UNIVERSITÄT WÜRZBURG
Julius-Maximilians-

Module title	Abbreviation
Biostatistics	06-TN-BS-222-m01

Module coordinator	Module offered by
holder of the Chair of Psychology I	Institute of Psychology

ECTS	Method of grading	Only after succ. compl. of module(s)
5	(not) successfully completed	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

Students who successfully completed this module will have acquired knowledge of and expertise in probability theory, frequentist statistics in a linear model framework. Topics covered will be: What is statistics, what are data, Intro to R, data wrangling, data visualization, probability, sampling, hypothesis testing, t-tests, ANOVA, regression, (generalized) linear (mixed) model, reproducible research, advanced (bio-)statistical methods. In addition, students will learn the statistical programming language R. At the end of the seminar, they will be able to wrangle and visualize data, carry out different statistical analyses, and write a report in R and RMarkdown.

Intended learning outcomes

Students who completed this module will have acquired important research skills: They will be able to independently develop a data analysis plan and generate a report using R. Specifically, they will know and remember different types of analysis, will be able to interpret results of these analysis, and implement the analysis in R. In addition, they will be able to identify which analysis is suitable for a given data set, differentiate between analyses, and critically evaluate the results. Furthermore, they will gain methods competence by learning how to program using the statistical programming language R. Using RMarkdown, they will be able to generate a reproducible report. The students will have gained increased social- and self-competencies by cooperating on the class report and increased self-efficacy in the application of statistical analysis.

Courses (type, number of weekly contact hours, language — if other than German)

V + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Translational Neuroscience (2022)