STAT 6560 Applied Multivariate Analysis
Autumn 2016

Lecture: MWF 11:30AM-12:25PM in Enarson Classroom Building 358

Instructor: Yoonkyung Lee
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Course web page:
The course has a web page on Carmen. You will find the class schedule, course announcements, homework assignments, and other information about the class on the web page. Please check it out on a regular basis.

Text: *Applied Multivariate Statistical Analysis*, 6th Edition by Richard A. Johnson and Dean W. Wichern (required)
The book is on reserve in the 18th Avenue Library.

Prerequisites: Stat 6450 (Applied Regression Analysis) or equivalent, Math 2568 (Linear Algebra) or equivalent, and some experience with statistical computing packages are required.

Course Description

Statistics 6560 is an introductory multivariate statistical analysis course designed for graduate students in the Department of Statistics. The aim of the course is to introduce a variety of standard statistical methods used to analyze multivariate data, emphasizing the implementation and interpretations of these methods. Topics covered include matrix computation of summary statistics, graphical techniques, the geometry of sample data, the multivariate normal distribution, inferences on a mean vector, principal component analysis, factor analysis, classification/discrimination, as well as cluster analysis and canonical correlation analysis if time permits.

Computing

Students will be required to use the R software environment for statistical computing and graphics. R can be downloaded for free at `http://www.r-project.org`. Instructions for using the software will be given in class. Most homework assignments will require some computing.

Assignments

Homework will be assigned regularly throughout the semester, will be due at the beginning of the class on the dates announced in class, and will be graded. Homework and solutions will be posted on the course web page. For homework assignments requiring computing, properly formatted computer output and graphs should be included with your homework solutions. Computer code must be separately submitted online via Carmen as an appendix to each assignment while a hard copy of your homework (without the code) should be handed in. The code should include comment statements that indicate what sections of the code correspond to the specific homework questions so that, if needed, the grader can read and check your code for its accuracy.

Grading

Homework: 30%
Midterm: 35% (tentatively around November 4, Friday)
Final take-home project: 35%
(to be given in the final week and tentatively due December 13, Tuesday)

Academic Misconduct

Although students are encouraged to work together on assignments, each student is expected to write and submit individual solutions to homework problems. Academic misconduct will not be tolerated and will be dealt with procedurally in accordance with university policy.

Special Accommodations

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 292-3307; `http://www.ods.ohio-state.edu/`.