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 and understand the main statistical methods and their practical use through application. They 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

Links:
Language of instruction: English
Duration (semesters): 1 Semester
Module frequency: annually, winter term
Module capacity: unlimited
Modulart: ---
Lern-/Lehrform / Type of program:
Vorkenntnisse / Previous knowledge:
- basic mathematical knowledge; une of probabilities recommended in combination with neu720 Statistical programming with R

Examination:
- Time of examination: after the course
- Type of examination: written exam, 2h
- Course type:
  - Lecture: 2.00 SWS, 28 h
  - Seminar: 2.00 SWS, 28 h

Total time of attendance for the module: 56 h