



CS/STAT/BUS 315: Applied Data Science: Discovering Consumer Insights from Everyday Data Course Syllabus Summer Session I – 2026

Instructor: Francesca Hansstein, PhD

Credits: 3

Contact Hours: 45

Prerequisites: none

Class Meeting Days & Time: TBA

Office Hours: by appointment after a class or via Zoom (see Moodle site)

Course Type: Standard Course *or* Course with Service Learning component

Course Fee: TBA

Course Description

Why do people choose one brand over another? How do trends shape what we wear, eat, or watch? Why do people buy second-hand clothes? This interactive, beginner-friendly course explores how data can help us answer real-world questions and understand some typical consumer behaviors. Each session is built around a fun and hands-on research question, helping you uncover how data can challenge assumptions, offer objective insights, and improve everyday decision-making. Students will work with different types of data, surveys, social media, open datasets, and learn how to explore associations, describe data in a visually catchy way, spot central tendencies, and tell compelling and engaging stories. We will disclose the power of simple data tools to make sense of the world. Whether interested in music trends, brand loyalty, sustainability, or social buzz, students will develop a practical, creative toolkit to “make it count”—transforming everyday questions into meaningful insights. Throughout the course, students will use Excel or similar software to organize, analyze, and visualize data.

Learning Outcomes and Assessment Measures

Below are the course’s learning outcomes, followed by the methods that will be used to assess students’ achievement for each learning outcome. By the end of this course, students will be able to:

- *distinguish* between primary and secondary data, identifying appropriate sources for different types of consumer behavior research questions;
- *design* simple questionnaires based on behavioral theories and practical guidelines for data collection, with a focus on understanding motivations, preferences, and decision-making processes;
- *summarize* and communicate findings using clear, visually appealing tables and graphs, selecting the most appropriate formats for different types of data;
- *interpret* patterns and associations in consumer data using simple descriptive measures (e.g., frequency distributions, mode, median, mean) and association tools, translating data into actionable insights;
- *apply* basic behavioral concepts (e.g., decision fatigue, social proof, habits, cognitive biases) to frame research questions and interpret patterns in consumer data.

Course Materials

Readings

A course reader, including all the indicated readings, will be available. The course’s Moodle site is the primary location for readings and assignments.

Assessment

Attendance	10%
Activity n.1	20%
Activity n.2	20%
Research Project	35%
Course Journal	15%

Grading

Students are reminded that it is their responsibility to note the dates of exams and other assignments. No alternative exam dates will be offered, and professors are not required to give partial credit for any late work (they do so at their discretion; the Institute's default policy is no extensions and a zero for any work turned in late). Students who book travel when they have an exam or other assessment will have to change their plans or accept a zero. Letter grades for student work are based on the following percentage scale:

Letter Grade Range	Numerical Score Equivalent	Student Performance
A	93% - 100%	Exceptional Excellent
A-	90% - 92%	
B+	87% - 89%	Superior
B	83% - 86%	
B-	80% - 82%	
C+	77% - 79%	Satisfactory
C	73% - 76%	
C-	70% - 72%	
D+	67% - 69%	Low Pass
D	63% - 66%	
D-	60% - 62%	
F	59% or less	Fail (no credit)

Please note: decimal numerals between 1-4 are rounded down, while 5-9 are rounded up: e.g., expect 89.4 to be 89.0 while 89.5 to round up to 90.

Course Requirements

Grades are based on the following criteria.

Attendance (10%)

Attendance is an important part of this course. You have one "sick day," per Institute policy. As long as you are at all the other meetings, you will receive the full 10% for this part of your grade. There are no make-ups offered for attendance.

Activity 1 (20%) - Behavior by design: a mini-street survey.

This activity aims to design and test a simple questionnaire grounded in a consumer behavior concept. Each student will create a short survey (5 to 10 questions) focused on a topic of their choice, such as habits, social influence, price sensitivity, or brand loyalty. Students will then conduct a mini street-interview session, collecting responses from a small sample of locals, tourists, or fellow students. The emphasis is not on statistical significance but on practicing collecting and interpreting real primary data. Students are encouraged to reflect on and explore potential cultural differences in consumer behavior. Findings will be discussed in class. A detailed prompt with the instructions will be provided on Moodle well in advance.

Activity 2 (20%) - "Market Spy": comparing product pricing and strategies.

The goal of this activity is to observe and analyze pricing strategies and consumer cues in local stores and markets. Students visit at least two different types of shops (e.g., a supermarket and a small local food market, or a chain clothing store and a boutique) and collect data on how the same or similar products are priced and displayed. They will collect and analyze the following data: price differences for the same product, promotional

strategies with particular attention to some psychological pricing tactics, packaging, and brand cues. Findings will be discussed in class. A detailed prompt with the instructions will be provided on Moodle well in advance.

Course Journal (15%)

Students will use a notebook throughout the course, which they will use as a personal space to reflect on data output, data, graphs, or report extracts provided by the instructor. The supporting material will come from different sources, such as news, market reports, or institutional documents. Course journal topics will cover diverse fields such as education, health, and consumer behavior. This assignment aims to encourage students critically analyze the communication of easy-to-interpret statistics and recognize their significance in everyday life.

Final Project (35%)

For the final project, students will choose and explore a simple consumer behavior question using secondary data. They will write a 5-page maximum empirical paper including the following sections: background, research question(s), theoretical framework (*optional*), methodology, results, discussion, and conclusions. A detailed prompt will be made available on Moodle. The goal is to apply what students have learned in the course to investigate a real-world pattern, trend, or behavior, and present it in a clear, visual, and engaging way. The instructor will help and assist students in retrieving the relevant data, choosing from different sources like datasets, archived surveys, social media posts, publicly available research articles, etc.

Extension & Submitting Late Work

Work submitted after the deadline will receive a grade of zero, not partial credit. Each student is allowed one extension of 24 hours over the entire semester. This can be used for any assignment but the final project. Students need to email the instructor before the deadline and inform the instructor of their use of the extension. Any work submitted after the 24-hour extension will be marked zero. As for all policies, exceptions can be made by the Director for students with special accommodations or in case of medical emergencies, etc.

Attendance Policy

Attendance is expected and mandatory for classroom times and co-curricular activities. The first absence per course due to illness will be considered an excused "sick day" and does not require medical documentation. To receive additional excused absences due to illness, students are required to see a local physician or request a letter from an Institute-approved doctor documenting they should be excused from class for illness.

Unexcused absences will adversely affect a student's academic performance and will result in a reduction of the student's final course grade by 4% per absence up to a maximum of 10%. Excessive unexcused absences (4 or more, not including the excused "sick day") may lead to receiving a failing grade or disciplinary action. It is the student's responsibility to be aware of the number of absences or late arrivals for each course and to ask the instructor when in doubt.

If students miss class, they are responsible for obtaining class notes from other students and/or for meeting the professor during office hours. Any work missed in class because of an excused absence may be made up within one week of the return to the class. Any work missed that was a quiz or other test must be made up outside of class time and will, in the interest of intellectual honesty, be a slightly different test than the one given in class.

Presence during mandatory field trips is especially important. Missing a mandatory field trip for a course, unless for a very serious reason that is communicated to Umbra staff in a timely manner, will lower the students' grade by half a letter grade (i.e., a final grade of a B+ would be lowered to a B).

Legitimate reasons for an excused absence or tardiness includes: death in immediate family, religious observances, illness or injury, local inclement weather, medical appointments that cannot be rescheduled.

Students who request an approved absence to observe a religious holiday must submit a formal request to the Institute's Director within one week after the add/drop period when course schedules, including any field trips, are finalized. No exceptions will be made after this deadline.

Except in the case of medical emergencies, absences are not accepted when tests are scheduled; tests cannot be made up. Furthermore, scheduled times and dates indicated for exams, quizzes, oral presentations, and any other graded assignments cannot be changed for any reason. Even if more sections of the same class are activated, students may only take exams during the scheduled times and dates for the section they are enrolled in.

Tardiness Policy

Students are expected to attend all classes punctually. Any student arriving up to 15 minutes late or leaving up to 15 minutes earlier than the scheduled class end time will be marked as tardy. Each incident of tardiness (late arrivals to or early departures from class) is 1% off the final grade. However, should a student arrive more than 15 minutes late or depart more than 15 minutes before the conclusion of the class, it will be recorded as an absence.

Students are also expected to remain in class during the time of instruction except for a reasonable amount of time to use the restroom. Students who leave class and do not return during the class session will receive an unexcused absence or late penalty.

Academic Integrity

All forms of cheating (i.e., copying during exam either from a fellow student or making unauthorized use of notes) and plagiarism (i.e., presenting the ideas or words of another person for academic evaluation without acknowledging the source) will be handled according to the Institute Academic Policy, which can be found in the Umbra Institute Academic Policies and Conduct Guidelines.

Utilizing ChatGPT or other artificial intelligence (AI) tools for the generation of content submitted by a student as their own as part of any assignment for academic credit at the Institute constitutes a form of plagiarism.

Should the Institute become aware of a student's use of such platforms and services, the student will be subject to the same consequences and judicial proceedings as are in place for plagiarism (defined above).

Classroom Policy

Students are expected to follow the policy of the Institute and demonstrate the appropriate respect for the historical premises that the school occupies. Students are not allowed to use their cell phones or laptops while in class or during co-curricular events and activities, unless otherwise specified in the course syllabus or expressly permitted by the instructor for special learning. This policy also applies to earbuds and headsets. Students who do not respect these rules will be subject to disciplinary warnings and probation, be given an unexcused absence from class, and other disciplinary action including dismissal from the course.

Moodle

Please note that Moodle, not this syllabus, is the ultimate reference for due dates, assignment prompts, and course announcements. It is *the student's responsibility* to check the site regularly to be aware of announcements as well as to see and record all due dates for assignments.

Schedule of Topics, Readings, and Assignments

WEEK 1

Foundations of Data & Consumer Curiosity

Meeting 1: *From questions to data: making sense of everyday choices*

Meeting 2: *Primary or secondary? Finding the right data for the right insight*

Readings for the week:

- Cappelli, L., D'Ascenzo, F., Natale, L., Rossetti, F., Ruggieri, R., & Vistocco, D. (2017). Are consumers willing to pay more for a “Made in” product? An empirical investigation on “Made in Italy”. *Sustainability*, 9(4), 556.
- Renascence, *How Netflix Uses Data to Drive Hyper-Personalized Customer Experience (CX)*, (2024), available [here](#) (web article, about a 12-minute read)

WEEK 2

Design to Discover

Meeting 1 *Asking smart: the art of building questionnaires*

Meeting 2: *From ideas to items: behavioral concepts in survey design*

Readings for the week:

- Pew Research Center, Writing Research Questions, available [here](#) (web article, about a 20-minute read)
- Sepe, F., Valerio, M., Anna, P., & Mario, T. (2025). Fashion and sustainability: Evidence from the consumption of second-hand clothes. *Corporate Social Responsibility and Environmental Management*, 32(1), 947-962.

Assignments:

Activity 1- Behavior by design: a mini-street survey.

WEEK 3

Telling the Story with Visuals

Meeting 1: *Turning numbers into visual narratives*

Meeting 2: *Tables and fancy charts: what works best (and when)*

Readings for the week:

- Theocharis, D., Tsekouropoulos, G., Chatzigeorgiou, C., & Kokkinis, G. (2025). Empirical Categorization of Factors Affecting Online Consumer Behavior of Gen Z Regarding Newly Launched Technological Products and Moderating Impact of Perceived Risk. *Behavioral Sciences*, 15(3), 1-28.
- Kelly Gordon, Visual Design Hacks for the Non-designer, Nielsen Norman Group, available [here](#) (video, 4 minutes).

WEEK 4

Exploring Patterns and Making Meaning

Meeting 1: *What's typical? Exploring central tendency measures*

Meeting 2: *Preferences and patterns: understand how data shapes perception and influences choice*

Readings for the week:

- Bonaiuto, F., De Dominicis, S., Ganucci Cancellieri, U., Crano, W. D., Ma, J., & Bonaiuto, M. (2021). Italian food? Sounds good! Made in Italy and Italian sounding effects on food products' assessment by consumers. *Frontiers in Psychology*, 12, 1-30.
- Rancic Stefan (2025), 6 Psychological Pricing Strategies With Examples, Price2Spy, available [here](#) (web article, about an 8-minute read)

Assignments:

Activity 2 - “Market Spy”: comparing product pricing and strategies.

WEEK 5

From Insight to Impact: Applying What We’ve Learned

Meeting 1: *Learning from an empirical study & group work*

Meeting 2: *Final review and presentations*

Readings for the week:

- Pasek, J. (2012). Writing the empirical social science research paper: a guide for the perplexed. *Empirical Social Science Paper*, 1-13.

Assignments:

Final project presentations.