

# Math 342, Elementary Linear Algebra

- **INSTRUCTOR:** Professor **Arkady Berenstein**, Fenton 330, PHONE: 346-5624, E-MAIL: [arkadiy@math.uoregon.edu](mailto:arkadiy@math.uoregon.edu)
- **TEXT:** *Linear Algebra and Its Applications*, by David C. Lay, Third Edition.
- **PREREQUISITES:** The prerequisite for this course is Math 341.
- **COURSE CONTENT:** In Math 341-342 we study the following topics: vector and matrix algebra;  $n$ -dimensional vector spaces; systems of linear equations; linear independence and dimension; linear transformations; rank and nullity; determinants; eigenvalues; inner product spaces; theory of a single linear transformation. We also cover many applications of these topics.
- **ATTENDANCE:** Please remember that if you miss a class it is your responsibility to find out what happened in that class.
- **COURSE WEB PAGE:** The homework and other class material is also available at the web page <http://math.uoregon.edu/~arkadiy/342new.html>
- **GRADING:** Total 100%. Will be based on:
  - **HOMEWORK** (20%): Homework will be collected on Wednesdays. **Late homework will not be accepted.** I will choose a subset of the assigned problems to be graded. The lowest homework score will be dropped. You may collaborate with other class members on your homework, although you must each write up your solutions independently and in your own words. To avoid falling behind, you should do the reading and homework as the material is presented in class, rather than leaving it all until the last minute.
  - **QUIZZES** (15%) There will be short quizzes on Fridays. They will be based on the material covered in the previously assigned homework.
  - **MIDTERM** (30%), **FINAL** (35%).
- **REMARK:** I expect you to be able to carry out matrix calculations by hand so as to gain a solid understanding of what these calculations entail. You may use graphing calculators, Matlab, Mathematica, etc. on your homework problems. You will not be allowed to use them on your quizzes or exams. You may have one card 3x5 inches with any formulas you wish during quizzes, the midterm, and the final exam.

## Tentative Schedule

|         |                                |
|---------|--------------------------------|
| Week 1  | sections 5.1, 5.2, 5.3         |
| Week 2  | sections 5.4, 5.5, 5.6, Quiz 1 |
| Week 3  | sections 5.6, 5.7, 6.1         |
| Week 4  | sections 6.1, 6.2, 6.3, Quiz 2 |
| Week 5  | section 6.3, 6.4, 6.5          |
| Week 6  | section 6.6, Review, Midterm 2 |
| Week 7  | sections 6.7, 6.8, Quiz 3      |
| Week 8  | sections 7.1, 7.2              |
| Week 9  | section 7.2, 7.3, Quiz 4       |
| Week 10 | section 7.3, 7.4, Final Review |