

Synopsis

This work has two primary parts. One consists of the 13 LABS and three Projects in this manual. The other is a set of instructional M-files that harness the power of the software package MATLABtm to render it appropriate for an educational setting. The LABS and Projects are meant to supplement a standard sophomore level course in linear algebra. They follow the general outline for such a course, introducing instructional routines and appropriate MATLAB commands to solve problems related to each concept. Our primary goal is to use the laboratory experiences to aid in understanding the basic ideas of linear algebra. As such we use instructional M-files that provide a tool kit for working with linear algebra without the need for programming in the MATLAB command set. Although no programming background is assumed, those students with computing skills can further enhance their skills within MATLAB. We have found that students initially rely on the tool kit, but many quickly begin to use MATLAB commands directly, even though we provide little formal instruction in this area. We recommend an instructional approach that integrates the language and terminology of computing within the lecture format. In addition, when possible and appropriate, computer demonstrations and experiments should be used in lectures. Three of the LABS are different from the others. LAB 5 examines sets with addition and scalar multiplication and investigates the defining properties of a vector space in a pedagogical way. LAB 8 presents the defining properties of the determinant in such a way that a considerable amount of class time can be saved on this topic. Also, LAB 11 presents an independent supplement to the standard classroom coverage of linear transformations by examining the geometry of plane linear transformations. New Section 11.2 introduces homogeneous coordinates to incorporate translations. The LABS are not self contained. Except for LABS 8 and 11, they assume that the material has already been presented in the classroom. Sometimes, however, it is expedient to discuss a topic using a fresh, computational approach. New material has been added to this third addition, both in the LABS and in the accompanying instructional M-files. The modifications to the LABS provide a number of alternate approaches to topics some of which use more graphically oriented M-files to provide visualization of concepts. Many of the instructional M-files have been enhanced to take advantage of the graphical user interface GUI available in MATLAB. In addition we have included instructional files that use the Symbolic Math Toolbox. These sections can be omitted without loss of continuity if this toolbox is not available. A detailed list of new features is on page viii and a short description of all the instructional files is on page x. A full description of the instructional files is available by printing alldesc.txt that accompanies the tool kit of instructional files. We extend our sincere gratitude to the National Science Foundation ILI #DMS-9051282 for

providing the funds for implementing a mathematics laboratory at Temple University. This facility provided the educational arena necessary to develop the laboratory materials and extend our instructional M-files for MATLAB from 1990 to 1993. We thank the many students who were patient with and receptive to using the laboratory to aid in the development and understanding of the concepts of linear algebra. A special thanks to our colleague Dr. Nicholas Macri for his valuable assistance in designing and preparing this manual. David R. Hill David E. Zitarelh May, 2003

Book Information

Paperback: 336 pages

Publisher: Pearson; 3 edition (October 11, 2003)

Language: English

ISBN-10: 0131432745

ISBN-13: 978-0131432741

Product Dimensions: 8.2 x 0.9 x 10.9 inches

Shipping Weight: 1.2 pounds (View shipping rates and policies)

Average Customer Review: 3.6 out of 5 stars 4 customer reviews

Best Sellers Rank: #83,943 in Books (See Top 100 in Books) #60 in [Books > Science & Math > Mathematics > Pure Mathematics > Algebra > Linear](#) #438 in [Books > Textbooks > Science & Mathematics > Mathematics > Algebra & Trigonometry](#)

Customer Reviews

This work has two primary parts. One consists of the 13 LABS and three Projects in this manual. The other is a set of instructional M-files that harness the power of the software package MATLABtm to render it appropriate for an educational setting. The LABS and Projects are meant to supplement a standard sophomore level course in linear algebra. They follow the general outline for such a course, introducing instructional routines and appropriate MATLAB commands to solve problems related to each concept. Our primary goal is to use the laboratory experiences to aid in understanding the basic ideas of linear algebra. As such we use instructional M-files that provide a tool kit for working with linear algebra without the need for programming in the MATLAB command set. Although no programming background is assumed, those students with computing skills can further enhance their skills within MATLAB. We have found that students initially rely on the tool kit, but many quickly begin to use MATLAB commands directly, even though we provide little formal instruction in this area. We recommend an instructional approach that integrates the language and terminology of computing within the lecture format. In addition, when possible and appropriate,

computer demonstrations and experiments should be used in lectures. Three of the LABS are different from the others. LAB 5 examines sets with addition and scalar multiplication and investigates the defining properties of a vector space in a pedagogical way. LAB 8 presents the defining properties of the determinant in such a way that a considerable amount of class time can be saved on this topic. Also, LAB 11 presents an independent supplement to the standard classroom coverage of linear transformations by examining the geometry of plane linear transformations. New Section 11.2 introduces homogeneous coordinates to incorporate translations. The LABS are not self contained. Except for LABS 8 and 11, they assume that the material has already been presented in the classroom. Sometimes, however, it is expedient to discuss a topic using a fresh, computational approach. New material has been added to this third addition, both in the LABS and in the accompanying instructional M-files. The modifications to the LABS provide a number of alternate approaches to topics some of which use more graphically oriented M-files to provide visualization of concepts. Many of the instructional M-files have been enhanced to take advantage of the graphical user interface GUI available in MATLAB . In addition we have included instructional files that use the Symbolic Math Toolbox. These sections can be omitted without loss of continuity if this toolbox is not available. A detailed list of new features is on page viii and a short description of all the instructional files is on page x. A full description of the instructional files is available by printing alldesc.txt that accompanies the tool kit of instructional files. We extend our sincere gratitude to the National Science Foundation ILI #DMS-9051282 for providing the funds for implementing a mathematics laboratory at Temple University. This facility provided the educational arena necessary to develop the laboratory materials and extend our instructional M-files for MATLAB from 1990 to 1993. We thank the many students who were patient with and receptive to using the laboratory to aid in the development and understanding of the concepts of linear algebra. A special thanks to our colleague Dr. Nicholas Macri for his valuable assistance in designing and preparing this manual. David R. Hill David E. Zitarelh May, 2003

No complaints.

This book is decent. It demonstrates very easily how to use MATLAB to solve systems of equations.

Most of the pages I need for my homework are missing. This book is completely useless to me.

Thanks a lot.

The book arrived very fast with Prime. Perfect condition, exactly what I needed for class. Cheaper than campus bookstore, I saved almost 40% buying from .

[Download to continue reading...](#)

Linear Algebra Labs with MATLAB (3rd Edition) Linear Algebra and Its Applications plus New MyMathLab with Pearson eText -- Access Card Package (5th Edition) (Featured Titles for Linear Algebra (Introductory)) Linear Algebra with Applications (9th Edition) (Featured Titles for Linear Algebra (Introductory)) 50 More Stem Labs - Science Experiments for Kids (50 Stem Labs) (Volume 2) Easy Science Demos & Labs For Chemistry (Easy Science Demos and Labs Series Ser) Linear Algebra for Engineers and Scientists Using Matlab Signals and Systems using MATLAB, Second Edition (Signals and Systems Using MATLAB w/ Online Testing) Linear Algebra With Applications (Jones and Bartlett Publishers Series in Mathematics. Linear) Accelerating MATLAB Performance: 1001 tips to speed up MATLAB programs Image Processing with MATLAB: Applications in Medicine and Biology (MATLAB Examples) Linear Programming with MATLAB (MPS-SIAM Series on Optimization) Differential Equations and Linear Algebra (3rd Edition) Linear Algebra and Its Applications, 3rd Updated Edition (Book & CD-ROM) Applied Linear Algebra (3rd Edition) Linear Algebra and Its Applications (3rd Edition) Algebra 1: An Incremental Development, 3rd Edition (Saxon Algebra 1) Elementary & Intermediate Algebra (3rd Edition) (The Sullivan/Struve/Mazzarella Algebra Series) Linear Algebra and Its Applications, Books a la Carte Edition Plus MyMathLab with Pearson eText -- Access Code Card (5th Edition) Linear Algebra and Its Applications, 4th Edition, India Edition Schaum's Outline of Linear Algebra, 5th Edition: 612 Solved Problems + 25 Videos (Schaum's Outlines)

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)