

**Instructor:** Dr. Florian Battke, Dr. Battke SCIENTIA, Life Science Services

**Date:** November 7-9, 2022

**Time:** 9:00-14:30 h

**Location:** ONLINE course

Please register with the school management.

### **COURSE OUTLINE**

#### **Introduction of basic statistical principles**

- Basic concepts of statistical data analysis
- General descriptive statistics

#### **Statistical methods**

- Background and requirements of statistical methods:
  - Distributions and test statistics
  - Confidence intervals
  - General method of hypothesis testing
- Applying statistical methods:
  - Basics of hypothesis testing

- Tests on outliers, Gaussian distribution and homogeneity of variance
- Parametric and non-parametric hypothesis testing
- Critical interpretation of test results
- Analysis of variance (one way ANOVA)
- Kruskal-Wallis / Friedmann test
- Post-hoc tests
- Two/three way ANOVA
- Correlation and regression analysis
- Linear and nonlinear regression
- Curve fitting and weighting
- Calibration curves
- Comparison of regression models

**plus exercises**