

COURSE SYLLABUS PROPOSAL

DATA VISUALIZATION AND STORYTELLING

Dale Fodness
University of Dallas (USA)

June 23 – July 4

Monday - Friday (9:00 am – 12:00 m)

*Saturday (9:00 am – 12:00 m)



UNIVERSITY
OF DALLAS

DESCRIPTION

The sheer amount, speed and variety of data available to business and society today can either overwhelm or drive breakthrough decision-making. Data visualization (the transformation of quantitative data into graphical information) is used in a wide variety of disciplines to transform data (big and small) into fuel for effective decision making through the powerful medium of telling stories with data. Being able to create and communicate data visualizations is key to data literacy and is quickly becoming a requirement for anyone in business, the sciences or public policy. This course provides an introduction as well as hands-on experience in data visualization and storytelling. Students will learn to analyze the context of data visualization, to identify, access and prepare data for visualization, to apply best practices in visual analytics, to design user-oriented visualizations based on essential cognitive and perceptual principles, and to create interactive dashboards and data stories that effectively communicate data insights to facilitate decision-making.

OBJECTIVES

By the end of this course, students will be able to:

- Describe the purpose, importance and uses of data visualization for various stakeholders
- Create static charts, interactive dashboards and data stories that effectively communicate the data's

trends, patterns and insights in an engaging way to meet stakeholder needs

- Find access and prepare appropriate data to use to create visualizations that address stakeholder needs
- Apply best practices for visual analytics, including choosing the right chart type for the situation and avoiding visualization techniques that can mislead
- Use visual and cognitive perception concepts and practices to help ensure comprehension of data visualizations and insights
- Design and create aesthetically pleasing data visualizations that adhere to best practices for user-oriented design
- Demonstrate the ability analyze, prepare, and present effective visualizations using a leading data visualization tool (Tableau) (although the basic principles and practices learned can be applied to any visualization software)

METHODOLOGY

This course is cooperative, collaborative, and community-oriented. Students are expected to assume significant responsibility for conducting inquiries, applying knowledge, and making meaning of what they have learned. In practice, this means less time spent on traditional classroom activities such as lectures and more time spent in class on activities that engage students in analysis, evaluations, problem-solving, and processing information (i.e., individual and group exercises, student-led software labs, and significant discussion involving giving and receiving feedback on individual and group work).

A significant amount of time that students spend completing their assignments (both in and outside of the classroom) will involve the use of visualization software. While the principles and practices of data visualization covered in this course are software-agnostic, the free version of Tableau Public software* (<https://public.tableau.com>) will be used for instruction, exercises and assignments.

*Please note that this must be installed on a computer that you bring to each class session, otherwise you will be unable to participate in classroom activities and complete the course assignments.

EVALUATION

Contribution to Learning (attendance & participation) 15%

Homework Assignments (3 @ 5%) 15%

Term Project Assignments (all completed with use of Tableau) 70% total

1. Prospectus and Data Plan (10%)
2. Preliminary Analysis and Discovery (15%)
3. Findings and Recommendations (20%)
4. Interactive Datastory (25%)

Due to Universidad de los Andes policies, the final grading system for all the 2020 International Summer School courses will be Pass/ Fail. Your final grade will be defined in accordance to the accomplishment of the course learning goals. The individual numerical grades will serve as a key input for the definition of the Pass/ Fail grade and feedback as follows:

60-100% of available points achieved – Pass

0-59% of available points achieved - Fail

PRE-REQUISITES

Students are expected to have a basic knowledge of descriptive statistics and some experience with Excel or other spreadsheet program. Programming experience is not required.