

MGT/P/B 293 – Marketing
Analytics UC Davis Graduate School of
Management
(Tentative) Syllabus - Fall 2016

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Course Description

Marketing analytics can extract insight from data, and that insight can inform action. This course is designed to provide you with a solid understanding of the broad array of analytical tools and types of data available to marketers. More importantly, however, it is designed to help you learn how patterns in data can help you answer questions pertinent to marketers.

Marketing managers are often tasked with making decisions. For example: How much advertising should we conduct? Should we offer a temporary price reduction? Which consumers should we target? These decisions often rely on insights generated from empirical analysis. In many cases, a manager will be tasked with a specific decision, and have available a dataset collected for the task at hand. The first objective of this course is to prepare you to use a wide array of analytical tools to extract insights from data, and use those insights to inform marketing decisions.

Often, however, a marketing manager's job is not that simple. At times, a manager may have decisions to make an insufficient data to make them. In such cases, s/he must know what data to collect. The second objective of this course is therefore to provide you with knowledge of a variety of data types, to prepare you for data collection.

Finally, a manager may have a different problem—they may have a wealth of data available to them, but be uncertain about what value can be extracted from that data. This scenario is becoming more and more common as data collection becomes easier. Firms routinely work with outside sources (consultants, academics) to help them maximally leverage the data they have. The third objective of this course is to train you to identify what insights can (and cannot) be extracted from datasets you have at your disposal. Put another way, you'll learn how to determine what can (and cannot) be logically deduced from the patterns observed in a dataset.

At the end of the day, no one marketing analytics course can provide experience with all analytical tools each student will use at their next job, as each person's work environment will differ. What a course *can* do is train each student how to *think* about marketing problems and data, in order to facilitate rapid emersion in their post-graduation analytics environment, and provide a foundation for making smart, data-driven decisions. That, at a high level, is the goal of this course.

Required Course Materials

Required Text: Principles of Marketing Engineering, 2nd edition
Gary L. Lilien, Arvind Rangaswamy, Arnaud De Bruyn
ISBN-10: 1412022525, ISBN-13: 978-1412022521

Required Software: Marketing Engineering for Excel
R Studio

Grading & Assignments

Grade Breakdown: Your grade will be determined by your participation in-class discussion and cases (40%), four cases/homework assignments (40%), and a final project (20%).

Team Participation: Most assignments will be conducted in teams. You will choose your own teams, though I reserve the right to assign students to a team should the need arise. A mid-quarter review of team participation will be conducted to ensure that team members are not shirking their responsibilities. If a team is not satisfied with a member's participation, that member may have their grade penalized, removed from the team, and/or be required to complete the remaining assignments alone (dramatically increasing the exiled member's workload).

Homework: An assignment is due at 9:00 am on the day of each odd-numbered class session except the first. Each team must write up their results for three of the four assignments, and present their results for the fourth (to be determined randomly). Write-ups must be no longer than two pages (single-spaced, size 11 Calibri font), excluding tables and figures (all of which should be in an appendix after the write-up). Presentations should be 12-15 minutes long.

Final Project: Teams will also work on a semester-long project of the choose-your-own-adventure variety, which will culminate in a 20-minute presentation on the last day of class. You have two options. Option 1: Collect data from a firm (potentially one you are affiliated with) and examine a problem of interest to them. The firm must be willing to let you present your results with the class. Option 2: Research a topic in analytics (from a list to be provided by Mike) and teach the rest of the class what you have learned. You will receive guidance from Mike regardless of which option you choose. Preliminary project topics must be proposed by Monday, 10/10 at 9:00 am. Mike will approve your plan or ask for revisions. You should communicate with him informally before that deadline, however, in order to ensure you're headed in the right direction.

Course Schedule

Module	Week	Topic	Davis	Sac	Bay Area
		Class room:	GH-2310	MC-2205	BR-1502
		Time:	12:10-3:00	6:00-9:00	9-12, 1-4
Analytics Basics	1	Introduction to Analytics and R	09/21	09/21	10/01
	2	Measuring effects with imperfect data	09/28	09/28	
Heterogeneity	3	Targeting individuals	10/05	10/05	10/15
	4	Segmentation	10/12	10/12	
	5	Positioning	10/19	10/19	10/29
Consumer Choice	6	Promotions & intertemporal choice	10/26	10/26	11/12
	7	Choice modeling	11/02	11/02	
	8	Search and consideration sets	11/09	11/09	12/03
	9	Loyalty Programs	11/16	11/16	
Review	10	Final Projects + Course Review	11/30	11/30	

Schedule of topics and assignments

Module	Week	Topic & subtopics	Assignments Due
Analytics Basics	1	Introduction to Analytics and {R}	
		Course overview	Install R & R Studio
		Coding in R	Read PME Ch. 1
		Regression review + advanced topics	
Heterogeneity	2	Measuring effects	
		Experimentation & primary data	Read assorted articles
		A/B testing in digital marketing	
		Measuring effects with secondary data	
Heterogeneity	3	Targeting individuals	
		Secondary data: demos & purchase history	Advanced Regression HW
		Identifying heterogeneity	Read assorted articles
		Online recommendation systems	
Heterogeneity	4	Segmentation	
		Segmentation	Read PME Ch. 3
		Targeting	
Heterogeneity	5	Positioning	
		ConnecTor case - presentations & recap	Turn in ConnecTor Case
		Positioning and competition	Read PME Ch. 4
Consumer choice	6	Promotions & intertemporal choice	
		Promotions and substitution patterns	Read PME Ch. 7, pp. 176-192, 205-212
		Dynamic pricing & price discrimination	Read assorted articles
	7	Choice modeling	
		Blackberry case - presentations & recap	Turn in Blackberry Case
		Random utility theory and choice	
		Modeling static choices	
Consumer choice	8	Search and consideration sets	
		Consideration sets & heuristics	Read assorted articles
		Online and offline consumer search	
Consumer choice	9	Loyalty Programs	
		ABB Electric case - presentations & recap	Turn in ABB Electric Case
		The goal-gradient hypothesis	
		Loyalty programs & competition	
Review	10	Final Projects + Course Review	
		Final projects	Final Project Presentations
		Course review	

Course Policies

A few simple policies that all pretty much revolve around the general rule of “respect your classmates”:

- (1) Laptops should be brought to class each day, but should only be open when we’re working on an in-class assignment requiring it to be on (Mike will let you know when to open and close your laptops), so as to not distract your classmates. I was a student here long ago—and I remember students being annoyed by flashing G-chat windows on others’ computers. Similarly, phones should not be used during class in any capacity.
- (2) Don’t cheat or plagiarize. It’s not a victimless crime—in the case of group work, your actions could harm others if caught, and in the case of individual work, you’re screwing with the grading curve.
- (3) Be on time. Showing up late distracts others when they’re trying to pay attention to the course, and will leave you less prepared for group work if you need your teammates to catch you up on what you missed.
- (4) Do the assigned readings before class, so you can contribute to the conversation. The best classes are the ones in which all students are active in discussions. This is in part because speaking up helps you retain things in your memory, and in part because what others have to say (e.g., a real-world marketing example shared by your classmate) helps provide depth to your learning environment.

Preliminary list of final project (option 2) topics

Below are a list of topics you may be interested in pursuing for your final project. Some of these are clearly (and solely) analytics-based (e.g., missing data). Others are general marketing topics for which you’ll need to identify an analytics focus (of which many are potentially available):

Missing Data and Data Fusion
Word of mouth and peer influence
Pulse advertising, memory, and awareness
Freemium products and network effects
Website paywalls versus advertising as a revenue source

You may propose other topics you find interesting as well, so long as you can identify an analytical approach to teach us during your final presentation.