**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](mailto:fabian.otto-sobotka@uni-oldenburg.de)

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

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<tr>
<th>Course type</th>
<th>Comment</th>
<th>SWS</th>
<th>Frequency</th>
<th>Workload attendance</th>
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<tbody>
<tr>
<td>Lecture</td>
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<td>28 h</td>
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<tr>
<td>Seminar</td>
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**Total time of attendance for the module** 56 h