

Department syllabus for MATH 2550, effective Fall 2017

Textbook: Introduction to Linear Algebra, Fifth Edition

Author: Strang, Gilbert

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Sections to cover, and suggested pacing

Chapter 1. Sections 1.1, 1.2, 1.3 (~1 week)

Chapter 2. Sections 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 (~4 weeks)

Chapter 3. Sections 3.1, 3.2, 3.3, 3.4, 3.5 (~4 weeks)

Chapter 5. Sections 5.1, 5.2. Optional: 5.3 (~1 week)

Chapter 6. Section 6.1. Optional: 6.2 (~1 week)

Chapter 7. Optional: 7.1 (This section contains an interesting and accessible application that brings to life the relevance of the concept of dimension: image processing and data compression.)

Chapter 8. Sections 8.1, 8.2, 8.3 (Jordan form only) (~2 weeks)

Chapter 10. Optional: 10.6 (This section discusses an application to computer graphics. It follows naturally immediately after Section 8.1.)

The prerequisite for MATH 2550 is MATH 2120. The MATH 2120 course covers vectors in the plane, vectors in three dimensions, dot products, and cross products. So students should have had some exposure to those subjects previously. Those are encountered in Sections 1.1 and 1.2.

There are twenty-one non-optional sections listed above. There are fifteen weeks in a semester; of which approximately thirteen are available as lecture days once testing and review is taken into account. That gives an average of covering three sections every two weeks. The above recommendations reflect the difficulty level of the topics.

Additional resources

Gilbert Strang (the author) has several online video lectures available at:

<https://ocw.mit.edu/courses/mathematics/18-06-linear-algebra-spring-2010/video-lectures/>

Homework solutions and practice exam questions are available at:

<http://math.mit.edu/~gs/linearalgebra/>

Hefferon's free online Linear Algebra textbook is an additional source of examples, homework exercises, and solutions: <http://joshua.smcvt.edu/linearalgebra/>