USC Marshall
School of Business

DSO 599: Digital Analytics Strategy

Syllabus – Fall 2016 – Session 415 (7 weeks)
Wednesdays, 3:30-6:20 p.m. starting October 19, 2016
JKP 104

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Course Description

This course will give you a foundation for managing digital platforms by using web traffic and other behavioral data. You will learn how to build a digital marketing measurement model that maps business objectives to Key Performance Indicator metrics and defines the target audience segments for an e-commerce website.

A measurement model is essential before analyzing any data and formulating data-based findings and recommendations relevant to decision-makers. Without it, an analysis is just a report with data but no actionable insights.

Thus, each class will start with a discussion of a marketing or resource allocation question or problem that an organization faces. We'll then review what metrics would inform decisions the organization needs to make, exploring both standardized metrics and metrics available through customizing the tracking code and/or changing the site architecture. Finally, we'll retrieve the data from Google Analytics or other sources (e.g., Mail Chimp, Facebook Insights), clean it up and analyze the basic trends, and decide whether the metrics are truly Key Performance Indicators that belong in the measurement model.

This overview course is appropriate for students interested in working in digital analytics, product development, marketing, business analytics, and information architecture.

Learning Objectives

	Step	What you need to know	Grading criteria
1	**State the question about an opportunity or a problem that needs to be answered.**	An organization's strategy, or what it's trying to do and how it's trying to do it. Financial reporting periods relevant and perhaps unique to the organization.	Is the question specific and measurable? Are the target audiences well-defined? Is question essential to the org's strategy?
2	**Identify the data or metrics* that will help answer the question.**	How site traffic data is gathered, what metrics exist, what a specific metric does or doesn't indicate. How data can be segmented, or grouped.	Are the selected metrics relevant to the question? Are all possible metrics and ways of segmenting the data identified?
3	**Get the data from Google Analytics or other sources.**	Where to find the metrics you want. What default data is available, and what is available from other tools or if the tracking code is customized.	Were the correct data and segmentation used? Were the reporting periods (e.g., data by day vs. week; by month, quarter or year) relevant to the org's strategy and the question?
4	**Clean and organize the data using Excel and other tools.**	Basic database design, or how data should be put in a spreadsheet so it can be coded systematically and consistently with categories relevant to the org and the question.	Are the column and row labels correctly translated and formatted with unambiguous terms? Is the coding methodology transparent, i.e., is it clear why a piece of data got one code and not the other?
5	**Analyze the data using Google Analytics, Excel and PowerPoint.**	The quantitative calculations and qualitative assessments needed to compare, contrast and put the data into context. The difference between correlation and causation. How to use tables, charts and graphs to analyze trends, identify outliers, compare differences, etc.	Have the correct and relevant calculations and formulas been used? Are they transparent and replicable? Have all differences (e.g., the amount and the percentages) and outliers been put into context and interpreted appropriately? Have both the trends over time and the totals been considered?

		Knowledge of external events, e.g., holidays, relevant to an organization that might affect interpretation and analysis.	Are any trends or observations (e.g., increases and decreases, or lack thereof) a result of external events rather than an action taken by the organization?
6	**Present relevant, data-based findings and recommendations understandable to decision-makers.**	How your findings relate to the question. What data is missing that affects the strength and validity of your argument; what data is immaterial and thus not included. What tables, charts, graphs, infographics and formats present the data correctly and effectively. Terms the organization uses. Grammar, punctuation, spelling.	Is the question clearly stated and linked to the org's strategy? Are there findings drawn from multiple data points, not just basic calculations? Are the findings worded with the terms the org uses? Are hypotheses stated as such rather than as fact? Are any limitations or problems with the data identified? Are the recommendations based on the findings rather than personal opinion? Is the data in tables, charts and graphs presented properly and cleanly with no typos, confusing sentences, visual tricks or extra colors to distract from the info or affect your credibility as an analyst?

* Students will be able to describe and compare the conceptual purpose, technical definitions, limitations and assumptions of various types of **behavioral metrics,** including:

- **Basic content consumption metrics and segments**: Visits (or sessions); visits from new vs. returning visitors (or users); visits by geographic region. Weak and misused metrics: page views; unique visitors; time spent on site.

- **Visitor acquisition metrics**: Visits by traffic source (direct, search, referring sites, social media, campaigns); keywords; paid vs. organic search.

- **Visitor behavior metrics**: Bounce rates; landing pages; pages per visit; verbs of online actions; frequency and recency

- **Outcome metrics:** Macro- vs. micro-outcomes or conversions. Funnels.

- **Other digital platform metrics to be determined based on client objectives and strategy:** As this is a half-semester class, we will focus largely on website metrics. However, you will learn concepts that will help you identify and employ metrics on other digital platforms, each of which has its own unique behavioral metrics. For example, there are no "social media metrics," but there are Facebook metrics, Twitter metrics, Instagram metrics, etc.

Readings and Resources

The suggested readings will come from the books, blogs, whitepapers and other resources developed by practitioners, analytics vendors.

- **Avinash Kaushik, Analytics Evangelist, Google**. Advisory board member, USC Annenberg Media Impact Project
  - Web Analytics: An Hour a Day, Sybex/Wiley Publishing, 443 pages
  - Web Analytics 2.0, Sybex/Wiley Publishing, 475 pages
  - Occam's Razor, http://www.kaushik.net

  Your final project will be based on Kaushik's measurement model frameworks.

- **The Wall Street Journal Guide to Information Graphics/The Dos and Don'ts of Presenting Data, Facts, and Figures**, by Dona M. Wong, W.W. Norton and Company, 158 pages

  The charts, tables and other data visualizations in the homework assignments and final project will be assessed using the principles outlined in this book. I'll also be referencing the work of Edward Tufte and Stephen Few.

  You will be developing a dashboard wireframe as part of your final project. We will review Google Data Studio, which is a customizable dashboard interface for Google Analytics. However, your final project will be graded based on what's needed by the client, not on what's available in Google Data Studio or other tools such as Tableau.

- **Google Analytics Academy** videos and other materials produced by Google to prepare for the Google Analytics Individual Qualification certification

Laptop Policy:

Please bring a laptop that has Excel, PowerPoint and Internet access to each class. Note: Google Analytics works best with Chrome.

The assignments and the final project must be in Excel and PowerPoint, which are industry standards. Analysts collaborate across departments and organizations and always have to hand off their files. If you use Numbers, Keynote, Google Docs, Prezi or other software, you'll need to convert your files and fix any formatting problems.

Prerequisites and/or Recommended Preparation:
Students must be proficient in Excel and PowerPoint, and familiar with data analytics methodologies and functions such as converting raw data, employing pivot tables, assessing trends, determining significant differences, etc.

Course Notes:
Throughout the course you will have access to the Google Analytics data and other internal, proprietary information for one or more organizations. You will be required to sign a nondisclosure agreement, and to disclose any associations with the clients' direct competitors. You will be assigned to a different organization if a client doesn't approve your access.

All data, presentations and discussions in class with your fellow students and with the organizations are confidential. You can show prospective employers your assignments and projects if you strip out all identifying information.

Grading Policies:

a. Breakdown of Grade

Homework: metrics quizzes - individual (5)	**20%**
Homework assignments - group	**30%**
Final project - group	**40%**
Class participation, attendance and group peer evaluation	**10%**

Total	**100%**

Weekly metrics homework quizzes - individual
The weekly metrics quizzes on Blackboard will assess your knowledge and comprehension of the conceptual and technical definitions and applications of the metrics discussed in class and the readings. The quizzes will consist of multiple choice, multiple answer, calculated numeric and fill-in-the-blank questions.

Homework assignments – group
The group homework assignments will be first drafts or background research and analyses for components in your final project that explore your group's hypotheses on what the KPIs could be. There will be short answer questions will assess your group's ability to explain a metric to a client in an email or report.

Final project and presentation - group
The final consists of three components.

1. **A measurement model based on the current site architecture and data available**
   a. A one-page table that maps business objectives with KPIs, specifies the target audience segments as defined by measurable site behavior, and suggestions for baselines
   b. A wireframe or mock-up of how the Key Performance Indicators would look in a dashboard
   c. An infographic (charts and/or tables with 1-2 explanatory short paragraphs) analysis of the KPI data that justifies your recommendations on what the baselines should be
   d. A list of assumptions and caveats given the quality of the data available
   e. An appendix of structured data tables

2. **A measurement model the client would use if it changed the site's tracking code and/or site architecture** both to correct problems with the current state and to capture more relevant and insightful KPIs. This model would be the basis of an RFP if the client were to engage a digital analytics consulting firm.
   a. A one-page table that maps business objectives with KPIs and target audience segments
   b. Annotated screenshots of the current website page vs. the proposed changes or examples of how the site architecture and the current code are affecting the quality of the data and the ability to capture the right data
   c. A list of how the changes would be implemented in Google Analytics
   d. An assessment of which changes were the most important and urgent for the client to implement

3. **A 10-minute PowerPoint video presentation** (screen recording with audio narration)

   As a class we will select two or three groups to present their measurement models to the client live. The entire class will participate in the client Q&A.

Class participation, attendance and group peer evaluation
This class will give you experience with working on a digital analytics team. Thus, I'll expect your conduct to be the same as if you were on the job. Part of your course grade will be based on your coming to class on time, being prepared, and actively participating during the lectures and the group workshops.

You will also be required to submit a peer evaluation form (see the last page of this syllabus). All members of a team will receive the same grade on the homework assignments and group projects. However, I will adjust your individual grade if I've assessed that you haven't made an equitable contribution to the group work based on the peer evaluations and my observations.

b. Grading Scale

A	95-100	B+	87-89	C+	77-79	D+	67-69
A-	90-94	B	83-86	C	73-76	D	63-66
		B-	80-82	C-	70-72	D-	60-62
						F	<60

c. Grading Standards

Grading rubrics will be posted for each assignment on Blackboard.

Note: Grammar, punctuation, spelling, formatting and other components essential to effective communication and your credibility will account for 10 percent of every assignment and project.

A
The analysis is relevant, uses the correct data and is concise and complete. It identifies any assumptions that were used, data integrity issues, and issues that need to be further addressed (if any) before a manager can make a decision.

The analysis is targeted to a managerial audience, is clearly written and is free of spelling and grammatical errors. It includes relevant charts and graphs with explanatory text. There are no 3D or other types of graphs in formats that obscure the trends or data points. It uses the correct colors, data labels and font size, and has a plain white or otherwise unobtrusive background. The analyses are in a hard copy format suitable for discussion at a meeting.

B
The analysis is relevant, uses the correct data and is complete. It identifies assumptions that were used, data integrity issues, and issues that need to be further addressed (if any) before a manager can make a decision. The report and presentation have most, but not all, of the attributes of an "A" assignment.

C
The analysis is relevant and uses the correct data, but isn't complete; it's a recitation of facts rather than an analysis. It can be used for decision-making if a manager could deduce some of the issues on his/her own. The report and presentation have some of the attributes of an "A" assignment.

D
The analysis is relevant, but doesn't use the correct data and isn't complete. It needs further work before it can be used for decision-making. The report and presentation have only a few of the attributes of an "A" assignment.

F
The analysis isn't relevant, doesn't use the correct data and isn't complete. The report and presentation doesn't have any of the attributes of an "A" assignment.

Assignment Submission Policy
Homework assignments are due on Blackboard before the beginning of each class. All grades will be posted on Blackboard. You are also responsible for informing me within one week if you believe there's an error in an assignment grade that's been posted on Blackboard.

Late and/or incomplete assignments
Due to the shortness of the class, late assignments will not be accepted. Partial credit will be given for incomplete assignments.

ADDITIONAL INFORMATION

Add/Drop Process
This course follows the add/drop deadlines for a seven-week course. Students who want to add the course after the first week will need my approval. Students who miss the first classes may be asked to drop the course.

Academic Integrity and Conduct
USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own (plagiarism). 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. All students are expected to understand and abide by the principles discussed in the *SCampus*, the Student Guidebook (www.usc.edu/scampus or http://scampus.usc.edu). A discussion of plagiarism appears in the University Student Conduct Code (section 11.00 and Appendix A).

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: http://www.usc.edu/student-affairs/SJACS/ . Failure to adhere to the academic conduct standards set forth by these guidelines and our programs will not be tolerated by the USC Marshall community and can lead to dismissal.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* http://equity.usc.edu/ or to the *Department of Public Safety* http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report or can initiate the report on behalf of another person. *The Center for Women and Men http://engemannshc.usc.edu/cwm/* provides 24/7 confidential support, and the sexual assault resource center webpage https://sarc.usc.edu/reporting-options/ describes reporting options and other resources.

Support Systems

Students whose primary language is not English should check with the *American Language Institute* http://dornsife.usc.edu/ali, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* (www.usc.edu/disability) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* (http://emergency.usc.edu/) will provide safety and other updates, including ways in which instruction will be continued by means of Blackboard, teleconferencing, and other technology.

COURSE CALENDAR

	Topics	In-class workshop	Homework due the following week
Week 1: Oct. 19	**Measurement models and basic website metrics** Avinash Kaushik's analytics metrics lifecycle process, Web Analytics 2.0 framework, and digital measurement model framework. The role of content in driving sales; customer journey mapping Overview of the final project and the client Website metrics types: acquisition, behavior, outcomes Basic website metrics and segmentation in Google Analytics Audience Overview	• Meet in assigned teams. Decide who will be the group coordinator. Agree on weekly meeting times. • Review client website.	• Basic metrics quiz on Blackboard Group • Google Analytics Audience Overview analysis • Draft situation analysis, customer journey map and client visit question prep
Week 2: Oct. 26	**Target audiences and visitor acquisition metrics** **Guest speaker: Client** Product, content and marketing strategies, goals and target audiences. Current KPIs. Traffic sources: search, direct, referring sites (including social media), email. Landing pages Personas	Client Q&A	• Visitor acquisition metrics quiz on Blackboard Group • Visitor acquisition channel analysis • Personas

Week 3: Nov. 2	Search engine metrics Organic vs. paid search Branded vs. unbranded keywords Google Search Console vs. Google Analytics Google AdWords	Draft taxonomy; preliminary coding	• Search engine metrics quiz on Blackboard Group • Organic keyword analysis • Google AdWords analysis plan
Week 4: Nov. 9	**Visitor behavior metrics** Site- vs. page-level metrics Frequency and recency	Content groupings	• Visitor behavior metrics quiz on Blackboard Group • Content performance analysis
Week 5: Nov. 16	**Outcomes and conversions** Micro-conversions vs. outcomes Google Analytics events, goals and funnels Last-click vs. multi-channel funnel attribution	Micro-conversion and outcomes wireframe	• Outcomes quiz on Blackboard Group • Micro-conversion and outcomes outline for each persona • Funnel visualization
Week 6: Nov. 23	**No class - Thanksgiving break**		
Week 7: Nov. 30	**Final project workshop** **Other digital platform metrics if needed**	Draft both measurement models. Get sign-off from me.	
Optional: Dec. 7, 3:30-6:20 p.m.	**Optional final project workshop** Other days/times are available by appointment.		
Final: Monday, Dec. 12, 2-4 p.m.	**Review of final project recordings** **Client presentation (2-3 groups)** **Turn in final project package and peer evaluation form.**		

PEER EVALUATION FORM (form will be on Blackboard)
DSO 599 Digital Analytics Strategy

Criteria

1. Meetings: Attended all meetings and was on time and prepared.
2. Task completion: Completed all tasks as agreed and on time.
3. Contribution: Did his/her fair share.
4. Teamwork: Helped keep in-class group workshops and meetings on track. Respected each team member's expertise, opinions and effort, and helped resolve any conflicts.

Team Member	Points
You	_____
_____	_____
_____	_____
_____	_____
TOTAL	100 points

Comments (optional)

Form: Dr. Lan Luo