Technische Universität Dortmund
Fallstudien II / Case Studies

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Guidelines for writing the reports

Layout and length

The final layout is up to each student, but the following rules should be followed:

- sufficient correction margin on all four edges,
- line spacing 1.5x,
- not too small font size (e.g. 12pt for Times New Roman),
- uniform font throughout the report.
- Excluding the cover page, table of contents, tables, graphs, appendix and bibliography, the report should contain **up to 15** pages (depending on the project) of text and formulas.

Remark
The choice of word processing program for writing the reports is free, but LaTeX is recommended.

Structure of the report

The following list is a basic framework for the structure of scientific papers. This basic framework must be adhered to when writing the reports. The additional bullet points describe the content structure of the individual chapters. Subchapters can be created to structure the individual chapters.

- Cover page
  - Course name
  - Topic of the project
  - Names of supervisors
  - Names of the author and the other group members
  - Date
- Table of contents
  - List of all chapters (including subchapters if applicable), the appendix and the bibliography, each with the page number

Important remark

- The table of contents belongs on the second page.
- The table of contents only lists the pages on which a chapter begins, not those on which it ends.
- The length of the table of contents should be appropriate for the length of the report, e.g. not be too detailed.

- 1. Introduction
  - Motivation, brief description of content and goal of the project
  - Brief explanation of the approach to problem solving
  - Possibly a brief presentation of the key results
  - Overview of the individual chapters
- 2. Description of the problem
  - Description of the objectives of the project (content and statistical objectives)
  - Description of the data material
    - Type and size of the sample (census, stratification, etc.)
    - Type of data collection (planned experiment, observational study, questionnaire etc.)
    - Description of all variables (content meaning, units, etc.)
    - Discussion of data quality (missing values, measurement accuracy, etc.)
- 3. Statistical methods
  - Description of the statistical methods, models, etc. used and what properties they have (mathematical formulas are also required here)
  - Discussion of the underlying assumptions, justification of the assumptions or how they can be verified (mathematical formulas may also be necessary here)
  - Indication of the resources used (books, articles, software, ChatGPT, etc.)
- 4. Statistical analysis
  - If necessary, check of the underlying assumptions
  - Detailed presentation of the results, prepared with the help of tables and graphics
  - Interpretation of the results in relation to the problem

- 5. Summary
  - Brief repetition of the project question
  - Brief presentation of the most important results
  - Discussion of the results (possible conclusions, warning against misinterpretations etc.)
  - Outlook (open questions, indication of possible further investigations, etc.)

  Important remark
  The introduction and summary should be readable independently.

- Appendix
  - Program code structured according to the individual questions, which are given in headings
  - Other important tables and graphics

  Important remark
  When structuring the appendix, letters are used (and not numbers as in the „core“ of the report).

- Bibliography
  - List of all journal articles, books (including software manuals) and websites used for the evaluation in alphabetical order of authors.

  Important remark
  - Example of a textbook reference:
    Schumacher, M. and Schulgen, G. (2008). *Methodik klinischer Studien*. 3. Auflage, Springer, Berlin.
  - Example of a journal article:
    Byth, K., Cox, D. R., and Forder, P. (2006). Assessing the relationship between symptoms of allergic rhinoconjunctivitis and pollen counts. *Australian and New Zealand Journal of Statistics* **48**(4), 417-428.
  - For web pages, the date of the query must be given.
  - How to provide the used software is determined by the software. For example, R specifies how R should be cited using the command `citation()`, e.g. for R 2.8.1:

    R Development Core Team (2008). R: A language and environment for statistical computing. *R Foundation for Statistical Computing*, Vienna, Austria, `http://cran.r-project.org/`

References

- All works listed in the bibliography must appear in the text and vice versa.
- Within the report, references to a literature reference are made as follows: (Author year) or Author (year). If there are two authors, both must be given; if there are more than two authors, the short form (Author 1 et al. year) or Author 1 et al. (year) must be chosen. If there are several works by one author from the same year, they are additionally distinguished by letters after the year: (2005a), (2005b) etc. Example of the publications mentioned above:
  - (Schumacher and Schulgen 2008) or Schumacher and Schulgen (2008)
  - (Byth et al. 2006) or Byth et al. (2006)
- If facts are taken from a book, the relevant pages or chapters must be indicated in the reference, example: „ [...] The disjunctive normal form for the system reliability function is taken from Hartung et al. (2005, p. 756).“
- A reference must also be given for the software used. For example, „The statistical calculations were carried out with R 2.8.1 (R Development Core Team 2008)“.
- ChatGPT or similar programs are welcome to be used. But if they are used, they must be cited with sources and it must be mentioned where they were used.

Graphics and tables

- All graphics must have a caption and all tables must have a heading.
- Graphics and tables are numbered, e.g.: „Fig. 1.1: Title or explanation of the graphic“ or „Table 1.1: Title or content of the table“
- In the appendix, graphics and tables must also be numbered and contain a subheading or heading.
- Each graphic and table must be referred to at least once in the text (this also applies to those in the appendix). The corresponding number of the graphic or table is used (e.g.: „ In Table 1.1 the relationship between ...“).
- Graphics and tables should be self-explanatory. All axes should be labeled. Additional relevant information can be presented in a legend, for example.
- Graphics that are used to compare results should be displayed side by side or below each other with the same axes so that comparison is easy.

Further information

- In terms of language, precise and factual/scientific formulations should be chosen. The following should be avoided: „experience style“, colloquial language, filler words, too many repetitions of words and long, complex sentences.
- Quotations must be identified as such (indentation of the text, quotation marks, exact name of the book/article including page number) and must not consist of longer text passages. Copying longer text passages is not permitted!
- Copying text passages from other reports is also not allowed! Of course, the approach can and should be worked out in groups.
- Literature sources should be selected according to the following priority:
    1. Books
    2. Articles in specialist journals
    3. Articles in conference proceedings and doctoral theses
    4. Wikipedia
    5. Lecture notes
    6. Bachelor's, Master's, diploma theses
    7. Articles in popular science magazines or daily newspapers
    8. Other internet sources
- **Very important: All sources, including Internet sources, must be fully cited!**