

Course Outline:

The chapter references are to the Johnson and Wichern text “Applied Multivariate Statistical Analysis” 5th Edition. Prentice Hall.

We will omit various sections in order to complete the big topics.

Intro to Multivariate Analysis – Ch 1
Matrix Algebra and Random Vectors – Ch 2 - Review
Geometric Aspects of Multivariate Data – Ch 3
The Multivariate Normal Distribution – Ch 4
Inference for Multivariate Means – Ch 5-6
Multivariate Linear Regression – Ch 7
Analysis of Covariance Structure – Ch 8, 9, 10
Classification and Grouping – Ch 11, 12

Almost all real data sets are multivariate! We usually try to analyze such data sets one or two variables at a time, so that we can use our intuition to assist us. My objective in this course is to show you how to carry over your low-dimensional intuition to higher dimensions, and to warn you of the surprising failures of this approach in certain circumstances.

You will need to use some computer software: Splus, R, SAS, MINITAB are capable ones – use whatever you are familiar with.

The text has a CD of data sets. Very convenient. We will use these. If you have an older version of the text, you can probably use it, but it may not have the CD or the exact same exercise numbering.

During the course, you will be required to present a topic – about a 15 minute presentation with another 15 minutes allowed for Q&A. I’ll give a list of topics soon – probably assign them at random.

Evaluation: Assignments will count 60%, and a final exam 40%. One of the assignments will be the above-mentioned presentation. Possibly a quiz or two as well.

Schedule: MW 930-1120 WM 3517 (unless I am able to get a closer room)

Instructor: Larry Weldon
weldon@sfu.ca
604-291-3667
604-943-7962
K 10565

Notes on web: www.stat.sfu.ca/~weldon