

BIO-449 Understanding statistics and experimental design

| Herzog Michael | | |
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| Cursus | Sem. | Type |
| Bioengineering | MA1, MA3 | Opt. |
| Civil & Environmental Engineering | | Obl. |
| Neuroscience | | Opt. |
| Sciences du vivant | MA1, MA3 | Opt. |

| Language of teaching | English |
|----------------------|----------|
| Credits | 4 |
| Session | Winter |
| Semester | Fall |
| Exam | Written |
| Workload | 120h |
| Weeks | 14 |
| Hours | 4 weekly |
| Courses | 2 weekly |
| Exercises | 2 weekly |
| Number of | |
| positions | |

Remark

The course is for MA students and in particular for PhD students.

Summary

This course is neither an introduction to the mathematics of statistics nor an introduction to a statistics program such as R. The aim of the course is to understand statistics from its experimental design and to avoid common pitfalls of statistical reasoning. There is space to discuss ongoing work.

Content

Sensitivity and Bias Statistical Power Bayes Theorem and Odds Ratio What the t-test measures Classical statistical tests Experimental design Fraud and misconduct of statistics

Learning Prerequisites

Required courses

Very Basic Mathematics