

Department of Mathematics and Statistics
MAT 870 Fall 2004
Seminar in Secondary Mathematics: Linear Algebra
(3 Credit Hours)

Instructors:

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Prerequisite: Approval of Instructor

Primary Text: *Introduction to Linear Algebra* by Gilbert Strang (Third Edition)

Secondary Texts: *Linear Algebra* by Serge Lang

Linear Algebra by Kenneth Hoffman & Ray Kunze

ATLAST Computer Exercises for Linear Algebra by Leon, et al

Topic:

Introduction to Vectors

Solving Linear Equations

Vector Spaces and Subspaces

Orthogonality

Determinants

Eigenvalues and Eigenvectors

Linear Transformations

Applications

Objectives:

1. To introduce students to various methods for solving linear systems of equations.
2. To acquaint students with the "algebra" of matrices.
3. To expose students to "abstract" mathematics through the study of linear spaces (including, but not limited to, \mathbf{R}^2 , \mathbf{R}^3 , and \mathbf{R}^n).
4. To introduce students to linear transformations and their properties.
5. To enable students to use linear algebra to formulate and solve problems and to communicate solutions.
6. To encourage students to work and learn cooperatively.
7. To expose students to technologies that pertain to linear algebra.
8. To encourage students to express their understanding in writing with proper usage of English and mathematical terminology.

Grading:

Homework, technology projects, quizzes and such:	25%
Midterm Exam:	35%
Final Exam:	40%

A: 90-100% B: 80-89% C: 70-79% D: 60-69%

(Grades may be curved but not to achieve any predetermined distribution.)

Course Format: We meet synchronously one evening per week using the Centra meeting software. During a typical meeting Drs. Metcalf and/or Jones will lecture/discuss new material as well as respond to student queries on old material, homework, technology projects and such.

Attendance Policy:

Students are expected to attend meeting and participate in every meeting although neither attendance nor class participation will explicitly be part of the computed course grade.

Preparation Time:

Students should expect to spend at least four hours on homework for every hour in lecture.

Policy on Academic Honesty and Responsibility:

Anyone violating the usual standards for academic honesty, for example, anyone attempting to obtain or exchange information regarding any quiz or test, or anyone using a fraudulent excuse to qualify for a "make-up", may receive a course grade of 'F'.

Services for Students with Disabilities

If you are registered with the Office of Services for Individuals with Disabilities, please make an appointment with the course instructor to discuss any academic accommodations you need. If you need academic accommodations and are not registered with the Office of Services for Individuals with Disabilities, please contact the office on the third floor of the Student Services Building, by email at disabilities@eku.edu or by telephone at (859) 622-2933 V/TDD. Upon individual request, this syllabus can be made available in alternative forms.