# Data Science for Communication with Pitching Public Speak

## Prof. Rachele Sprugnoli; Prof. Giulia Magaldi

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

Data and data analysis are playing an ever increasing large role in our everyday life and data science is one of the fastest-growing disciplines with applications in various fields, including communication. This course aims at introducing the students to data science combining both theory and practice, using a hands-on approach. Core principles, methods, and technologies will be presented with a specific focus on unstructured data, i.e. the processing of natural languages.

*Part 1* (*Data Science for Communication*, dr. Rachele Sprugnoli)

At the end of the course, students will be able to understand the foundational ideas of data science, they will also acquire knowledge about the basic techniques for the computational analysis of texts, and use a set of softwares for Natural Language Processing.

*Part 2* (*Pitching Public Speak,* dr. Giulia Magaldi)

Students will learn how to visually shape data and information in a compelling and comprehensive way to target a larger audience. This second part will be focused on analyzing outstanding data visualization examples, as well as crafting a project using the knowledge acquired in the first part of the curriculum.

***COURSE CONTENT***

F*irst part* (*Data Science for Communication*, dr. Rachele Sprugnoli)

The topics covered by this part will be:

- introduction to data science;

- data collection and annotation;

- introduction to Natural Language Processing;

- principles of quantitative evaluation;

- ethical and social issues in data science.

In the *second part (Pitching Public Speak,* dr. Giulia Magaldi)we will take a closer look at data visualization projects that won prestigious awards. We will also take a look at the different kinds of presentations created everyday inside advertising agencies, and how they change based on the target to whom they are tailored for. Finally, students will be asked to work on some simulations. These exercises will then help them to prepare the presentation of the project work for the final exam.

***READING LIST[[1]](#footnote-1)***

*Part 1* (*Data Science for Communication*, Dr. Rachele Sprugnoli)

*Mandatory reading*:

* A selection of chapters taken from the following book: D. Jurafsky & J.H. Martin, *Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition* (third edition), Prentice Hall, 2008. URL: *https://web.stanford.edu/~jurafsky/slp3/*

*Suggested readings*:

* Ozdemir, S. (2016). *Principles of Data Science*. Packt Publishing Ltd.
* Shah, C. (2020). *A Hands-On Introduction to Data Science*. Cambridge University Press.

*Part 2* (*Pitching Public Speak,* dr. Giulia Magaldi)

*Suggested readings*:

- Giorgia Lupi, Stefanie Posavec, Maria Popova, *Dear Data,* Princeton Architectural Press e Particular Books, USA e United Kingdom, 2016.

- Marty Neumeier, *The Designful Company: How to Build a Culture of Nonstop Innovation*, New Riders Pub, Portland, 2008.

Examples, notes and presentations will be shared during this part of the class.

***TEACHING METHOD***

*Part 1 Parte 1* (*Data Science for Communication*, Dr. Rachele Sprugnoli): frontal lectures combined with practical exercises using the computer and guided by the lecturer. This part of the class will be in-person: depending on the COVID19 emergency regulation updates, this organization may vary.

*Part 2* (*Pitching Public Speak,* dr. Giulia Magaldi): practical sessions in which students will have to create their own data visualization projects. This task will come after:

- analyzing international examples that have been awarded in important advertising award events, as well as day to day projects;

- simulate data visualization projects.

This part of the class will be held entirely remotely.

***ASSESSMENT METHOD AND CRITERIA***

The exam consists of two phases, both of which are mandatory for all students:a project work and an oral exam in which the students will present their project work and will answer questions concerning the theoretical and methodological aspects of the course content.

As for the project work, students will be asked to carry out a practical project using at least one of the tools analysed in the first part of the course. Then, they will have to create and present a data visualization project in PowerPoint/Google Docs (whatever platform they feel more comfortable with) on the basis of the skills acquired in the second part of the course.

In the final assessment, the following criteria will be taken into consideration: (a) clarity and completeness of the presentation; (b) level of the practical skills learnt during the class; (c) ability to appropriately link topics that have been addressed in different parts of the course; (d) relevance of answers to the questions.

Both the lecturers will evaluate each student in relation to the two parts of the program: the final grade will be only one, based on a weighted average of the two scores: the first part *Parte 1* (Data Science for Communication, Dr. Rachele Sprugnoli) will weigh 80% and the second (*Pitching Public Speak,* dr. Giulia Magaldi) 20%.

***NOTES AND PREREQUISITES***

Students will have to understand, write and speak English; they will need basic knowledge of the computer; and they will have to be familiar with spreadsheet software (such as Excel or Google Sheets), PowerPoint, or Google Docs.

Due to the structure and content of class activities, students should use their notebook during lessons.

Students who are, for ascertainable and curricular reasons, unable to regularly attend the lessons will have to contact the lecturers at the beginning of the semester to identify a possible supplementary exam program.

*Office hours*

Dr. Rachele Sprugnoli will receive students in following ways: 1) at her office on the second floor of the Franciscanum building, 2) remotely, on Teams 3) at the end of the lessons. Students are asked to send an email in advance to *rachele.sprugnoli@unicatt.it* to make an appointment.

Dr. Giulia Magaldi will only attend students on Microsoft Teams, and appointments need to be scheduled in advance.

1. I testi indicati nella bibliografia sono acquistabili presso le librerie di Ateneo; è possibile acquistarli anche presso altri rivenditori. [↑](#footnote-ref-1)