



# DATA VISUALIZATION & STORYTELLING

## **COURSE SYLLABUS** **Instructor: Andreas Munzel**

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### COURSE IN BRIEF

The ability to understand data and extract value from it presents a critical capability in today's data-rich world. Consequently, through lessons accompanied by examples and practical exercises, you will learn the foundations and principles of data visualization and embrace the power of data-enabled storytelling as a result of a detailed process. Moreover, learners will get an overview of different data representation types and develop skills to create trustworthy, accessible, elegant, and, thus, effective data visualizations.

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### COURSE LEARNING GOALS

By the end of this module, you will be able to:

- Embrace the power of data visualization and data-enabled storytelling in call-to-actions for audiences.
  - Understand that communicating effectively to drive change and value involves the skilful combination of three key elements: data, narrative, and visuals.
  - Apply conceptual foundations and data visualization principles through real-life examples and exercises.
  - Create trustworthy, accessible, elegant, and effective data visualizations.
  - Master the narrative structure of data storytelling and plan and design a data story.
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### TOPICS COVERED IN THE COURSE

Data visualization
Data presentation and representation
Storytelling with data
Preattentive features and attributes
Data visualization process

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### COURSE DESCRIPTION & ORGANIZATION

The module is structured into two parts: the first includes four video lessons that will set the visualization groundwork in preparation for the second part - a live session - focused on data storytelling.

The course will be partly delivered as an online course via the platform [courses.andreamunzel.com](https://courses.andreamunzel.com). Concise instructions to register and access the course will be provided in the beginning of the term.

The online course is organized in lessons including:

- Course videos: the videos have an approximate average duration of 25-30 minutes per lesson, explain the main concepts, and guide the student through the online course.
- Course materials: course notes and potential additional course materials will be provided in the lessons and can be downloaded by the student.
- Exercises and quizzes: for several lessons, students will need to answer quizzes or short exercises.

During the live session, students will be completing a storytelling exercise:

- In-class assignment: in addition to the online and live lessons, students will work on a data visualization and storytelling task.

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## COURSE OUTLINE

### Online Lessons

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#### VISUALIZING DATA

##### *Part 1 | Online Video Lessons and Exercises*

- Lesson 1.1 Welcome Session  
*[Warm-Up Task: find a "good" data visualization (or chart)]*
- Lesson 1.2 Introduction: Business' New Lingua Franca
- Lesson 1.3 How We See
- Lesson 1.4 Data Viz Process 1  
*[includes one exercise: Effective Visual Choice]*
- Lesson 1.5 Data Viz Process 2  
*[includes two exercises: Declutter and Focus Attention]*

### Live Session

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#### DATA STORYTELLING

##### *Part 2 | Live Session and In-Class Exercise*

- Section 2.1 Data Story: Exploration & Explanation
- Section 2.2 Learning from a Master Data Storyteller
- Section 2.3 Data Story Narrative
- Section 2.4 Data Story: Plan & Design  
*[includes one in-class exercise: Craft Your Data Story]*

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## COURSE MATERIALS

The instructor will provide all course materials via the instructor's online course platform. Correspondingly, provided lecture notes (i.e., presentation slides) should not be regarded as all that is necessary to understand the concepts and implement the methods.

To successfully achieve the learning outcomes, the course was carefully designed to help the student navigate through the different concepts. Participation in exercises and quizzes as well as the viewing of the course videos are mandatory.

Main references:

- Dykes, B. (2020): *Effective Data Storytelling - How to Drive Change with Data, Narrative, and Visuals*, John Wiley & Sons, Hoboken, NJ.
- Kirk, A. (2019): *Data Visualisation - A Handbook for Data Driven Design*, 2nd Edition, Sage, London et al.
- Nussbaumer Knaflic, C. (2015): *Storytelling with Data - A Visualization Guide for Business Professionals*, John Wiley & Sons, Hoboken, NJ.

Additional references:

- Berinato, S. (2016): *Good Charts - The HBR Guide to Making Smarter, More Persuasive Data Visualizations*, Harvard Business Review Press, Boston, MA,
- Kriebel, A. & Murray, E. (2018): *#Makeover Monday - Improving How We Visualize and Analyse Data, One Chart at a Time*, John Wiley & Sons, Hoboken, NJ.
- Wexler, S., Shaffer, J., & Cotgreave, A. (2017): *The Big Book of Dashboards - Visualizing Your Data Using Real-World Business Scenarios*, John Wiley & Sons, Hoboken, NJ.

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## COURSE PERFORMANCE EVALUATION

**Data viz exercises (50%):** the student's individual work throughout the lessons (videos progression, exercises) will be graded for completeness and quality of submitted responses. The instructor will provide individual feedback on submissions.

**In-class storytelling exercise (50%):** A 60-minutes small group data visualization exercise to put into practice data story and visualization principles and concepts.

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## EXPECTATIONS

- Students are expected to intensively go through the online course including videos, course materials, and exercises.
- Should questions come up, it is expected that students first discuss with their fellow students enrolled in the course to clarify open questions before contacting the instructor.
- The course organization into lessons enables the student to subjectively pace the learning experience and adapt learning to the student's personal organization. Several milestones will be defined and presented in the Welcome session. All online lessons should be successfully finished, including all exercises, before the live session.