neu770 - Basics of Statistical Data Analysis

Module label
Basics of Statistical Data Analysis

Module code
neu770

Credit points
6.0 KP

Workload
180 h
(1.5 SWS Lecture (VO) Total workload 68h: 28h contact / 20h background reading / 20h exam preparation 2.5 SWS Seminar (SE) Total workload 113h: 28h contact / 20h background reading / 65h exercise solving)

Used in course of study
- Bachelor's Programme Physics, Engineering and Medicine > Aufbaumodule
- Master's Programme Biology > Skills Modules
- Master's Programme Neuroscience > Skills Modules

Contact person
Module responsibility
- Fabian Otto-Sobotka

Authorized examiners
- Fabian Otto-Sobotka

Entry requirements
Skills to be acquired in this module
+ Social skills
+ Interdiscipl. knowl.
++ Maths/Stats/Progr.
+ Scientific English

Upon successful completion of this course, students
have basic statistical competencies for understanding data
understand the main statistical methods and their practical use through application
can evaluate statistical methods regarding the qualities and their limits

Module contents
- populations and samples; exploratory data analysis through describing statistics
- elementary probabilities and random variables
- important discrete and continuous distributions
- estimating parameters through the method of maximum likelihood
- confidence intervals and classical significance testing
- pairs of random variables; distribution and dependence
- classical regression analysis
- basic use of the software R to apply those methods

Reader’s advisory
Will be available in Stud.IP

Language of instruction
English

Duration (semesters)
1 Semester

Module frequency
annually, winter term

Module capacity
unlimited

Moduleart
je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program
basic mathematical knowledge; une of probabilities
recommended in combination with neu720 Statistical programming with R

Vorkenntnisse / Previous knowledge

Examination
Type of examination
Time of examination
after the course
Length
written exam, 2h

Course type
Type of examination
Frequency
Workload attendance
Lecture
2.00
28 h
28 h
Seminar
2.00
56 h

Total time of attendance for the module
56 h