AMS 577 **Spring 2023**

Multivariate Analysis

INSTRUCTOR:	Myoungshic Jhun
CLASS:	Mon, Wed 9:00-10:20 am
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OFFICE HOURS:	Mon, Wed 10:30 - 11:50 am or by appointment

Text: "Applied Multivariate Statistical Analysis" by Richard A. Johnson and Dean W. Wichern; 6th edition, Pearson Publishing, 2007; ISBN-13: 978-0131877153 / ISBN-10: 0131877151

Topics to be covered:

The multivariate distribution. Estimation of the mean vector and covariance matrix of the multivariate normal. Discriminant analysis. Canonical correlation. Principal components. Factor analysis. Cluster analysis.

Homework: Assignments will be given regularly. No late homework will be accepted. The lowest two homework scores will be dropped before computing your average.

Tests:

Exam I:	TBA
Exam II:	TBA
Final:	TBA

Grading of Tests and Homework

Grading will be based on the following:
Homework (10%), Midterms ($25\% \times 2 = 50\%$), Final exam (40%)

Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

Course Evaluations

Stony Brook University values student feedback in maintaining the high quality education it provides and is committed to the course evaluation process, which includes a mid-semester assessment as well as an end-of-the-semester assessment, giving students a chance to provide information and feedback to an instructor which allows for development and improvement of courses. Please click the the following link to access the course evaluation system: http://stonybrook.campuslabs.com/courseeval/

Attendance Policy

(1) Unexcused absences will affect the students final grade in the course.
(2) If a student has over 20% unexcused absence, the students final course grade will be an F.
(3) When a student excuses his/her absence, the student must provide documentation of the reason for the absence to the instructor.
(4) The instructor of the course reserves the right to excuse absences.

Tentative Course Schedule

Week	Dates	Sections	Topics	Homework
1	2/27	Chapter 1	Aspects of Multivariate Analysis	
2	3/6, 3/8	Chapter 2	Matrix Algebra and Random Vectors	
3	3/13, 3/15	Chapter 3	Sample Geometry and Random Sampling	
4	3/20, 3/22	Chapter 4	The Multivariate Normal Distribution	
5	3/27, 3/29	Chapter 5	Inferences about a Mean Vector 4	
6	4/3, 4/5		Review, Exam 1	
7	4/10, 4/12	Chapter 6	Comparison of Several Multivariate Means	
8	4/17, 4/19	Chapter 7	Multivariate Linear Regression Models	
9	4/24, 4/26	Chapter 8	Principal Components	
10	5/1, 5/3	Chapter 9	Factor Analysis	
11	5/8, 5/10		Review, Exam II	
12	5/15, 5/17	Chapter 10	Canonical Correlation Analysis	
13	5/22, 5/24	Chapter 11	Discriminant and Classification	
14	5/29, 5/31	Chapter 12	Cluster Analysis	
15	6/5		Supplements	