



## **MKT 402 – Introduction to Marketing Analytics – Fall 2023**

*Note: this syllabus is tentative; it will be updated throughout the semester. This version: July 31, 2023.*

### **Class Hours and Locations**

16508R: 10am Tuesday/Thursday

16509R: 12am Tuesday/Thursday

### **Professor**

Yanhao “Max” Wei, Marketing Department, USC Marshall

Office: HOH 618

Office Hours: by appointment OR approach after each class

E-mail: yanhaowe@marshall.usc.edu OR yanhaowe@usc.edu

### **Course Description**

The class covers skills needed for the analysis of consumer and product data that are growingly sought after in digital economy. The class revolves around several datasets as workshops on data-driven marketing topics, including pricing, advertising, demand forecast, segmentation & targeting, and product design. The class will introduce methods from statistics, machine learning, AI, and economics. The class seeks to provide students with a foundation on which they can further the skill development in this area on their own.

### **Learning Objectives**

At the end of the course, you should be able to: (1) read and summarize typical consumer and product data, (2) understand common data science methods used in analyzing consumer and product data, (3) apply these methods to data to support marketing decision making, (4) communicate the results of analysis clearly and logically to an audience.

### **Prerequisites and/or Recommended Preparation**

No formal prerequisites. Recommended Preparation: BUAD 310 or COMM 301 or PSYC 274 or MATH 116. A preliminary understanding of the following subjects will be useful but not required: (i) spreadsheet applications such as Excel or Google Sheet, (ii) basic descriptive statistics such as mean, variance, and histogram, (iii) programming languages such as Python or R.

## Required Materials

Readings will be assigned throughout the semester. We will be using Google Sheet and RStudio.

## Attendance

This is a residential class and in-person attendance is expected. Unless students provide an accommodation letter from USC OSAS requiring remote attendance, there is no option to attend class remotely (e.g., via Zoom).

Attending the classes is THE main component of this course. If you want to do well in this class, come to classes, follow the classes, and participate as much as you can. This course mainly consists of workshops (with only 4 lecture classes). So this is a mostly learning-by-doing course and participating in the workshops is crucial for mastering the materials.

If you have to miss a class for legitimate and unforeseeable causes, it is the responsibility of the student to make up for missed classes (e.g., meet with a classmate to review what was missed).

Several quizzes will be given in class throughout the semester. They enter your grade (see below).

## Class Forum

We will use Piazza ([www.piazza.com](http://www.piazza.com)). By the first week, I will have sent every registered student an invitation email. The forum is the place for you to make friends, set up groups, and help each other. I will use the forum to: (1) post class materials, (2) make class announcements, and (3) answer/discuss questions. So make sure to check the forum regularly.

When you have a question, please seriously consider using Piazza before sending emails. This way, others can see my answer, and you can benefit from the questions asked by others on Piazza too. However, use email if there is anything private that you want to communicate with me.

## Grading Policies

The various components of the course grade are weighted as follows:

	Points
3 Exams	60 (20+20+20)
Group project	20
Quizzes	10
Participation	10
TOTAL	100

## The Exams

Details about each exam will be explained in class. Make-up tests are allowed only in rare circumstances and must be approved by me beforehand. Make sure you are available to take the exams on the scheduled dates. Taking the final exam early is not an option. Please discuss

any scheduling conflicts with me during the first two weeks of the semester. Challenges to exam scoring should be brought to my attention no later than one week after the scores are given.

### **Group Project**

Group project is worth 20% of your grade. Basically, we will analyze a dataset to derive useful insights for marketing questions. You can collect the data from any public source. A good place to start is Kaggle, where people post all kinds of sales or customer choice data. Before midterm we will use one class to decide which dataset to use. Each group will present and promote one dataset, convincing us why we should all work on that dataset. Then we will vote for one dataset that all groups will work on from then on. I would slightly encourage you to choose a rich dataset, i.e., many observations, quite a few variables, and ideally with (links) to unstructured data. A rich data will present much more opportunities for exploration. In contrast, a simple dataset limits the opportunities, typically leading to somewhat a dry presentation and overlap between groups.

A group should consist of 5-6 students. I will assign groups randomly.

The final presentation will be at the end of the course. Each presentation will be evaluated by me as well as other groups in the audience. One purpose of the group project is to learn collaboration, so group members receive the same grade for the group project. However, severe freeriding by a member, if reported by all other members of the group, will be penalized.

As to the group project, feel me to ask me clarification questions such as: can we use just a part of the dataset (yes), can we complement with external data sources (yes to some extent), should we focus on a single marketing question or try answering multiple questions (focus on 1-2 questions). However, I will refrain from answering questions on specific analysis, such as how to estimate the demand curve here, or why my regression does not work here. This is to be fair to the other groups.

## Course Calendar

\*Tentative schedule only! This version: July 31, 2023.

Calendar	Topic	Notes
Week of 8/21	Overview, Google Sheet, & R Workshop demo: Consumer Survey	
Week of 8/28	Lecture: Basic Statistics Workshop: Ad Effectiveness 1	
Week of 9/4	Workshop: Ad Effectiveness 2 Workshop: Ad Effectiveness 3	
Week of 9/11	Lecture: Linear Regression Workshop revisits	
Week of 9/18	Midterm 1 Workshop: Pricing Experiment 1	
Week of 9/25	Workshop: Pricing Experiment 2 Workshop: Pricing Experiment 3	
Week of 10/2	Group project data pick Workshop: Market Testing 1	
Week of 10/9	Workshop: Market Testing 2 <Fall recess>	
Week of 10/16	Workshop: Market Testing 3 Midterm 2	
Week of 10/23	Lecture: Logit Regression Workshop: Consumer Choice 1	
Week of 10/30	Workshop: Consumer Choice 2 Workshop: Consumer Choice 3	
Week of 11/6	Lecture: Neural Nets Workshop: Product Attributes 1	
Week of 11/13	Workshop: Product Attributes 2 Workshop: Product Attributes 3	
Week of 11/20	<Thanksgiving>	
Week of 11/27	Game: Location competition Final presentation of group project	
Week of TBA	Final Exam	

## **ADDITIONAL INFORMATION**

**Add/Drop Process** Please note that you may be dropped from this course if you miss the first two lectures. You can only add a class after the first week of classes if you receive approval from the instructor, per the academic policies described on our university website. See the “Academic Records and Registrar” website for specific add/drop and related deadlines (<http://arr.usc.edu/>). If you intend to drop, pay attention to the deadline that allows you to drop without a “W” on your transcript.

**Recording and Sharing** Please do not record any lecture, class discussion, or meeting with me without my prior express written permission. The word “record” or the act of recording includes, but is not limited to, any and all means by which sound or visual images can be stored, duplicated or retransmitted whether by an electro-mechanical, analog, digital, wire, electronic or other device or any other means of signal encoding. I reserve all rights, including copyright, to my lectures, slides, course syllabi, and related materials available to the students enrolled in my class whether posted on Blackboard or otherwise. They may not be reproduced, distributed, copied, or disseminated in any media or in any form, including sharing websites.

**Students with Disabilities** USC welcomes students with disabilities into all of the University’s educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at [osas.usc.edu](http://osas.usc.edu). You may contact OSAS at (213) 740-0776 or via email at [osasfrontdesk@usc.edu](mailto:osasfrontdesk@usc.edu).

**Statement on Academic Integrity** The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, compromises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university’s mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or “recycle” work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the student handbook or the Office of Academic Integrity’s website, and university policies on Research and Scholarship Misconduct.

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

**Open Expression** An important goal of the educational experience at USC Marshall is to be exposed to and discuss diverse, thought-provoking, and sometimes controversial ideas that challenge one's beliefs. In this course we will support the values articulated in the USC Marshall "Open Expression Statement" (<https://www.marshall.usc.edu/open-expression-statement>).

**Support Systems** Counseling and Mental Health - (213) 740-9355 – 24/7 on call Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

988 Suicide and Crisis Lifeline - 988 for both calls and text messages – 24/7 on call The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL) – 24/7 on call Free and confidential therapy services, workshops, and training for situations related to gender- and power- based harm (including sexual assault, intimate partner violence, and stalking).

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - (213) 740-5086 Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298 Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - (213) 740-0776 OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - (213) 740-0411 Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity and Inclusion - (213) 740-2101 Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC) A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to

explore options or paths to manage your concern.

Occupational Therapy Faculty Practice - (323) 442-2850 or [otfp@med.usc.edu](mailto:otfp@med.usc.edu) Confidential Lifestyle

Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.