# Introduction to Data Science

## //What's this course about?

In recent years, data analysis skills have become essential for those pursuing careers in policy advocacy and evaluation, business consulting and management, or academic research in the fields of education, health, and social science.

In this course, we'll embark on a journey through the modern data science workflow to prepare you for these challenges. Brace yourself for a thrilling ride as we dive into essential topics like version control with Git and GitHub, web data collection, database storage, and visualization. Get ready to engage with model fitting strategies, tackle advanced workflow challenges, and automate your way to efficiency.

But that's not all - we'll also equip you with the ethical compass needed to navigate the world of data science responsibly.

## //What are the main learning objectives?

The goals are to

1. Equip you with conceptual knowledge about the data science pipeline and coding workflow, data structures, data wrangling, and communication;
2. Enable you to apply this knowledge with the statistical software R, and
3. prepare you for other technical courses in the programme.

## //Which topics are covered in the course?

The current line-up of the course features the following sessions:

- What is data science?
- Version control and project management
- Data science ethics
- Functions and debugging
- Databases
- Web data and technologies
- Web scraping and APIs
- Tools for Data Science Workshop
- Modeling
- Visualization
- Automation, scheduling, and packages
- Monitoring and communication

## //Where can I learn more about the course?

The course follows the open source paradigm; thus, lecture slides and lab materials are freely accessible on the course's GitHub page.

In addition, one session of the course is run by the students themselves. In an onsite workshop in the School's MakerSpace, students teach each other tools for data science with R. Recordings and practice materials of this workshop are also published online. Check out materials from the previous years:

- IDS Tools for Data Science Workshop 2023,
- IDS Tools for Data Science Workshop 2022,
- IDS Tools for Data Science Workshop 2021.

## What have students said about the course?

**<>Incredibly well structured and good combination of lectures and assignments helping each other in order to understand the topics.</>**
MDS Class of 2024 student

**<>It is excellently structured and it follows all practical steps in strucuring and conducting data analysis in R. Simon has a great teaching style, covers a lot in one lecture but makes it understandable none the less.</>**
MDS Class of 2023 student

**<>Best university course I ever had overall!</>**
MDS Class of 2024 student

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