, Policies and Procedures, Conduct.) This means that rude and/or disruptive behavior will not be tolerated.

- Free tutoring service is provided by the Math Skill Center (Binnion Hall Room 328) with the following hours: M and W, 8am–8pm; T and R, 8am–6pm; and F 8am–3pm.
HOMEWORK ASSIGNMENTS

Here are your homework assignments for this course:

Chapter 1
Section 1.1, Pages 10-11: 1c, 3, 5c, 6c, 7, 8, 10
Section 1.2, Pages 23-26: 1(a, c, e, g), 2(c, e), 3(a, c), 4(c, e), 5(a, c, e), 6a, 7, 10, 15
Section 1.3, Pages 42-44: 1(d, e, g), 2, 4, 6c, 8c, 9, 10, 13, 14, 15
Section 1.4, Pages 56-58: 4, 6, 7, 10(c, f), 11d, 13a, 14, 16, 28
Section 1.5, Pages 66-68: 1, 3b, 4a, 5, 8, 10(c, e, g), 11, 12a, 22
Section 1.6, Pages 75-77: 1, 4, 6, 7, 9, 11, 13, 14

Chapter 2
Section 2.1, Pages 90-91: 2, 3(a, c, e, g, h), 4, 6, 9, 10, 11, 12a
Section 2.2, Pages 97-98: 1, 3(a, c, e), 4, 5, 7, 13, 14
Section 2.3, Pages 105-106: 1(a, c), 2(a, c), 5, 14, 11

Chapter 3
Section 3.1, Pages 116-117: 1, 3, 4, 5, 6, 8, 10, 12
Section 3.2, Pages 125-127: 1(a, d), 2(a, c), 3(a, c), 4(b, c), 5a, 6(a, b), 9(a, c), 10(a, c), 11, 12, 13, 14, 16
Section 3.3, Pages 135-136: 1(a, b, c), 2, 4, 5, 6, 9, 10, 11, 12, 13, 15, 17
Section 3.4, Pages 141-143: 1, 2, 3, 5, 8, 9, 10, 14, 15
Section 3.5, Pages 153: 1, 2, 3, 4, 7, 9
Section 3.6, Pages 159-161: 1, 2, 3, 4(a, d, e), 6, 7, 8, 9, 11a, 19

Chapter 4
Section 4.1, Pages 174-175: 1, 2, 3, 4, 5(a, c), 6(b, c), 7d, 8, 9, 10, 12, 16, 17a, 18, 19
Section 4.2, Pages 187-189: 2(a), 3(a, c), 4c, 6, 7, 10, 13, 14, 16, 18c
Section 4.3, Pages 192-194: 1, 2, 4, 5, 7, 9, 11, 15

Chapter 5
Section 5.1, Pages 212-213: 1(a, b), 3(c, d), 6, 7, 8, 11, 12
Section 5.2, Pages 221-222: 1(a, c), 2, 4, 5, 6, 8, 9, 15, 16
Section 5.4, Pages 239-241: 2, 3, 4, 5, 7, 8, 9, 13, 17, 24
Section 5.5, Pages 257-259: 1(b, d), 2, 3, 4, 5, 6, 7
Section 5.6, Pages 268-269: 1, 3, 4, 5a, 7, 8

Chapter 6
Section 6.1, Pages 294-296: 1(c, e), 2, 3, 6, 9, 10, 13, 19
Section 6.3, Pages 322-324: 1(a, c, e), 2(a, c, e), 3(a, c, e), 4, 5, 6, 12, 18
Section 6.4, Pages 334-336: 1, 3, 4(a, d, f), 5(c, g), 6, 7, 10
Section 6.5, Pages 350-351: 2, 3, 5, 6
Section 6.6, Pages 364: 1, 3, 8, 9, 10
Section 6.7, Pages 371-372: 1(a, b, c), 3, 9, 11, 12
## CLASS SCHEDULE, SPRING 2013
### MATH 335
### MWF: 9:00am-9:50am, Room Binnion

<table>
<thead>
<tr>
<th>Week of</th>
<th>Monday</th>
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<td>Jan. 21</td>
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* This schedule is for our reference. The actual coverage of each day may be different.

**WELCOME TO THIS CLASS**