MA232 Linear Algebra

Instructor: Nikolay S. Strigul

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 Lectures:

Monday 02:00-02:50 am, Babbio Center 110
Thursday 02:00-02:50 am, Babbio Center 221
Friday 02:00-02:50 am, Babbio Center 210

Homework assignments and quizzes: There will be weekly homework assignments and quizzes.
Exams: There will be Midterm and Final Exams.

Grading:

- Quizzes: 20 %
- Homework assignments: 20 %
- Midterm: 25 %
- Final: 35 %

Textbook: Elementary Linear Algebra with Applications by Howard Anton and Chris Rorres, ISBN: 9780471669593

General comments:

MA232 is an introductory course in linear algebra. The course will be taught at the elementary level. We will cover the major concepts important for applications such as vectors, systems of linear equations, linear maps, matrices, determinants, eigenvalues and eigenvectors. The course will focus on natural links between these concepts. Additional emphasis will be placed on applications of linear algebra to practical problems in science and engineering.

Course program:

Week 1. **- Vectors in 2-Space and 3-Space.**
Week 2. **- Determinants.**
Week 3. **- Systems of Linear Equations and Matrices.**
Week 4. **- Linear Transformations.**
Week 5. **- Eigenvalues, Eigenvectors.**
Week 6. **- Euclidean Vector Spaces.**
Week 7. **- General Vector Spaces.**
Week 8. **- Inner Product Spaces.**
Week 9. **- Quadratic forms.**
Week 10. **- Complex vector spaces.**
Week 11. **- Applications 1. The method of least squares.**
Week 12. **- Applications 2. Networks and graphs.**
Week 13. **- Applications 3. Markov chains.**
Week 14. **- Applications 4. Matrix population models.**