

**STA535:Multivariate Data Analysis
Summer 2014**

Office Hours: Monday 3:15-3:45
Tuesday 3:15-3:45 & 5-6
Wednesday 3:15-3:45
Thursday 3:15-3:45 & 5-6

Instructor: Dr. Randall H. Rieger
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Class Website: d2l.wcupa.edu

Text: Johnson and Wichern, Applied Multivariate Analysis, 6th edition

Course Topics:

Multivariate data typically consist of many records, each with readings on two or more variables, with or without an "outcome" variable of interest. Procedures covered in this course include multivariate analysis of variance (MANOVA), principal component analysis, factor analysis and classification techniques. This course will require that students are comfortable with matrix algebra.

Evaluation:	Weekly Assignments	65%
	Project / Presentation	25%
	Participation/labs	10%

Policy for assignments:

- There will be an assignment due each week. These assignments will be graded. There will be a 20% point deduction penalty for each day late. Any assignment not handed in at the onset of class will be considered one day late.
- Students are expected to work independently on the assignments.

Policy for final project:

- Each student will be required to sign up for a project topic by the third class period. Topics may include:
 - Multivariate analysis issues not covered in this class.
 - Review and critique of published paper using techniques covered in this class.
 - Other topics with permission of instructor.
- Further details and a list of possible topics will be presented in class.
- The project will entail a 15 minute presentation on the last day of class. The presentation should be prepared so that all students in the class can easily understand the contents.

Class Format:

- Most classes will consist of a lecture followed by an interactive lab session. All assignments for the lab session will be posted prior to the class period.

Class Rules:

- Students are expected to be on time for class.
- Students engaging in disruptive behavior will be dealt with according to university policy.
- Academic dishonesty will not be tolerated in this class. Any cases of academic dishonesty will be dealt with according to university policy, and I will recommend the maximum possible penalty.
- Students with disabilities are encouraged to make their needs known to the instructor and the Office of Services for Students with Disabilities early in the semester.
- Please make use of office hours and other department and university resources if extra help is needed.
- Students are responsible for getting class notes and materials from missed classes.
- In the event that I am unable to meet a class, I will a) notify you in person at a prior time or b) an official class cancellation notification on the stationery of the Department of Mathematics, signed and date stamped by the Department Secretary (Barbara Maleno) will be posted on the classroom door. All other postings announcing the cancellation of this class are to be considered unofficial and are to be ignored.

Additional Notes:

- This is an advanced class. Students must be willing to work with advanced topics at a high level to be successful in this class.

STA531**Assignments**

Note: Assignments are subject to revision and re-scheduling.

Class	Date	Chapter	Topic	Assignments
1	May 27	2	Matrix Algebra Proc IML	
2	May 29	1,3	Descriptive Statistics Distance Expected Values Generalized Variance Linear Combinations	
3	June 3	4	Multivariate Normal Distribution	Assignment #1 Due
4	June 5	5	Inferences about a Mean Vector	
5	June 10	7	MANOVA	Assignment #2 Due
6	June 12	8	Principal Components I	
7	June 17	8	Principal Components II	Assignment #3 Due
8	June 19	9	Factor Analysis I	
9	June 24	9	Factor Analysis II / Presentations	
10	June 26	10	Discrimination/Classification Presentations	Assignment #4 Due
11	June 27		Presentations?	