

Stat 501: Multivariate Statistical Methods

Spring 2013

Prerequisites: Stat 500 or 402 **and** Stat 447 or 542 **and** matrix algebra.

Lecture Location: 2113 Snedecor

Lecture Times: TR 9:30 – 10:45 am

Class Website: <http://maitra.public.iastate.edu/stat501/sp2013.html>

Instructor: Professor Ranjan Maitra

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Office: 2220 Snedecor Hall

Phone: 515-294-7757

Office Hours: by appointment only

Text and References: The required textbook for the class is “Applied Multivariate Statistical Analysis” by Richard A. Johnson and Dean W. Wichern (Prentice Hall, 2007, Sixth Edition).

We will be following a slightly updated version of Professor Koehler’s and my class notes which will also be posted on the class website.

Content: Statistical methods for analyzing and displaying multivariate data: simultaneous analysis of multiple responses, multivariate analysis of variance; summarizing high dimensional data with principal components, factor analysis, canonical correlations, multidimensional scaling; grouping similar items with cluster analysis; classification methods; dynamic graphics.

Software: The software used will be primarily R (including necessary packages). You are assumed to be proficient in R. If needed, you may view videos of lectures from Fall 2011 at <http://www.public.iastate.edu/~maitra/stat579/lectures.html>

Grades: Your performance on homeworks, two midterm exams, and one final exam will determine your grade. I will weigh homeworks, midterms and finals according to the following percentages when computing the final grade:

Homeworks: 20%

Midterms: each worth 20%

Final Exam: 40%

Homework Policy: I will assign a problem set each week (roughly). I will post homework problems and solutions on the course webpage. I encourage you to collaborate on the homework problems, but for purposes of practice, to write your own answers independently. **All homework should be turned in online only in the form of pdf files on Blackboard only.**

Exams: The dates for the two in-class midterms will be decided later and in consultation with you. Some of the material may involve using and interpreting computer software/output. The registrar has tentatively set the time for the **final** exam to be on **Monday, May 6** from **7:30 - 9:30 am**. **All exams should be turned in online only in the form of pdf files on Blackboard only.**

Academic Dishonesty: This class will follow the Iowa State University policy on academic dishonesty found in the ISU catalog. A score of zero will be given for the entire assignment in which the academic dishonesty occurred and further disciplinary action will be pursued in line with university policy.

Accommodations for Students with Disabilities: Iowa State University complies with the Americans with Disabilities Act and Sect 504 of the Rehabilitation Act. If you have a disability and anticipate needing accommodations in this course, please contact Professor Ranjan Maitra, the course instructor, within the first two weeks of the semester. Retroactive requests for accommodations will not be honored. Before meeting with the course instructor, you will need to obtain a SAAR form with recommendations for accommodations from the Disability Resources Office, located in Room 1076 on the main floor of the Student Services Building. Their telephone number is 515-294-6624.