

MATH-663

Statistical consulting and collaborations

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Cursus	Sem.	Type
Mathematics		Opt.

Language of teaching	English
Credits	1
Session	
Exam	Written
Workload	30h
Hours	22
Courses	6
TP	6
Project	10
Number of positions	18

Frequency

Only this year

Remark

Postponed until further notice

Summary

Analyzing data for a collaborator or client is very different from working on your own research project ; not only do you need competences in statistics, you must also ensure good communication (both ways) in a multi-disciplinary environment, coordination of the work, and the management of everyone.

Content

During this highly-participative course, we will discuss how to collaborate efficiently with non-statistical clients. We will cover in particular the following topics:

Managing interactions with the client

Understanding the client's situation, needs and expectations:

- Adapting your way of interacting depending on the background, personality, and goals of your clients
- Managing expectations (including how to deliver bad news).

Performing efficient and professional statistical consulting

Tips and tricks, traps to avoid

- Effectively conducting the statistical analysis
- The statistical issues most commonly encountered during consulting sessions.
- Ethics and legal questions: data access, protection and retention; reproducibility; responsibility; authorships; etc.
- Useful tools to facilitate efficient consulting work

Delivering and communicating the results

- Writing reports
- Using tables, figures, graphs to communicate summaries of data and results
- Designing efficient data visualizations
- Explaining technical terms and concepts to a non-specialized audience
- Communicating common types of statistical results (p-values, risks, probabilities, etc.).

Additional topics of discussion can also be added depending on the interest of the participants. In particular, an optional discussion could take place on the different possible administrative frameworks for providing statistical consulting:

freelancing, self-employed, creating a company, etc., as well as topics such as invoicing.

The course will alternate between presentations (with discussions and questions) and practice of simulated consulting sessions. Participants will discuss statistical issues based on provided documents, but they will not need to perform actual data analyses during the course.

Evaluation: Credits for the course are obtained by active participation in the discussions and simulated consulting sessions, and in addition based on a statistical report oriented towards a specified client.

Learning Prerequisites

Required courses

- Knowledge of basic statistical methods up to the linear model
- Basic knowledge of R, and either LaTeX or Markdown