

# Chapter 0

## 1. What are these labs anyway?

You will work through seven labs this semester and one optional project. Each lab corresponds to a chapter in the book and will give you a concrete way to see the material. Additionally, you will not have to worry about arithmetic details and will be able to concentrate on the bigger issues. The optional project is about the application of Linear Algebra to music. You will learn more details later in the semester.

## 2. Why are the labs part of my Linear Algebra class?

There are three main reasons why you will do the labs semester.

**Hands on experience with concepts.** Linear Algebra is traditionally the hardest math course at Laney. There are many subtle and abstract concepts in this class that you have not seen before. By implementing these in MATLAB, these concepts will become more concrete and you will get more practice working with them.

**Applications of Linear Algebra.** Even though the concepts in this class seem very abstract, they are surprisingly useful. In the projects you will see how Linear Algebra can be applied in the real world.

**Learning MATLAB.** MATLAB is a powerful software package that allows you to solve many types of mathematical and engineering problems. If you are planning on transferring to a four year school to study engineering, you will find that most schools require their students to know MATLAB. The MATLAB skills you learn here will also be useful in your career.

## 3. Sounds great. Where can I get a copy of MATLAB?

For this class, you do not need your own copy. All of the computers in G203 already have MATLAB installed on them. The computer lab is open 9:00 A.M to 8:00 P.M. Monday through Thursday, and 9:00 A.M. to noon on Friday.

If you really want your own copy, you can buy the student edition of MATLAB for approximately \$100. It is available online from The Math Works at [www.mathworks.com](http://www.mathworks.com). (click on the store link by the shopping cart at the top right of the screen).

You can also buy a copy from the ASUC Berkeley Bookstore (SW corner of campus at Cal, (510) 642-7294). The software is upstairs in the new book section, so you don't have to brave the lines downstairs.

If you are buying your own copy, you want to get MATLAB & Simulink Student Version Release 14 with Service Pack 3, which has version 7.1 of MATLAB. We have version 6 installed on the lab computers. If you can find a used copy of version 6 somewhere, feel free to buy that.

## 5. I'm stuck. Where can I get help?

There are several places you can get help.

- **MATLAB**  
MATLAB itself has a significant amount of help available. MATLAB's demos and tutorials are discussed in the next chapter.
- **[http://groups.yahoo.com/group/Linear\\_Algebra\\_Laney](http://groups.yahoo.com/group/Linear_Algebra_Laney)**  
We have set up a forum for you to ask questions and discuss the labs and anything else having to do with this class.
- **[www.mathworks.com](http://www.mathworks.com)**  
This website is run by the company that makes MATLAB. Check out the Academia section and the User Community section to find tutorials, discussion groups and programming contests.
- **[www.google.com](http://www.google.com)**  
Google is always your friend
- **Mastering MATLAB (book)**  
This is a self-described comprehensive tutorial and reference. Here is the official info for version 6 and version 7 of MATLAB:  
*Mastering MATLAB 6*, Hanselman and Littlefield, ISBN 0130194689  
*Mastering MATLAB 7*, Hanselman and Littlefield, ISBN 0131430181
- **Office Hours**  
Your instructor is available for 5 hours every week to answer any questions you have. Take advantage of this.

## 6. What do I need to turn in for each lab?

Each lab is broken into several sections and most sections have several questions. You will need to write up your answers to each of the questions. Some questions will ask you to include a graph you generated. If you are typing your lab write ups, you can insert the picture into your text. If you are doing your write ups by hand, you can print a copy of your picture and staple or glue it to your paper. Please include your graphs inline, as that will make it easier for us to grade.

## 7. I'm ready. How do I start?

Start reading Chapter 1.