Course Syllabus
Statistics 6216 - Applied Multivariate Analysis
Spring 2012; 6:10-8:50 W, Phillips 306

• **Instructor:** Dr. Alex McLain. E-mail: alex.mclain@gmail.com, Office Phone: (301)435-6940, Cell Phone: (607)222-1368.

• **Teaching Assistant:** Meng-ta Yang, E-mail: danyang@gwmail.gwu.edu.

• **Office Hours:** Wednesday 8:50 - 10:00, and by appointment.


• **Course Purpose:** This course designed to continue the techniques of statistical analysis of several variables, most likely dependent, following a joint normal distribution, that you learned in Stat 6215. The main topics we will cover in this course (among others) are:
  - Comparisons of Several Population Means
  - Multivariate Linear Regression Models
  - Principal Components
  - Factor Analysis and Inference for Structured Covariance Matrices
  - Canonical Correlation
  - Discrimination and Classification
  - Clustering and Distance Methods

There will be many applications of these multivariate techniques to the analysis of data from the behavioral, social, medical, and physical sciences. SAS programming language will be used and the computational aspects will include heavy use of matrix algebra tools (Proc IML). SAS/IML (Interactive Matrix Language) software is a matrix programming facility for data analysis and manipulation. SAS/IML is a component of the SAS System. You are expected to be familiar with the SAS software. To solve many of the homework problems you will need access to a computer. GW labs provide access to SAS. The University has a site license for SAS.

• **Course Work:**
  - *Homework (60%):* Homework is assigned each Wednesday in lecture and due the foll, and one day, unless otherwise noted. Each problem counts 10 points. All graded work will usually be returned and discussed one week after due date. Late submissions will not be accepted.
  - *Exams (40%):* There will be 1 mid-term exam and a final exam. The tentative date for the mid-term examination is February 22nd.

• **Academic Integrity:** I personally support the GW Code of Academic Integrity. It states::: Academic dishonesty is defined as cheating of any kind, including misrepresenting one’s own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information. For the remainder of the code, see: http://www.gwu.edu/ntegrity/code.html
• **Support for students outside classroom:**

  – Disability Support Services - Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Marvin Center, Suite 242, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: http://gwired.gwu.edu/dss/

  – University Counseling Center (UCC) 202-994-5300 - The University Counseling Center (UCC) offers 24/7 assistance and referral to address students’ personal, social, career, and study skills problems. Services for students include: - crisis and emergency mental health consultations - confidential assessment, counseling services (individual and small group), and referrals

http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices

• **Security** - In the case of an emergency, if at all possible, the class should shelter in place. If the building that the class is in is affected, follow the evacuation procedures for the building. After evacuation, seek shelter at a predetermined rendezvous location.

• **Class Policies:**

  – Class participation is strongly encouraged. I welcome any and all questions, they enhance the classroom experience for everyone!

  – Problem sets will be assigned throughout the semester. You are encouraged to work with others. Mathematical/Statistical learning is done best through practice, which may take more than the assigned homework gives!!

  – Late homework will not be accepted, unless accompanied by a doctors excuse.

  – Please turn cell phone off, or to vibrate. Also please do not wear blue tooth devices in class.