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

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

Examination:
- Final exam of module: after the course
- Type of examination: written exam, 2h

Course type:
- Lecture: 2.00
- Seminar: 2.00

Total time of attendance for the module:
28 h
28 h
56 h