Multivariate Research Methods

Welcome to COM 608: Multivariate Research Methods

This course addresses multivariate statistical analysis of data. You will learn various multivariate statistical tests and the instances in which they are appropriate, and you will learn how to interpret the results of such tests. In addition, you will examine and critique published research in which such methods are employed. There is a laboratory component to the course, for which you will use SPSS for Windows using a dataset that I will provide.

Professor

Dr. Kory Floyd
Office: Stauffer 335D
Office phone: (480) 965-3568
Office hours: W 1:30-3:00
E-mail: kory@asu.edu

Seminar Assistants

Lori Bednarchik
Office: Stauffer 345
Office hours: W 12:00-3:00

Aaron Sanchez
Office: Stauffer 415
Office hours: TTh 8:30-10:30 & 2:00-3:00

Required Texts

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Boston, MA: Pearson.

Keppel, G., & Wickens, T. D. (2004). *Design and analysis: A researcher's handbook* (4th ed.). Boston, MA: Pearson.

Course Requirements

Your grade in this course will come from the following sources: two examinations, six data analysis assignments, and four critiques of published research. Each exam is worth up to 100 points and will cover approximately half of the course material. The data analysis assignments will cover the following procedures: k-way ANOVA, repeated-measures ANOVA, between-subjects MANOVA, mixed-model MANOVA, multiple regression analysis, and factor analysis. I will provide you with a dataset that will be yours for the semester. In each assignment, you will be given a list of hypotheses and/or research questions to analyze. Your job will be to select and perform the appropriate analysis, interpret the output, and write up the results in a 3-5 page (typed, double-spaced) paper using proper APA format. Each assignment is worth up to 50 points.

The last portion of your grade will come from completing four written critiques of published research. For the procedures of k-way ANOVA, between-subjects MANOVA, multiple regression analysis, and factor analysis, you will be responsible for finding one journal article that employs that procedure and

writing a 2-3 page review of the study in which you focus on the authors' use of the procedure and their interpretation of the results. Each critique is worth up to 30 points.

A total of 620 points is possible. Your final grade will be determined by your total number of points. I do not apply a curve to any assignments or exams. Thus, your final grade will follow the scale below:

A+ = 601-620	B = 515-538	C = 434-476
A = 577-600	B- = 496-514	D = 372-433
A- = 558-576	C+ = 477-495	E = <372
B+ = 539-557		

Course Schedule (tentative; subject to change)

Date	Topic(s)	Readings/Assignments
1-14	Course introduction **ONLINE**	
1-21	Multivariate techniques & assumptions	(H) Ch. 1 & 2 (K) Ch. 5
1-28	Data management **LAB DAY**	
2-4	k-way ANOVA	(H) pp. 364-366 (K) Ch. 8 & 9
2-11	ANOVA/ANCOVA **LAB DAY**	**ANOVA critique due**
2-18	Repeated-measures ANOVA **LAB DAY**	**k-way ANOVA assignment due**
2-25	MANOVA/MANCOVA **LAB DAY**	**Repeated-measures ANOVA assignment due** (K) Ch. 14 & 19
3-4	**Exam one**	**MANOVA critique due**
3-11	**No class: Spring break**	

Multivariate Research Methods

Date	Topic(s)	Readings/Assignments
3-18	Mixed-model MANOVA **LAB DAY**	**Between-subjects MANOVA assignment due** (H) pp. 366-382 (K) Ch. 20
3-25	Multiple regression analysis	**Mixed-model MANOVA assignment due** (H) Ch. 4
4-1	Multiple regression analysis **LAB DAY**	**Regression critique due**
4-8	Factor analysis	**Regression assignment due** (H) Ch. 3
4-15	Factor analysis **LAB DAY**	**Factor analysis critique due**
4-22	Catch-up and review for final	**Factor analysis assignment due**
4-29	**Exam two**	

Academic Integrity Policy

Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions, and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification, and dismissal. For more information, see:

http://provost.asu.edu/academicintegrity

In the "Student Academic Integrity Policy" manual, ASU defines plagiarism as "using another's words, ideas, materials or work without properly acknowledging and documenting the source. Students are responsible for knowing the rules governing the use of another's work or materials and for acknowledging and documenting the source appropriately." You can find this definition at:

https://provost.asu.edu/sites/default/files/AcademicIntegrityPolicyPDF.pdf