

Guidelines for the design of scientific papers (seminar papers, theses, dissertations) at the TU Bergakademie Freiberg

These guidelines were adopted by the Senate Commission for Education and Young Academics on September 26th 1995. They give authors instructions for the writing of scientific papers.

1. General instructions for handling topics

All original data (weights, measurements, measurement charts, analyses, observations, data, etc.) are to be entered into a laboratory notebook with numbered pages and submitted on request to the supervising university lecturer. Laboratory notebooks, analysis maps, calibration curves, correspondence, computer printouts, materials to be retained (media, films, photographic plates, samples, specimens, etc.) are to be handed over to the supervising university lecturer on submission of the work.

2. Structuring the content of scientific papers

The basis for structuring the content of a scientific paper is the German industrial standard DIN 1422, part 4 of August 1986. Reference is made in this standard to other essential DIN standards for formal structuring. The work is to be subdivided into main sections, sections and subsections. Each subdivision except for the extract should have a sub-heading. As an outline the following scheme should be used:

Introduction: The introduction establishes the topic and clarifies the scope of the paper.

State of Knowledge: state of knowledge includes an overview of the relevant literature, including known experimental methods. The sources used are not only books, but also journals, conference proceedings and collections of articles (proceedings) and patent literature in the fields of science and engineering.

Representation of the approach, planning and conduct of investigations, calculations etc.: The description of the methods (experiments, calculations, deductions) must be so extensive that they can be reproduced by an expert. When using standardized methods or accurately described experimental processes, it is sufficient to indicate the source and possible deviations.

Presentation and discussion of the results: The individual results are clearly explained, vividly portrayed using tables, images and charts and compare the state of the art of science. New findings, and confirmation or refutation of previous conceptions, should be clearly visible.

Summary: In the summary, the task, the approach and the main results of the theses should be presented.

Appendices: (also referred to as attachments) The scientific paper can contain appendices, including measurement protocols, analysis data, compositions of raw materials and end products, methods of synthesis, sample calculations or programs which are necessary for an understanding of the work.

Theses: The theses for an academic paper must be attached separately to the paper. They encompass a compressed representation of the task, the results and conclusions of the work. The theses must be numbered. Within each thesis an essential reasoning with 1 - 3 sentences should be formulated.

3. Formal layout of academic papers

Page Format: white DIN A4 paper, edge: left 40 mm, top 25 mm, bottom 20 mm; continuous page numbering, page 1 is the title page (without showing that page number).

Font: If possible, 10 characters per inch, for example, Roman 10 or Courier 10. Characters of less than 1.7 mm in height are not permitted, even in images and tables.

Text design: The text must be written with a line-spacing of 1.5. Paragraphs always begin on a new line. Between a paragraph and a new heading there must be two blank lines. A main section always starts on a new page. A heading is followed by at least 3 lines, otherwise a new page must be started. Each heading of the text is followed by double line-spacing. If several headers follow each other, they are separated by double line-spacing.

Section numbers: according to DIN 1421, a threefold subdivision should not be exceeded. Example:

1st stage (main section)	2nd stage (section)	3rd stage (subsection)
1	2.1	2.3.1
2	2.2	2.3.2
3	2.3	2.3.3
4	2.4	2.3.4

(If the sections or subsections are very short, instead of subheadings, paragraph flags (indents, dashes) should be used.)

Tables and images (photos, drawings and diagrams) are continuously numbered and accompanied by captions above or below and a legend. They must be designed so that they can be understood without the accompanying text. Figures and tables should if possible be in the vicinity of the table described. For design reasons, the tables and figures can be classified at the end of the chapter or text. This should be done in the order in which they have been mentioned in the text. The page on which the image or table appears, is mentioned in the text. For images, DIN 19054 should be adhered to. Captions should be made horizontally without borders, near to the point they are describing. Folded images are to be avoided. In their place, the opposing sides can be used, wherein the margin is to remain blank. Tables are optionally divided, even if this means repetitions are necessary. Tables and images should preferably be arranged in the direction of the text and not perpendicular to the text. For photographic images, only the content relevant parts are taken; scales or objects of known size for comparison specify the scale. For reproduction, preferably original images or their parts are used. If images, especially photographic images, do not originate from the author, the author must observe the valid copyright.

Formulas, characters, units: are preferably typewritten. The size of parentheses should be chosen such that they clarify what part they bracket. DIN 1304 and DIN 1313 should be observed for formula symbols. Equations are numbered continuously. The International

System of Units and the sizes and symbols laid down in the norms should be used consistently. If in the literature measurement units no longer allowed are used, the measurement values cited in the paper should be additionally converted into SI units.

References: sources and citations must be shown in the text with the selected bibliography abbreviation or by a serial number, eg (Muller, 1994d) or (12). Each citation is without change, with all emphases and errors, to be reproduced in quotation marks. In the case of multiple authors, the first author with the addition of et al. is possible.

Examples: From K. Mayer et al (Mayer, 1993b) in the study of ...

From K. Mayer et al (9) in the study of ...

Not permitted is: From (9) in the study of ...

Lists: (each on a new page)

Contents: All titles of the sections and the related pages are to be listed, as well as the lists (except Contents)

List of special characters, symbols and abbreviations: special characters, symbols, abbreviations, etc. are along with their explanation to be ordered sensibly (alphabetically and by uppercase letters, lowercase letters, Greek letters and special characters) and listed. Regardless of such a list, they must be explained in the text at their first occurrence.

Lists of images and tables: A list each should be made for illustrations, tables and the like, which should have an appropriate heading. Figures, tables etc. should be listed according to their sequential number and provided with the page number on which they can be found in the paper.

Bibliography: The references in bibliographies have the form referred to in DIN 1505. The most important rules for citation lists are shown in examples in Appendix A. Before a citation, there is code or serial number freely chosen by the person citing. The citations must be listed alphanumerically according to the freely chosen code.

Appendices: are to be marked with a capital letter. In addition to the continuous page numbering, the pages of the appendix are marked with the appendix letter. In the appendix, figures, tables, references, etc. are numbered separately by adding the capital letter of the relevant appendix, e.g., Table C2 is the second table in Appendix C (i.e. the 3rd Appendix). On the contrary, Table 2 refers to Table 2 in the main text part.

Affidavit: An affidavit on a separate page should be attached to the 'Studienarbeit' (student research paper) or the 'Diplomarbeit' (diploma thesis) and read as follows:

Affidavit

I (we) hereby declare that I (we) completed this work without undue assistance from third parties and without using resources other than those indicated; thoughts taken directly or indirectly from other sources are designated as such. (If the paper resulted from group work, the individual contribution is to be labeled by specifying sections and pages.)

Place, Submission date

Signature (s) of the author(s)

(For a doctoral thesis Affidavit see Doctorate Regulations of TU BAF of December 12, 1994)

Acknowledgments: can be carried out (on a separate page), it is possible if support was received by individuals or companies in the form of grants, conducting trade fairs / studies / analyses, assistance in training, etc.

4. Literature for further instructions

Grieb, Wolfgang: Schreibtipps für Diplomanden und Doktoranden in Ingenieur- und Naturwissenschaften. (Writing Tips for graduate students in engineering and natural sciences.) Berlin; Offenbach: vde-Verlag 1991. - ISBN 3-8007-1698-4 (in German)

Appendix A

Bibliographic Description of Sources (examples)

Monographs

Zogg, Martin: Einführung in die Mechanische Verfahrenstechnik (Introduction to Mechanical Process Engineering) 2nd revised and extended edition Stuttgart: Teubner. 1987. - ISBN 3-519-06319-0 (in German)

Eberhard, Rolf (Eds.); Hünig, Rolf (Eds.) Handbuch der Gasversorgungstechnik : Gastransport und Gasverteilung. (Handbook of gas supply equipment: gas transport and distribution.) 2nd edition Munich: Oldenbourg, 1990. - ISBN 3-485-26122-3 (in German)

University Publications:

Ewe, Harald: Beitrag zur Entscheidungsunterstützung bei der Höchstlastoptimierung von Elektro- energiesystemen im Bergbau – Tiefbau. (Contribution to decision support at the maximum load optimization of electrical power systems in the mining industry - civil engineering.) Freiberg, Bergakademie, Department of Mechanical and Energy Engineering. Dissertation, 1990 (in German)

Standards

DIN 1460 April 1982 Conversion of cyrillic alphabets of Slavic Languages

Rights (patents, utility models, inventors certificates, etc.)

protection law EP 2013 B1 / 1980-08-06). Bayer. Pr. : DE 27 51 782 1977-11-19

Statutory provisions

Copyright Act (v. 1965) Section 54 paragraph 1 no. 4a
Patent Act (version of. January 2nd 1968) § 6

Journal articles

Effenberger, Heimut; Schweicke, Otto: The use of coal in the present and future. In Energietechnik 41 (1991), No. 10/11, pp. 363 - 369 (in German)

Book Contributions

Krull, Werner; Rothenberg, Hans F. : Wirtschaftlichkeit der Gasversorgung – Betriebswirtschaftliche Grundlagen. (Economics of gas supply – business fundamentals. In: Eberhard, Rolf (Eds.); Hünig, Rolf (Eds.): Handbuch der Gasversorgungs- technik : Gastransport und Gasverteilung (Handbook of gas supply technology: gas transport and distribution.) 2nd edition München: Oldenbourg, 1990 - ISBN 3-488-26122-3, pp 721-777. (in German)

Presentations at conferences / contributions from conference proceedings

Watzel, Gerhard V.P. ; Petrasch, Petr: Heutiger Stand bei der Stilllegung und Beseitigung von Kernkraftwerken in der Bundesrepublik Deutschland. (Current situation with the decommissioning and disposal of nuclear power plants in the Federal Republic of Germany.) In: RWE Energie Aktiengesellschaft: 11 Hochschultage Energie (Essen October 1st -2nd 1990). Essen: Verl. Peter Pomp, 1991. - Tagungsbericht, pp 83-99 (in German)

Research and development reports

Duelen, G.: Prague, K.-P. : Seidl, T. ; Swaczina, K. : Mathematische Grundlagen für die Bahnsteuerung von Industrierobotern (Mathematical foundations for the path control of industrial robots) / Fraunhofer Institute for Production Systems and Design Technology. Karlsruhe Nuclear Research Center Karlsruhe, 1982 (KFK-PFT-E6) - Research Report. BMFT support program, production engineering, project support healthier work life DFVLR-HdA, ID 01-VC 028 (in German)

Company Publications

DEGUSSA: Aerosol, Frankfurt, 1969 (RA6-3-8-369H) - company brochure

Personal communications

Naundorf, Wolfgang: TU Bergakademie Freiberg, Department of Chemical Engineering, Environmental Process Engineering and Agglomeration Technology, 09596 Freiberg, personal communication December 12th 1994