

COURSE SYLLABUS

MARKETING ANALYTICS--I

SPRING SESSION 2017

Instructor: A. Narayanan Saturdays 1:00pm--4:50pm
Class: Lindner 214 Office Hours 4:50pm--5:50pm (Sat.)

Text: Analyzing Multivariate Data, by J.Lattin, J.D.Carroll, and P.E.Green, Duxbury, 2003. This is the primary text for the course. I will mostly follow my class notes which can be accessed via Blackboard. It is strongly recommended that you read the suggested material before the lecture to understand the concepts thoroughly. I will definitely be adding more material in the class lectures that is not in the book. You are responsible for material covered in class and the material in the book.

Optional Text: An Introduction to Applied Multivariate Analysis with R, by Brian Everitt and Torsten Horhorn, Springer, 2011. I have a number of other texts on reserve in the Langsam library.

Attendance Policy: Attendance and participation in class is critical to understanding the material. I will be covering material not in the book and class notes are important for these topics. Please arrive ON TIME and be prepared to participate in the day's activities. If you miss a class, it is YOUR responsibility to get the notes and read the topics covered. Failure to attend a class does not constitute an automatic extension from exam or quiz. I DO NOT GIVE MAKE-UP TESTS SINCE I COME TO CAMPUS ONLY ON CLASS DAYS.

Class Participation: Participation is important for students who are on the borderline. Students will not receive participation credit just by attending class but engaging on mobile devices, cell phones, PDAs, etc. or doing e-mail. CELL PHONES SHOULD BE SWITCHED OFF DURING CLASS.

Academic Integrity Policy: Academic integrity policy will be enforced. Any violation of the regulations, including acts of plagiarism or cheating, will be dealt with on an individual basis according to the severity of the situation. Plagiarism is an attempt to pass off another writer's work as one's own and this includes copying literally from a website. Submitting work not written by oneself or supplying work to another person for that purpose will result in receiving a failing grade for the course.

Course Objectives: The objective of this course is to teach topics of multivariate statistics that are used in business decision making. The emphasis of the course will be on applications and use of several statistical software packages for analyzing data. Though matrix algebra is not a prerequisite, familiarity with matrix algebra and being comfortable with matrices will be a definite advantage. I believe that multivariate statistics cannot be well understood and explained without the use of matrix algebra. One of the main objectives is to get you equipped for the data analysis job market. At the end of the course you will be able to:

- i) Be able to translate management problems into feasible research questions
- ii) Understand how to design and conduct in-depth statistical analysis
- iii) Be able to do client consultation and create analytical deliverables
- iv) Be able to use multivariate software packages (SAS/SPSS/R) to conduct appropriate multivariate statistical analysis and communicate results with clarity
- v) Be competitive in the job market (especially in data analysis and marketing research field) with knowledge of multivariate statistics and related software
- vi) Effectively communicate the insights obtained from marketing analytics projects into actionable results for top management

Grading: There will be a mid-term exam, project work, in-class quizzes and a final exam. The mid-term and final will be an in-class exam. The final will be during the exam week. These will be weighted as follows:

Mid-term	45%
Graded Homework/participation.....	10%
Final	45%

In-class exams will be closed-book and closed-notes. You can bring a one page "cheat sheet" per topic which should be turned in with the exam. The final grade will be based on the total and a letter grade of A, A-, B+, B, etc. will be assigned at the end of the course. If you do not "participate" in class you need to demonstrate understanding of the material in other ways.

Computer Analyses:

Extensive use of computers will be made for the purpose of data analysis. SAS, SPSS and R will be the software tools used in class and I assume you will have access to these software programs either at school, work or at home. Basics of SAS, SPSS and R will be taught in class, but, I will assume you have some familiarity with computing (creating and reading data files, etc.) If you want to use alternate software such Stata, or MATLAB you are welcome to use, but you will be on your own. The exams will use SAS, SPSS and R. SAS is available on the VMWare portal and can also be purchased at the bookstore; R can be downloaded from <http://www.r-project.org/> and trial version of SPSS can be downloaded from <http://www-01.ibm.com/software/analytics/spss/products/statistics/trial-software.html>

TOPICS TO BE COVERED

Date	Topic	Reading Material
Week 1	<u>Overview of Multivariate Methods and Software</u> ---set the stage for the semester	Chapter 1 & 2
Week 2	<u>Principal Component Analysis</u> ---understand how to reduce multivariate data to fewer dimensions	Chapter 4
Week 3	<u>Exploratory Factor Analysis</u> ---understand how common themes may be present in survey questions and interpret them	Chapter 5
Week 4	Mid-Term	Closed Book/Cheat Sheet
Week 5	<u>Cluster Analysis</u> ---understand how market landscape is divided into segments	Chapter 8
Week 6	<u>Multidimensional Scaling</u> ---understand how products and brands are perceived by consumers	Chapter 7
Week 7	Final Exam	Closed Book/Cheat Sheet