COURSE SYLLABUS

PSY 5246C: Multivariate Data Analysis

Fall 2013

Instructor: Dr. Stefany Coxe

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Office: MMC DM 275

Office Hours: By Appointment

COURSE DESCRIPTION

Basic techniques of multivariate analysis, emphasizing the rationale and applications to psychological research. Includes multiple regression, MANOVA, principal component analysis, and factor analysis.

STATISTICAL BACKGROUND

Graduate coursework in analysis of variance and linear regression. We will cover a variety of topics in this course, but all of them build on a basic ANOVA and regression (general linear model) framework. I do not expect you to have taken SEM or other advanced courses.

GOALS OF THE COURSE

- Familiarize you with classic multivariate statistics
- Make sure that you understand how to actually conduct these analyses
- Prepare you for further study in applied statistics
- Give you enough background to understand current applied statistics research

TEXTBOOK

Tabachnick, B. G., & Fidell, L. S. (2012). *Using Multivariate Statistics, 6th Edition*. Pearson.
This is a very large book that includes chapters on just about every multivariate technique you will ever use. In addition to theory and interpretation, it includes software output and example APA-style write-ups for all techniques. It is a very good resource to have in your library.

SOFTWARE

We will use both SPSS and SAS in this course. Each package has strengths and weaknesses, so you will want at least a basic understanding of both. I will provide you with information to get started in SPSS and SAS, as well as information about specific analyses we will cover in this class. You will need to access either SPSS or SAS outside of class to complete assignments.

BLACKBOARD

Course materials (lecture notes, computer code, and assignments) will be posted on the Blackboard site for the course. You should bring lecture notes and other materials to class. Please note that the lecture notes are not complete – you will also need to take notes in class and consult the book.

TEACHING ASSISTANT

Our teaching assistant, Ryan Hill, will be available as an additional resource. You can contact him via email: rhill004@fiu.edu

ATTENDANCE

I shouldn't have to tell you to attend every class. This is graduate school.

ASSIGNMENTS

- Homework
    - Five homework assignments – see the Schedule of Classes. Homework should be completed before class begins. You will need to access SPSS and/or SAS to complete the homework assignments.
- Quizzes
    - Five in-class quizzes on the day each homework assignment is due – see the Schedule of Classes. I will give you output or other information and you will need to interpret the results or otherwise comment on the material. You will have one hour to complete each quiz, before lecture begins, so it is in *your interest* to be punctual!

GRADING

Homework assignments will comprise 50% of your letter grade; in-class quizzes will comprise the other 50%. There are no plans for make-up homework or quizzes.

100–93%	92–90%	89–87%	86–83%	82–80%	79–77%	76–73%	72–70%	69–60%
A	A-	B+	B	B-	C+	C	C-	D

SPECIAL NEEDS

Any student with a disability or other special need that may require special accommodations for this course should make this known to the instructor during the first week of class.
http://drc.fiu.edu – Graham Center 190, Phone: (305) 348-3532, Email: drcupgl@fiu.edu

ACADEMIC MISCONDUCT

Students at Florida International University are expected to adhere to the highest standards of integrity in every aspect of their lives. Honesty in academic matters is part of this obligation. Academic integrity is the adherence to those special values regarding life and work in an academic community. Any act or omission by a student which violates this concept of academic integrity shall be defined as academic misconduct and shall be subject to the procedures and penalties set forth herein. All students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.

ACADEMIC DISHONESTY

Please refer to your student handbook for a description of what constitutes academic dishonesty.

NOTE: Anything on this syllabus is subject to change at the Instructor's discretion.

Tentative Schedule of Classes

Date	Topics	Assignments	Chapter
Aug 28	Introduction, Matrix algebra		1, 2, Appendix A
Sep 04	Software, Linear regression		3, 5
Sep 11	Linear regression (in matrix form)	HW 1 due, Quiz 1	3, 5
Sep 18	Linear regression (in matrix form)		3,5
Sep 25	Matrix algebra		Appendix A
Oct 02	Maximum likelihood	HW 2 due, Quiz 2	Enders (2005)
Oct 09	Missing data		Baraldi & Enders (2010)
Oct 16	Outliers		4
Oct 23	Principal components	HW 3 due, Quiz 3	13
Oct 30	Factor analysis		13
Nov 06	FA / Canonical analysis		12
Nov 13	ANCOVA	HW 4 due, Quiz 4	6
Nov 20	ANCOVA/MANOVA		6, 7
Nov 27	MANOVA		7
Dec 04	SEM / GLiM / HLM	HW 5 due, Quiz 5	10, 14, 15
Dec 11	FINALS WEEK		