

## Guideline for seminar papers and bachelor/master theses

(Version 04/2023, ZT)

This guideline provides information on general requirements of the Chair of Environmental/Resource Economics and Sustainability for seminar papers and bachelor/master theses. Please note that the regulations according to the examination regulations of your study program are primarily binding.

### Content

1 Aim of a Scientific Work	2
2 Extent	2
3 Submission	2
4 Formatting	3
5 Language and Style	3
6 Literature Research	3
7 Structure	4
7.1 Cover Page	4
7.2 Table of Contents	4
7.3 List of Figures, Tables, Abbreviations, and Symbols	4
7.4 Introduction	5
7.5 Main Text	5
7.5.1 Structure of Chapters	5
7.5.2 Citations	5
7.5.3 Figures, Tables, and Formulas	6
7.6 Discussion & Conclusion	6
7.7 Appendix	7
7.8 Bibliography	7
7.9 Statutory Declaration	<b>Fehler! Textmarke nicht definiert.</b>
8 Creating Text with LaTeX	8
9 Oral Presentation of the Work	8

## 1 Aim of a Scientific Paper

A scientific paper aims to specifically answer a scientific question that has been chosen by the author. The work must both incorporate existing scientific literature and, to a certain extent, develop new scientific findings. A systematic structure and appropriate formatting as well as a logic argumentation are, thus, essential. This allows for replication of the scientific approach and makes it easier for the reader to follow the line of argumentation.

Generally, scientific papers or theses are formulated in present tense and comprehensible language. Orthography and grammar are required to meet university standards.

In a **seminar paper**, you are expected to be able to classify the given question in the respective research field and to analyze it economically. For this purpose, you have to review and evaluate the literature relevant to your topic and summarize what you consider to be the essential aspects. Depending on the type of question, your own presentation or evaluation based on a practical example may also count as your own contribution.

In a **bachelor thesis**, the same requirements apply as for a seminar paper. However, more weight is given to the student's individual contribution. Usually, the student's individual achievement consists of a critical appraisal of the literature evaluated, i.e., of presenting, classifying, and critically and independently questioning research results and their interpretation. Furthermore, the student's own contribution includes, e.g., applying a method from the literature to a new case or providing a new explanatory approach for previously unrelated research results.

In a **master thesis**, the student's own contribution is of most importance. As an examination performance, it is expected that methods learned within the course of studies are applied independently on a new scientific problem. The representative reader of the thesis is a student who has listened to the introductory lectures in economics or business administration. Basics of microeconomics and macroeconomics, economic policy as well as the respective discipline (e.g., energy or environmental economics) may be assumed to be known. Compliance with content and formal standards, which also apply to scientific publications, should be taught during the preparation of the thesis.

## 2 Scope

The length of a seminar paper or bachelor/master thesis is specified by the following requirements:

- Seminar paper: 15 pages
- Bachelor thesis: up to 25 pages
- Master thesis: 40-60 pages

The above listed page numbers refer to the main text, i.e., without any figures and tables. Accordingly, the total length of the paper may be significantly longer due to the inclusion of indexes and appendices.

You are allowed to exceed or fall below the above indicated total number of pages by up to 10%. Before exceeding or falling below the number of pages specified, you should consult with your supervisor. It is also advisable to discuss the specific number of pages required at the beginning of the project, since the required number of pages may depend on the type of research question (e.g., own empirical survey versus literature review).

## 3 Submission

Usually, an electronic version (preferably as a .pdf file) of your bachelor or master thesis must be submitted via FlexNow by 23:59 on the day of submission. In addition, if you used data sets or similar material please hand them in via e-mail. The examination office provides further information on the registration and submission of a thesis. For seminar papers, please note the information on submission in the respective seminar.

## 4 Formatting

Regarding formatting, the following setting is recommended:

- Font size: main text 12 pt., footnotes 10 pt., headings 12-18 pt.
- Alignment: justified text
- 1,5 pt. line spacing
- Page margin: top 2cm, bottom 2cm, left 2cm und right 3 cm

## 5 Language and Style

Theses are generally written in German; however, some seminars require theses to be written in English. In principle, theses in English are welcome, as they are not only helpful in deepening subject-related foreign language skills, but also enable alignment with international standards. Theses written in German must contain the translations of international technical terms in brackets, if possible.

The writing style should be as formal and objective as possible, i.e., colloquial and judgmental language should be avoided. The attempt to benefit from using as many technical terms as possible may severely minimize the comprehensibility of the scientific work. The primary goal is to convey the content to the reader in a comprehensible way and to present a logically comprehensible argument.

## 6 Literature Research

The following directories and search machines may be used for the literature research:

- Google Scholar
- Ideas.repec
- OPAC
- EZB
- Econpapers
- Fed St. Louis

The following points require for a critical assessment of the sources:

- Wikipedia may not be cited. Conversely, it is possible to cite scientific work that has been found via Wikipedia. However, before citing this scientific work, it is necessary to read it by yourself first.
- Seminar papers, bachelor, and master theses are not allowed to cite. Reusing text passages from your own previous student research papers is considered as cheating. You may cite dissertations and habilitations.
- Rarely cite magazines and daily newspaper and only for illustrating the current relevance of a topic for a broad audience. Those sources are not appropriate for gathering scientific findings.
- Only cite internet sources when they originate from professionally and technically informed authors (i.e., scientists, professional associations, research institutes, international organizations, etc.). Please do not cite internet sources where you cannot ascertain the responsible author.
- Textbooks are not suitable as main sources for a thesis. However, they can be cited for an introductory classification of a topic or information on secondary aspects of your work.

For the literature research, it is recommended to use the university network as it provides access to a wide variety of publications (tip: VPN client!). Make sure to always use the latest version of a literature source.

When selecting articles from journals, you should roughly find out whether the article is well-known (e.g., via citation frequencies) or whether the journal has a good reputation in its field. Introductory articles on economics topics can be found, among others, in the Journal of Economic Perspectives and the Journal of Economic Literature. Within the scope of your scientific work, using bibliography software, such as Citavi, may be helpful to manage your gathered literature correctly and easily.

There is no binding requirement regarding the total number of sources used. Apart from the total number of sources used, each of the sources' content and scientific depth are decisive for the quality of the paper. In general, a seminar paper should in no case use less than one source per page of the text section. Accordingly, if the seminar paper requires for 15 pages, at least different sources should be used. This requirement must be understood as the lower limit of sources used and not as a norm. In justified cases, you may fall below the lower limit but, in turn, work more intensively with the sources. However, please make sure to discuss this issue with your supervisor beforehand. Within the scope of your scientific work, you should generally be able to read and evaluate English texts.

## 7 Structure

The structure of the work must roughly consist of the following elements:

- Cover page *(no page numbers)*
- Table of contents *(Start roman page numbers: II)*
- If necessary, list of figures, list of tables, list of abbreviations, list of symbols
- Main part *(Start arabic page numbers: 1)*
  - Introduction
  - Main text
  - Discussion & conclusion
- References *(Continuation roman page numbers)*
- Appendix

### 7.1 Cover Page

The cover page must contain the following information:

- Title of the thesis
- Title of the module or the seminar
- Responsible for the topic assignment (normally Prof. Löschel)
- Supervisor
- Author (name, address, matriculation number, subject, current number of semesters)
- If bachelor or master thesis: date of the topic assignment
- Date of submission

### 7.2 Table of Contents

The table of contents lists all chapters and subchapters along with their title and page number, with the appendix as the last item (or references, if no appendix). The cover page is not listed.

### 7.3 List of Figures, Tables, Abbreviations, and Symblos

If figures and/or tables are used in the text, a separate list including title and page number of the respective figures or tables must be created. If, e.g., the paper contains two figures but no tables, only one list of figures must be created.

Commonly used abbreviations such as etc., or USA do not require an explanation and do not need to be listed in a list of abbreviations (for orientation: abbreviations that are found in common dictionaries can be considered as generally known). On the other hand, subject- or topic-specific abbreviations must be listed and, thus, require a list of abbreviations. In the main text, abbreviations are written out

the first time they are used; in the further course of the paper, only the abbreviation can be used from then on.

Normally, within seminar papers it is sufficient to explain the abbreviations and symbols used in the text without creating a separate list of abbreviations. As a rule of thumb, a list of abbreviations is worthwhile from about 5 units in the text. For master and bachelor theses, however, lists of abbreviations and symbols must always be included if such are used. If the number of abbreviations and symbols is small (rule of thumb: together less than 1 page), both can also be listed in one single list.

Symbols must be used consistently in the work, i.e., if 'I' is defined as investments, then imports - even if a completely different context is explained - must not also be labeled by an 'I'. Arithmetic symbols like +,  $\Sigma$  or f do not have to be listed.

## 7.4 Introduction

The introduction should be used for presenting the basic topic and its relevance to the reader. In particular, the introduction must work out the author's motivation for choosing and working on the research question in a concise and precise manner. On the first or second page of your work, the central research question, which you would like to answer in your work, must be formulated. At the end of the introduction, the methodical treatment of the question is briefly explained from chapter to chapter, which makes the "thread" recognizable.

## 7.5 Main Text

The main part deals with the topic in a comprehensible way of argumentation. All relevant facts and findings are to be compiled.

### 7.5.1 Structure of Chapters

As an orientation, it is recommended to structure the chapters from "general" to "specific". A division into several chapters and subchapters should reflect the logical structure. Subchapters ensure that the main chapters receive neither too little nor too much weight in the work. Basically, subchapters are only applied if there are more than two units. That is, the inclusion of a subchapter 2.1 requires for, at least, one more subchapter 2.2. A new main chapter (e.g., 5 Conclusion) always starts on a new page (this is not required for seminar papers).

### 7.5.2 Citations

Besides own findings, a scientific work should contain a detailed study of relevant sources, primarily published in scientific literature. Too much reliance on a single source or author is not recommended (unless otherwise agreed). Using content from sources must always be marked by citations. Incorporating external sources into your own work without an appropriate citation or label will be considered as cheating attempt and, thus, results in failing. It is possible that your work will be checked by an electronic plagiarism software.

**Direct citations** reproduce the content of a source word by word and must be indicated by citation marks. Example:

*For example, Adam Smith already referred to the problem that "no society [can] prosper and be happy in which by far the greater part of its members are poor and miserable."*<sup>1</sup>

If words are omitted from a direct quotation, this is to be indicated by (...). If words are rearranged for a more appropriate form, they are placed in [...], as in the example the word [can]. If possible, direct

---

<sup>1</sup> Smith (1776), p. 123.

citations are to be avoided and should only be used if the exact wording of the source is relevant to one's own argumentation.

**Indirect citations** reproduce the content of one or more sources analogously. This form of citation is preferred. Example:

*An unequal distribution of per capita income is not only shown by international disparities. Enormous inequalities within the population of individual countries can also be observed.*<sup>2</sup>

Copying or translating a source word by word and still marking it as an indirect citation is a violation of the principles of scientific work.

Basically, you can choose between **citing within the text** or **citing by using footnotes**. For the latter, see footnote 1 and 2 in the previous two examples. An in-text citation might look as follows:

*Income inequality is also observed within nations with the highest per capita incomes in the world (Ray 2008).*

Both forms of citation require the name and year of the source. Additionally, direct citations specify the page number that is referred to. When using footnotes, indirect citations are to be preceded by a "cf." or a "see". Each footnote must be ended with a dot. The list of references must contain a detailed version of the citation of the used sources. Multiple author names of one source are separated by /. In the case of more than three authors, all authors must be named in the footnote when the reference is made for the first time; in subsequent footnotes, it is sufficient to name the main author followed by "et al.". Several sources cited simultaneously in passages must be separated by ";". Several publications by one author (a group of authors) cited within the same year are to be differentiated by additional lowercase letters after the year. Online documents, e.g., reports that are only available as .pdf files, are to be cited like a regular document. When referring to Internet pages, the institution or author must also be named. In case of internet pages and online documents, the URL and the date of retrieval are to be included in the references.

If a text passage from a **foreign-language** source is to be included in the work as a direct quotation, there are two possibilities. You can either directly quote the text passage in the original language or translate it. In the second case, a footnote refers to the fact that the author has done a translation and the original source is indicated in the footnote. Despite the translation, it remains a direct quotation, which must be indicated with quotes (inverted commas).

### 7.5.3 Figures, Tables, and Formulas

Relevant figures and tables can be inserted in the main text if this is advantageous for the reading flow. In the text itself, the respective figure or table should be referred to at the appropriate place accompanied by an explanation. In case of figures, the numbering, title, and source are to be indicated below the figure. In case of tables, this information is to be indicated above the table.

Inserting formulars in the text requires for a consecutive numbering in the right margin. Mathematical symbols must clearly be defined in the text.

## 7.6 Discussion & Conclusion

The conclusion provides a summary of the analysis's approach and main results in combination with a closing discussion. The aim is to show the extent to which the research question, as posed in the

---

<sup>2</sup> See Ray (2008).

introduction, has been answered. Furthermore, an outlook may additionally be given to open further research questions and current topic-related developments.

### 7.7 Appendix

The appendix contains all documents, graphics, and tables that are not already included in the main text. Among others, this may include:

- Data that has not been analyzed within the paper
- Interviews and letters
- Program codes
- Extensive mathematical calculation steps
- Further sources that have been used in the paper but cannot be referenced or would be very hard to obtain (e.g., copy of a contract)

The individual documents in the appendix are structured with capital letters (A1, A2, B, C). For example, two tables on the energy balance from the years 2012 and 2013 can be listed as appendix A1 and A2; a program code as a subsequent appendix document would then be labeled as appendix B.

### 7.8 References

The list of references is a detailed list of all sources referred to in the paper. The sources are to be sorted alphabetically by the last name of the main author (and, in case of multiple sources of one author, in ascending order by year). The recommended format is 1,0-line spacing within a source and a left alignment. Between the sources a 1,5-line spacing is recommended for providing a better overview. A dot is also placed after each source. There is freedom in designing the references more concretely, as long as the style is uniform and consistency is maintained. However, it is helpful to use bibliographies of international journals or the [examples of the American Economic Association](#) as design templates.

The references must provide the following information of each source:

- Name of the author(s) (*if unknown: „n.n.“; academic titles must not be mentioned*)
- Year of publication (*if unknown: „n.d.“*)
- Title of the work as well as subtitles
- Publisher / journal / anthology / URL (and date of retrieval)
- Volume / edition / year

## 8 Creating Text with LaTeX

You are free to choose whether to create your text with programs such as LaTeX or WYSIWYG-programs (What You See Is What You Get) like Microsoft Word. In particular, it is worthwhile to familiarize yourself with LaTeX if you want to set mathematical formulas or create larger documents such as master theses without encountering major formatting problems afterwards. LaTeX is a software package available free of charge, with which the text typesetting program TeX can be used comfortably. A good overview of LaTeX can be found in the corresponding Wikipedia article.

## 9 Oral Presentation of the Work

If a presentation of your work is required, you can prepare slides for the beamer to visually convey the contents of the presentation. Avoid too long text passages to support your presentation and to not distract from it. Moreover, it is recommended to use so-called *action titles*, i.e., headings that already state the key message of the respective slide. Do not create too many slides. Sometimes it is advantageous to limit the focus on certain aspects of the work. Deepening contents may be included in a backup section behind the main part and may only be presented if necessary, e.g., within the scope of a discussion after the presentation.

If your final thesis also includes an oral exam is specified in your examination regulations.