

Fall 2022 – 21712D
Tuesday, 6:30 - 9:50pm
Location: ANN 305

Instructor: Sailesh Patel
<https://www.linkedin.com/in/saileshjpatel/>
Office Hours: Tuesday, 5:30-6:30 pm or by
appointment
Office: ASC 321
Contact Info: saileshp@usc.edu

I. Course Description

This course is about data analysis and visualization. It aims to help graduate students understand the principles and techniques for extracting useful information and knowledge from data and hone their data-based storytelling skills for effective and engaging communication.

In this course, we will look at how data has transformed marketing in less than 20 years. Marketing today requires the ability to blend creativity and data in an agile way. This agility is not easy, especially as new technologies and media channels come into the marketing ecosystem. In this class, we will look at how data can be used to optimize all kinds of different marketing initiatives. This class will provide a bottom-up view of how to analyze and present different types of data. The course will also give a top-down view of how Chief Marketing Officers (CMOs) view the challenges around data and new mediums like search and mobile.

As part of learning data analysis and visualization techniques, you learn to use two best-of-breed tools that are used extensively in industry. Tableau is a data visualization tool that allows users to quickly build compelling visualizations. Alteryx is a “no code” data analysis tool that allows users to leverage the power of Artificial Intelligence (AI) techniques.

II. Student Learning Outcomes

By the end of this course, you should be able to do the following:

- Apply the CRISP-DM methodology in analyzing data.
- Use Alteryx to assess, cleanse, and analyze datasets.
- Develop a tolerance for ambiguity and nuances in marketing data.
- Examine how dominant players in media (e.g., Facebook, Google) are using AI as a competitive advantage.
- Apply AI techniques (supervised and unsupervised learning) in analyzing data sets.
- Analyze and develop strategies in digital marketing using search, social, and mobile data.
- Incorporate Shaffer's 4 Cs guidelines into data visualization.

III. Software Downloads:

Download the student version of Tableau (works on PCs and Macs including ones that have an M1 chip at this [link](#). Currently, we are unsure if it works with new M2 Macs). To get the student version of Tableau you may need to verify that you are a USC student by providing one of the following:

- USC Student ID
- Transcript showing you are enrolled in this class

Download the student version of Alteryx (works only on PCs. If using a Mac, you will need to get a monthly subscription to a Windows 365 virtual machine at this [link](#).) You will need to get a subscription for the version that has 8 GB of RAM. The cost of the subscription is \$45 a month. You will need the subscription for three months.

You can download the student version of Alteryx at this [link](#).

IV. Case and Readings

Some of the weekly readings will be articles from the New York Times and Wall Street Journal. To access these articles, you will need access to these publications through the USC library system.

You can download the case study and Harvard Business Review readings by clicking on the Harvard Business Publishing [link](#).

The approximate cost of the course pack is \$25.50. Note: You do not have to read the TIVO case in the Harvard Business Review readings. We are using anonymized data from that case for the dataset in your final project.

There are usually reading assignments and tutorial videos for you to watch every week (except for the final week). The reading materials and videos will be posted on Blackboard.

Students are expected to complete assigned readings before class and prepare for in-class discussions of the materials. Participation in discussion and response to the instructor's questions are part of the participation score. Assigned readings are not a substitute for the class nor is the class designed to summarize the readings. You will find a lot of materials in lectures that are not there in your readings (and vice-versa).

IV. Description and Assessment of Assignments & Assignment Submission Policy

Student performance in this class is evaluated based on assignments (individual and group), a final group project, and class participation.

Individual and group assignments involve running statistical analysis using Alteryx and creating data visualizations in Tableau. There is a final group project due at the end of the semester. It requires students to work in groups, analyzing data, identifying the story

behind the numbers, and sharing their stories/insights through communicative images and messages.

Assignment Submission Policy

Students will receive details about each assignment separately. All assignments need to be completed and handed in on time (by 4 pm of the due date) to avoid a grade reduction (12.5% reduction from the original point). If unable to turn in an assignment due to illness or a personal emergency, s/he must provide written documentation that will allow him/her to be excused, or discuss the situation with the instructor in a timely manner.

V. Grading

a. Breakdown of Grade

| Assignment | Points | % of Grade |
|---|-------------|-------------|
| Week 2: Individual Assignment 1/WestJet Case Analysis | 40 | 4% |
| Week 4: Individual Assignment 2/Tableau (Music Sales & Connecting to Excel) | 60 | 6% |
| Week 5: Group Assignment 1/Data Leaders | 125 | 12.5% |
| Week 7: Individual Assignment 3/Alteryx (Data Cleansing) | 50 | 5% |
| Week 8: Group Assignment 2/Segmentation | 75 | 7.5% |
| Week 9: Individual Assignment 4/Linear Regression | 75 | 7.5% |
| Week 10: Individual Assignment 5/Prediction Models | 100 | 10% |
| Week 12: Individual Assignment 6/Search Marketing | 75 | 7.5% |
| Week 14: Group Assignment 3/Geolocation | 50 | 5% |
| Week 15: Group Assignment 4/Final Group Project - Ecommerce | 250 | 25% |
| Class Participation | 100 | 10% |
| TOTAL | 1000 | 100% |

b. Grading Scale

Your percentage scores on the assignments will be totaled and translated to a letter grade per the scale shown below:

| | | |
|----------------|----------------|----------------|
| 94 to 100%: A | 80% to 83%: B- | 67% to 69%: D+ |
| 90% to 93%: A- | 77% to 79%: C+ | 64% to 66%: D |
| 87% to 89%: B+ | 74% to 76%: C | 60% to 63%: D- |
| 84% to 86%: B | 70% to 73%: C- | 0% to 59%: F |

Note: At the end of the semester, the total points will NOT be rounded up if your score is on the borderline between two different grades. For example, if you have 896 points your score translates to 89.6% which will be a B+. The score will not be rounded up to 90.0% or an A- grade.

c. Grading Standards

| Letter Grade | Description |
|--------------|---|
| A | Excellent; demonstrates extraordinarily high achievement; comprehensive knowledge and understanding of subject matter; all expectations met and exceeded. |
| B | Good; moderately broad knowledge and understanding of subject matter; explicitly or implicitly demonstrates good, if not thorough understanding; only minor substantive shortcomings. |
| C | Satisfactory/Fair; reasonable knowledge and understanding of subject matter; most expectations are met; despite any shortcomings, demonstrates basic level of understanding. |
| D | Marginal; minimal knowledge and understanding of subject matter; more than one significant shortcoming; deficiencies indicate only the most rudimentary level of understanding. |
| F | Failing; unacceptably low level of knowledge and understanding of subject matter; deficiencies indicate lack of understanding. |

d. Grading Timeline

Grading Timeframe and Missing or Inaccurate Score Inquiries/Disputes

For effective learning, students should receive timely feedback on assignments and exams. Therefore, every attempt will be made to grade assignments/exams and post grades within two weeks. Scores for all assignments and exams are regularly updated on Blackboard. You are responsible for notifying the instructor within one (1) week of a score posting if you think a score is missing or inaccurate. Moreover, you only have this period of time to contest a score on an assignment/exam. If you fail to inquire/notify the instructor of any discrepancy, missing score, or contest a score within one week of the date the score is posted, no further changes will be made.

e. Late Work

When assignment deadlines are missed, the late assignment will incur a 12.5% penalty per late day. It is your responsibility to know the due dates and to meet the deadlines.

Important note to students: Be advised that this syllabus is subject to change - and probably will change - based on the progress of the class, events, and/or guest speaker availability, where relevant. Students should consult the Registration Calendar for dates regarding add/drop deadlines, fees, grading options, etc.

VI. Schedule of Class Meetings

| | |
|---|--|
| <p>Week 1 August 23</p> <p>Topic(s): Course Introduction/Data in Marketing</p> | <p><u>Topics</u></p> <ul style="list-style-type: none">- Review of the course syllabus and instructor introduction.- History of data in marketing <p><u>Readings</u></p> <ul style="list-style-type: none">• ‘People are going to be shocked’: Return of the ‘shy’ Trump voter? Politico.• The five events that made data essential in marketing (download) |
| <p>Week 2 August 30</p> <p>Topic(s): WestJet Case and Tableau</p> | <p><u>Topics</u></p> <ul style="list-style-type: none">• WestJet Case Discussion• Introduction to CRISP DM• Introduction to Tableau• Groups assigned by Instructor <p><u>Readings</u></p> <ul style="list-style-type: none">• WestJet: A new social media strategy. <i>Harvard Business Review</i>.<ul style="list-style-type: none">◦ This reading is available in your HBR coursepack.• A beginner’s guide to industry standard process of data mining: CRISP-DM. Medium• Graph Selection Matrix Perceptual Edge. (download)• Quibi Was Supposed to Revolutionize Hollywood. Here's Why It Failed. Wall Street Journal• CMOs' Time in Their Posts Continues to Grow Shorter. Wall Street Journal <p><u>Individual Assignment 1</u></p> |

| | |
|--|---|
| | <ul style="list-style-type: none"> • WestJet Analysis due on August 30th by 4pm PDT • This assignment is a Credit/No Credit assignment. Therefore, all assignments turned in on time will receive maximum points. |
| | |
| <p>Week 3 September 6</p> <p>Topic(s): Tableau and Data Visualization Best Practices</p> | <p><u>Topics</u> Tableau Data Visualization Best Practices (#makeovermonday) Dashboards Group work time</p> <p><u>Readings</u></p> <ul style="list-style-type: none"> • See Blackboard for Readings <p><u>Videos</u></p> <ul style="list-style-type: none"> • See Blackboard for Tableau videos |
| <p>Week 4 September 13</p> <p>Topic(s): KPIs & Intro to AI</p> | <p><u>Topics</u> Data Analysis Frameworks (KPIs) Guest Speaker #1 Introduction to AI Group Work Time</p> <p><u>Readings</u> See readings in Blackboard</p> <p><u>Individual Assignment 2 and 3</u> (Due by 4 pm PDT on September 13th)</p> <ul style="list-style-type: none"> • Connecting Excel to Tableau • Music Sales Assignment • This assignment is a Credit/No Credit assignment. Therefore, all assignments turned in on time will receive maximum points. |

| | |
|---|--|
| <p>Week 5 September 20</p> <p>Topic(s): Data Leaders Presentations</p> | <p><u>Topics</u> How companies dominate with Data and AI</p> <p><u>Readings</u> - See Blackboard for Readings</p> <p><u>Group Assignment 1</u> - Group presentation deck is due by 4 pm PDT on September 20th</p> <p><u>Group Presentation 1</u> - Each group presentation is no more than 10 minutes long - Each member of the group must present at least one slide</p> |
|---|--|

| | |
|--|---|
| <p>Week 6 September 27</p> <p>Topic(s): Alteryx & Segmentation</p> | <p><u>Topics</u> Introduction to Alteryx Unsupervised Learning - Segmentation (cluster analysis) Guest Speaker #2 Group Work Time</p> <p><u>Videos</u> ● See Blackboard for Alteryx videos</p> <p><u>Readings</u> ● See readings in Blackboard</p> |
|--|---|

| | |
|--|---|
| <p>Week 7 October 4</p> <p>Topic(s): Linear Regression</p> | <p><u>Topics</u> Linear Regression</p> <p><u>Readings</u> ● See readings in Blackboard</p> <p><u>Individual Assignment 4</u> Data Cleansing Assignment due by 4 pm PDT on October 4th</p> |
|--|---|

| | |
|---|--|
| <p>Week 8 October 11</p> <p>Topic(s): Logistic Regression</p> | <p><u>Topics</u> Logistic Regression</p> <p><u>Readings</u></p> <ul style="list-style-type: none"> • See readings in Blackboard <p><u>Group Assignment 2</u> Segmentation Assignment due by 4 pm PDT on October 11th</p> |
| <p>Week 9 October 18</p> <p>Topic(s): Prediction Models</p> | <p><u>Topics</u> Prediction Models</p> <p><u>Readings</u></p> <ul style="list-style-type: none"> • See readings in Blackboard <p><u>Individual Assignment 5</u> Linear Regression Assignment due by 4 pm PDT on October 18th</p> |
| <p>Week 10 October 25</p> <p>Topic(s): Organic Search</p> | <p><u>Topics</u> Introduction to Organic Search Google Trends Group Work Time</p> <p><u>Readings</u> Relevant materials are posted in Blackboard.</p> <p><u>Individual Assignment 6</u> Prediction Models Assignment due by 4 pm PDT on October 25th</p> |
| <p>Week 11 November 1</p> <p>Topic(s): Paid Search</p> | <p><u>Topics</u> Paid search Cost Per Click Cost Per Acquisition Lifetime Value</p> <p><u>Readings</u> Relevant materials are posted in Blackboard.</p> |
| | |

| | |
|--|--|
| <p>Week 12 November 8</p> <p>Topic(s): Mobile</p> | <p><u>Topics</u> Mobile and Geolocation Group Project Work</p> <p><u>Readings</u> Relevant materials are posted in Blackboard.</p> <p><u>Individual Assignment 7</u> Search Marketing Assignment due by 4 pm PDT on November 8th</p> |
| <p>Week 13 November 15</p> <p>Topic(s): Social</p> | <p><u>Topics</u> Social Media Group Project Work</p> <p><u>Readings</u> Relevant materials are posted in Blackboard.</p> |
| <p>Week 14 November 22</p> <p>Topic(s): Class Review</p> | <p><u>Topics</u> Class Review Group Project Work</p> <p><u>Group Assignment 3</u> Geolocation Assignment due by 4 pm PDT on November 22th</p> |
| <p>Week 15 November 29</p> <p>Topic(s): Final Group Presentations</p> | <p><u>Group Assignment 4</u> - Group presentation deck is due by 4 pm PDT on November 29th</p> <p><u>Group Presentation</u> - Each group presentation is no more than 10 minutes long - Each member should roughly present the same number of slides.</p> |

VII. Policies and Procedures

Attendance and Punctuality

Graduate school is in many ways preparation or refinement for successful professional lives. Professional success depends on a range of skills and behaviors; one foundational behavior is showing up, on time and alert. So, come to class. Come to class on time. When

you are here, be here. Not being here (i.e., being absent or being late) will accumulate penalties. You are allowed one absence without penalty. Thereafter, each first unexcused absence costs 2% of the total grade (being late counts as half an absence). Being absent from more than three classes opens the possibility for more stringent penalties (e.g., the highest grade to be earned is a C).

Participation

Each student must contribute to the learning in this class. In most class sessions, you must speak, ask questions, argue respectfully. To do so, you must prepare well: read the assigned materials before class; read, view or listen to other relevant and interesting content; think. Staying silent is poor behavior. Silence is especially unacceptable when we have guest speakers. It sets a poor impression of being disengaged. Judgment of participation is based on the instructors' aggregate impressions gained throughout the semester. If you participate frequently and enthusiastically, you will earn the full score. You will not earn the full score by merely attending classes. Simply attending classes and only occasionally participating will result in a mediocre score (e.g., half of the possible score). If you are absent, disengaged or disrespectful, you will earn zero.

Additional Policies

There is no make-up for missed classes; the use of smartphones/social media for non-class-related issues should be kept to a minimum.

Communication

Students are encouraged to contact the instructor outside of class through email or Zoom. The instructor normally replies to emails within 48 hours.

Statement on Academic Conduct and Support Systems

Academic Integrity Policy:

The School of Communication maintains a commitment to the highest standards of ethical conduct and academic excellence. Any student found responsible for plagiarism, fabrication, cheating on examinations, or purchasing papers or other assignments will be reported to the Office of Student Judicial Affairs and Community Standards and may be dismissed from the School of Communication. There are no exceptions to the school's policy.

Academic Conduct:

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic

dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

In addition, it is assumed that the work you submit for this course is work you have produced entirely by yourself, and has not been previously produced by you for submission in another course, without the approval of the instructor.

Emergency Preparedness/Course Continuity in a Crisis

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies. See the university's site on Campus Safety and Emergency Preparedness.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu

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
usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776 dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs,

assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101 diversity.usc.edu

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

dps.usc.edu, emergency.usc.edu

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) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.

Annenberg Student Success Fund

<https://annenberg.usc.edu/current-students/resources/additional-funding-resources>

The Annenberg Student Success Fund is a donor-funded financial aid account available to USC Annenberg undergraduate and graduate students for non-tuition expenses related to extra- and co-curricular programs and opportunities.