

Concise course texts

- Statistics I

Statistics deals with summarizing the information in observed quantitative data (descriptive statistics) and with to what extent results from a sample can be generalized to a population of interest (inferential statistics). In this course, basic knowledge of descriptive statistics (mean, standard deviation, frequency, proportion and correlation) is assumed, and the focus is on inferential statistics. A general introduction into the basic reasoning underlying statistical inference is given, and the two most common procedures, significance testing and estimation with confidence intervals, are explained. Specific applications of these procedures are given for the simple situations of comparison of means and comparison of proportions.

Literature:

Statistical Concepts (4th ed.), Lomax, R. G., & Hahs-Vaughn, D. L., ISBN 978-0-415-88007-7.

- Statistics II

Along the same lines as in Statistics I, in this course inferential procedures are described for more complex comparisons of means, as well as for methods relating variables to each other. Specifically, in this course first the analyses of means in one-way and two-way designs are treated, using the ANOVA model. Next, the concept of correlation between variables, as well as the concepts of regression of one variable on one or more other variables (Multiple regression) are introduced and treated in depth, along with the associated inferential procedures.

Literature:

Statistical Concepts (4th ed.), Lomax, R. G., & Hahs-Vaughn, D. L., ISBN 978-0-415-88007-7.

Applying regression & correlation, Miles, J., & Shevlin, M., ISBN 978-0-7619-6230-4.

C.J. Albers (2016), Inference for Correlations. Will be provided at the start of the course.

- Statistics III

Continuing where Statistics II ended, this course discusses some new topics as well as some known topics in more depth. The main topics are: multiple regression and ANOVA (more in depth), nonlinear regression, ANCOVA and Repeated Measures ANOVA. In this course, there is considerable emphasis on practical application, as is assessed by means of two paper writing assignments.

Literature:

Statistical Concepts (4th ed.), Lomax, R. G., & Hahs-Vaughn, D. L., ISBN 978-0-415-88007-7.

Applying regression & correlation, Miles, J., & Shevlin, M., ISBN 978-0-7619-6230-4.

- Research methods: theory and ethics

This course introduces and deepens experimental design and data analysis. On the basis of case studies, pitfalls in design are discussed. Emphasis is placed on finding the appropriate design for a given research question, the practicalities of data handling, and the ethical responsibilities of the researcher.

Literature:

Custom publication from McGraw-Hill, comprising the first 9 chapters from “Essentials of Behavioral Research Methods” by Rosenthal and Rosnow (ISBN-13:9780073531960) and the 13th chapter from Shaughnessy, Zechmeister, and Zechmeister’s “Research Methods in Psychology” (ISBN-13: 9780071310970).

- Research practicum

Students perform research under the guidance of a teacher, where the following skills are addressed:

- critically searching, reading and evaluating literature
- formulating appropriate research questions and hypotheses
- designing a quasi-experimental research project
- collecting data
- analysing data
- individually presenting the results, both in writing and verbally

Literature:

Jack R. Fraenkel, Norman E. Wallen & Helen H. Hyunn (2014). *How to design and evaluate research in education – International edition (9th edition)*. San Francisco State University, ISBN 9781259253928

- Test theory

This course gives an overview of the central topics that are important for understanding how tests are developed and validated. Topics include: historical developments and applications of tests, the administration of tests, reliability and validity, and new developments in the field of test construction.

Literature:

Psychological testing: A practical introduction (3rd ed), Thomas P. Hogan, ISBN 978-1-118-55412-8.

Additional texts made available online

- Qualitative research Methods

Students will become familiar with the basic principles of qualitative research methods, methods of data collection (especially interviews, observation, analysis of documents and analysis of visual data) and data-analysis (especially grounded theory coding, content analysis, discourse analysis).

Literature

Flick, Uwe (2014). *An introduction to qualitative research*. Edition 5 (Los Angeles: Sage). Part 1-6 (476 pages).

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