### Module Information

**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**
- 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  
- Module level: ---  
- Modulart: 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

**Examination**
- Final exam of module: after the course  
  - Type of examination: written exam, 2h  
  - Course type: Lecture  
    - Comment: SWS  
    - Frequency: 2.00  
    - Workload attendance: 28 h  
  - Seminar  
    - Comment: 2.00  
    - Frequency: 28 h  
    - Workload attendance: 56 h

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