

MA 242 Linear Algebra

Spring 2018

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Office: MCS 238

Office hours: TR 3:15-4:15 PM or by appointment

Course hours: TR 2:00-3:15 PM in ~~BRB-121~~ PSY B33; discussion T 5:00-5:50 PM in ~~BRB-121~~ MCS B23

Text: Lay, Lay, and McDonald, *Linear Algebra and its Applications*, 5th edition

Course website: <http://math.bu.edu/people/jbala/242.html>

Material: This course will cover the basic concepts of systems of linear equations and their solutions. The first half of the course will emphasize computational techniques, with applications to physics, applied mathematics, economics, and engineering. The second half of the course will cover matrices as linear transformations on vector spaces. We will cover Chapters 1-5 and further topics, time permitting.

Grading: There will be a brief quiz at the beginning of each discussion section, with the exception of the discussion section on January 23. That is, the first quiz will be during the **January 30** discussion section. Make-up quizzes are not given. There will be two in-class exams on **March 1** and **April 19** and a final. The in-class exams each count for 20% of the grade, the final counts for 20%, the quizzes count for 10%, and homework counts for 30%. The only acceptable excuses for missing an exam, quiz or homework due date are legal reasons such as jury duty, substantiated illness, family emergency, or religious reasons. Make-up exams for in-class exams are not given. If you miss an in-class exam for an acceptable reason, your remaining in-class exam will count for 40% of your grade.

Calculator policy: Calculators cannot be used during quizzes and exams.

Homework: Homework will be due one week after it is assigned, and the assignments will be posted regularly on the course website. Late homework will **not** be accepted. Since the answers to the odd-numbered problems are in the back of the book, you must give complete answers on all problems to receive credit. I cannot emphasize enough the importance of doing the homework problems – it is impossible to do well in the course without keeping up with the homework. You are welcome to work with others on your homework; please acknowledge your collaborators on the first page of your write-up.

Computer packages: Some homework problems will involve numerical calculations that are more readily performed with the aid of a computer algebra system or a calculator. Here we mention a few resources.

The book's website (http://wps.aw.com/aw_lay_linearalgebra_5/) has a section on Student Resources, with introductions to computer algebra packages (*Getting Started with Technology* in the left hand column) such as Maple, Mathematica and Matlab. You can download all data sets to avoid tedious typing of data by clicking on *Data Sets* in the left hand column. Free student versions of Matlab and Mathematica are available if you log onto your BU account at the computer lab Common@Mugar at Mugar Library. Once you log on, hit the Start button, then select Run, then enter Matlab or Mathematica. For remote access to Matlab and Mathematica, you will need an account on the scc-lite.bu.edu server. You will need to install X windows software on you computer. Information on scc-lite accounts and free versions of X windows software is available at <http://www.bu.edu/tech/services/support/desktop/computer-labs/unix/>.

There is also the open-source software package Sage, which can be either be used via a free download from <http://www.sagemath.org> or in the Cloud at <http://www.cocalc.com>. Another resource is Wolfram Alpha: <https://www.wolframalpha.com/examples/math/algebra/matrices/>.

Cheating: Boston University's policies on cheating and plagiarism are spelled out in the BU Academic Conduct Code, available at <http://www.bu.edu/academics/resources/academic-conduct-code/>. These policies will be followed in this class.