MSIN0041 Marketing Science
2021-2022

Lecturer:	Dr Adam Smith
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Office Hours:	Thursday 10 - 11am (Zoom)
	or by appointment (https://calendly.com/adamnsmith)
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Module Description

Marketing professionals have long used data to measure campaigns and make marketing decisions. But with the advent of new channels and devices, marketers now have access to an unparalleled amount of data. Marketers need a more systematic way of analyzing data, unearthing insights, and using those insights to improve business outcomes.

Marketing Science revolves around understanding complex market dynamics and using various tools to predict outcomes and recommend actions. Marketing scientists exhibit broader collaboration across the business, greater impact on customer engagement and a more pervasive culture of data-driven decision-making.

The aims of this module are:

– To provide students with an understanding of key ideas and concepts in marketing.

– To expose students to the range of marketing problems that leading companies are addressing with scientific approaches and the results they are achieving.

– To provide students with practical experience of working with the range and types of data, models, and tools used in marketing science.

Meeting Times

– Online Lecture: Thursday 11am - 12:30pm

– In-Person Workshop: Wednesday 9 - 10:30am (Group A), 11am - 12:30pm (Group B)

Assessment

1. (Term 1) Coursework – 10%

2. (Term 1) Group coursework – 30%

3. (Term 3) Exam – 60%

Important Dates

– Individual Assignment 1: assigned on Oct 13 and due on Oct 27

– Individual Assignment 2: assigned on Nov 3 and due on Nov 17

– Group Project: form teams by Nov 17

– Group Project: in-class presentations on Dec 16

– Group Project: report due Dec 17

Required Materials

– RStudio

– All required reading to be posted on Moodle

Schedule

Oct 6	W	Workshop	**Introduction to Marketing**
Oct 7	Th	Lecture	**Products** Topics: product lines, branding, product design, A/B testing, conjoint analysis Methods: choice models, Bayesian hierarchical models
Oct 13	W	Workshop	(Case Study) "Apple vs. Samsung: The $2 Billion Case"
Oct 14	Th	Lecture	**Pricing** Topics: pricing strategies, price elasticities, price endogeneity bias, prospect theory, anchoring, left-digit bias Methods: regression analysis, regression discontinuity designs
Oct 20	W	Workshop	(Research Paper) "Using Big Data to Estimate Consumer Surplus: The Case of Uber"
Oct 21	Th	Lecture	**Price Discrimination** Topics: 1st/2nd/3rd degree price discrimination, welfare effects, fairness Methods: regression analysis, regression discontinuity designs
Oct 27	W	Workshop	(HBR Article) "How Targeted Ads and Dynamic Pricing Can Perpetuate Bias"
Oct 28	Th	Lecture	**Promotions** Topics: channels, online ad auctions, selection bias, experiments Methods: Rubin causal model, causal inference with observational data
Nov 3	W	Workshop	(Case Study) "Rocket Fuel: Measuring the Effectiveness of Online Advertising"
Nov 4	Th	Lecture	**Group Project**
Nov 10	W	Workshop	Reading Week – No Class
Nov 11	Th	Lecture	Reading Week – No Class

Nov 17	W	Workshop	**Group Project**
Nov 18	Th	Lecture	**User Generated Content**
			Topics: text as data
			Methods: topic models (LDA), word embeddings
Nov 24	W	Workshop	(Case Study) "Have Text, Will Travel: Can Airbnb Use Review Text Data to Optimize Profits?"
Nov 25	Th	Lecture	**Segmentation, Targeting, Positioning**
			Topics: segmentation examples, targeted pricing, perceptual maps
			Methods: K-means clustering, choice models
Dec 1	W	Workshop	(Case Study) "Artea: Designing Targeting Strategies"
Dec 2	Th	Lecture	**Customer Lifetime Value**
			Topics: CLV math, modeling retention rates, firm valuation
			Methods: Beta-Geometric models
Dec 8	W	Workshop	(Case Study): "Blue Apron: Turning Around the Struggling Meal Kit Market Leader"
Dec 9	Th	Lecture	**Group Project**
Dec 15	W	Workshop	**Group Project**
Dec 16	Th	Lecture	**Group Project Presentations**

Denotes required reading for workshop sessions