INSTRUCTOR'S SOLUTIONS MANUAL

LINEAR ALGEBRA AND ITS APPLICATIONS

SIXTH EDITION

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Introduction

I fell in love with linear algebra when I was an undergraduate student and it has remained a central part of my life since that time. It is an interesting and beautiful subject, with a broad range of applications. In recent years, I consistently hear from industry partners about how much the high-tech industry appreciates individuals having a strong foundation in both technical and theoretical aspects of linear algebra. I hope you will enjoy teaching this course as much as I do. You are also welcome to email me at LLinearAlgebra@gmail.com any time you have comments and suggestions, or just want to talk about linear algebra.

There are many ways in which modern technology can support (or hinder) your student's learning. The interactive figures from the electronic textbook can be used in classroom demonstrations to bring linear algebraic concepts alive and demonstrate numerous examples with the push of a button. Take time to explore with the interactive figures and show your students how to use technology to find key definitions and theorems quickly in the electronic textbook.

If your course uses MyLab for homework, there are several things to be aware of. First, for some exercises, your students will enter only a final answer. To get to that answer, they may have half a page or more of calculations. Encourage them to keep a notebook with the exercise statement, worked solutions, and summary notes about what they learned while solving an exercise. As an instructor, you can choose many settings in the program. You can set how many tries students are allowed to solve each question. Most exercises let the student have three tries before MyLab either records an incorrect answer or offers the student a similar question. In my experience, persistence pays off – if students are allowed to continue to work similar exercises, mastery of the skill will result. I have also found that the "View an Example" and "Help Me Solve It" tab help get students going again when they are stuck.

At the end of each chapter, we have highlighted some of the projects that are available online, but moved away from updating the toolbox and the computer manuals. I find that when I am trying to code almost anything, I go to the help features for the program or open a search engine and enter some key words. There are still tips in the *Student Study Guide* about appropriate MATLAB code for various parts of the course.

Technology also provides students with easy access to a wealth of videos on linear algebra and solutions for some of the exercises. Please refrain from posting portions of this *Instructor's Solution Manual* online, as by doing so you are giving other instructors' students solutions to the exercises. Some of the open-access online videos are amazing. Others contain errors or introduce the material in a different order from how it is covered in this text, leading to confusion. I try to talk to my students about using technology to learn effectively without it becoming a crutch that leaves them with perfect homework and failed exams.

The *Instructor's Solution Manual* contains detailed solutions for all the exercises, as well as advice on the exercises themselves. I am interested to hear from you at LLinearAlgebra@gmail.com as to what types of material you would like to use in your course, additional topics you would like to see covered, any typos you find, or just to talk about my favorite subject – linear algebra.

—Judi J. McDonald