Linear Algebra I
Winter 2017

Course Instructor

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Office Hours: MWR 2-3, R 10-11

Learning Outcomes

This is a course on the fundamentals of linear algebra. First we study matrices, matrix multiplication, and expressing linear systems in terms of matrices. We consider the geometry of linear systems and then solve them via elementary matrices and echelon forms. Then we move on to vector spaces, subspaces, linear transformations, and the dimension formula. Finally we look at concepts related to a single linear operator: the determinant, conjugacy, eigenspaces, characteristic polynomials, and diagonalization. Throughout this course we shall study applications of linear algebra to the world around us. At the end, a student will be able to *understand* and *apply*:

- · matrices

- · elementary matrices, echelon forms, solving linear systems

- · vector spaces, subspaces, linear transformations, the dimension formula

- · linear operators, determinants, conjugacy, eigenspaces, characteristic polynomials, diagonalization.

Course Meeting Times

`ma211-01`
MWF 11:00-11:50
West Science 3803

Course Webpage

The course webpage will be on the *NMU EduCat* system, which can be accessed at https://educat.nmu.edu.

Recommended Textbook

David C. Lay, *Linear Algebra and Its Applications*, 5E, Pearson, 2014.

Grading Scheme

Problem Sets (30%)	Tests (35%)	Final (35%)

Problem Sets and Tests

There will be 4 tests spaced throughout the semester. There will also be problem sets posted to the course webpage with due dates spaced throughout the semester. These problem sets are the "backbone" of the class. We will sometimes devote entire classes to working together on the problem sets.

Advice

Learning is an active *process*, and it is critical that you be respectful of this process. I will be working very hard to make this class exciting, engaging and clear, but you will have responsibilities as well. It is *very important* that you attend every class. You need to be *present* and *engaged*. When learning math, you cannot simply sit back and let the information soak in; you must invest your time, little by little, struggling with concepts and problems, making mistakes, and then finding the solutions.

Accessibility

If you have a need for disability-related accommodations or services, please inform the *Coordinator of Disability Services* in the Dean of Students Office at 2101 Hedgcock Building (906-227-1700 or disserv@nmu.edu). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.