

STA 6707
Analysis of Multivariate Data
Section 5952 (3 credit hours)
Fall 2010
Course Information and Policies

Description: STA 6707 is an elective course intended for graduate students of Statistics. It covers many classical concepts and techniques of multivariate analysis, including multivariate normal distribution theory, basic inference for multivariate linear models, principal components, factor analysis, clustering, discriminant analysis, and canonical correlation analysis.

Prerequisite: STA 6208

Course Web Site: <http://www.stat.ufl.edu/~tpark/STA6707>

Please check this site regularly! Most course documents and important information, including homework assignments, course schedule, and special announcements, will be posted there.

Instructor: Trevor Park, Griffin-Floyd 116C, tpark@stat.ufl.edu, 273-2973, Fax: 392-5175

Lecture: Monday, Wednesday, & Friday, Period 5 (11:45-12:35), Griffin-Floyd Hall, Room 230

Office Hours: Listed on course web site, and *subject to change*, particularly in the first few weeks of class. Special appointments with the instructor may be arranged by mutual agreement.

Textbook: Alan J. Izenman, *Modern Multivariate Statistical Techniques: Regression, Classification, and Manifold Learning*, Springer (available at bookstore). *Required.*

(Refer to the course web site for information about other reference material.)

Homework: Homework will be assigned approximately every two weeks, and will generally involve both theory and data analysis. Homework assignments are not necessarily equally weighted.

Software: Data analysis will generally be performed using the R statistical environment, although some SAS® examples may be provided. Details concerning access to R and SAS® software are provided on the course web site.

Exams: There will be two in-class exams. Details will be announced prior to each.

Project: There will be a final project. You will give a presentation to the class and submit a written report. Details will be announced later.

Course Grade: Grading will be based on a composite score: 25% homework assignments, 25% each exam, 25% project.

Final letter grades will be assigned on the University's official grading scale that includes minus grades. Please familiarize yourself with the policy related to this scale and the grade point equivalences of letter grades. Details may be found on the following web page:

<http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

A grade of Incomplete (I*) is assigned only in rare cases that involve extenuating circumstances. Extenuating circumstances require specific, official documentation (e.g. a signed

excuse note from the Student Health Care Center). You are eligible for a grade of Incomplete only if you have completed a significant amount of the graded course work and you are currently passing based on that work (with a C or better), as determined by the instructor. If you find yourself unable to continue the semester before that point is reached, you should instead seek an administrative withdrawal. To receive a grade of Incomplete, CLAS policy requires you to sign an Incomplete Grade Contract with the instructor that specifies a plan and deadline for completing the course.

Lecture Attendance: Attendance is required on certain class days, including exam days and days during which project presentations are scheduled. Attendance is greatly encouraged on all regular lecture days, because almost all topics covered in lecture are potentially examinable, and will likely be representative of the topics covered on exams.

Tentative Course Outline:

TOPIC	TEXTBOOK SECTIONS
Multivariate Descriptive Methods	—
Matrix Algebra, Random Vectors, and Multivariate Normality	Ch. 3
Inference in Multivariate Normal-Theory Models	Ch. 6
Principal Component Analysis	Sec. 7.2
Canonical Correlation Analysis	Sec. 7.3
Factor Analysis	Sec. 15.4
Classification and Discrimination	Ch. 8
Cluster Analysis	Ch. 12

Additional topics may be covered, as time permits.

Reasonable Accommodations: To request classroom accommodation, please be certain that you have made all necessary arrangements with the Dean of Students Office, and obtain from them documentation to submit to the instructor at the time of your request. A request must be made to the instructor *at least one week in advance* of the date for which the accommodation is requested.

This course information and policies sheet can be made available in alternative formats to accommodate print-related disabilities. Contact the instructor for information.