

Department of Nutritional Science - Working Group on International Food and Nutrition Security

Guidelines for Writing Final Theses

Version: March 2026

This guide is intended to provide assistance with general and formal questions that repeatedly arise when preparing Bachelor's and Master's theses. Specific questions that are not addressed in this guide can be clarified in individual consultation meetings.

This document serves as a guideline rather than a strict regulation - i.e. each thesis can deviate from the specifications, even without consultation, if the reasons for doing so are clearly justified. However, in case of doubt, it is advisable to adhere to the guidelines or consult your supervisor.

1. Planning and Organizing the Thesis

1.1. Application, Topic Assignment, and Supervision

We welcome students interested in writing their bachelor's or master's thesis on a topic either suggested by us (e.g., listed on our website) or independently chosen by the student.

Bachelor's Thesis:

To apply for a topic, please submit a brief document (maximum one A4 page) that includes:

- Your name, JLU email address, semester, and study program
- Your proposed topic, including one to three research questions or hypotheses
- A brief justification for your topic choice
- A list of three to five academic articles (original research papers) that you found during your preliminary literature search and which you plan to use as a foundation for your thesis
- Name your document as follows:
 - LastName_FirstName_Application_BScThesis

When selecting a topic, review your course materials and lecture notes to find a subject that genuinely interests you and that you can engage with over an extended period. Ideally, the topic should be relevant to your future studies or career and should be supported by prior knowledge gained through coursework or internships. Ensure that the topic is neither too broad (yielding over 50 articles in a literature search) nor too narrow (resulting in very few or no relevant sources).

Master's Thesis:

If you are interested in a master's thesis, please contact us directly and provide the following information:

- Whether you prefer analyzing existing data or conducting field research in a project in the Global South
- Your specific interests within international food and nutrition security

- The languages you speak
- Your preferred timeframe

1.2. Literature Research

To define your topic effectively, you may need to experiment with different keyword combinations. To get a good initial overview of your topic, as well as references to further relevant studies, a review article or even a book chapter is very helpful. These reading resources should ideally be current, however, not all topics have up-to-date review articles.

Recommended academic databases include:

- JUSTfind: <https://justfind.hds.hebis.de/>
- PubMed: <https://pubmed.ncbi.nlm.nih.gov/>
- Web of Science: <https://mjl.clarivate.com/search-results>
- Cochrane Library: <https://www.cochranelibrary.com/>
- Google Scholar: <https://scholar.google.com/>

For an initial overview of a topic, it is also helpful to consult reports and documents available on the websites of international organizations or UN agencies related to current topics in food and nutrition security and development cooperation, such as:

- World Health Organization: <https://www.who.int/>
- Food and Agriculture Organization: <https://www.fao.org/home/en/>
- Welthungerhilfe: <https://www.welthungerhilfe.de/>
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH: <https://www.giz.de/de/html/index.html>
- The Demographic and Health Surveys (DHS) program (by USAID): <https://dhsprogram.com/> (data on health and nutrition situation for many countries)
- Global Nutrition Report (GNR): <https://globalnutritionreport.org/> (current data on the nutritional situation of different population groups for almost every country)
- Consultative Group of International Agriculture Research: <https://www.cgiar.org/> (check in particular for the “Nutrition, Health & Food Security Initiatives”)

Be aware that documents from these sources are usually not scientific articles. Always verify the original data sources before citing them (although DHS and GNR data may be cited directly if the exact source/page is indicated). In this context, we would also like to draw your attention to the JLUG information brochure [Gutes wissenschaftliches Arbeiten statt Plagiate und Täuschung](#) (Good academic writing instead of plagiarism and fraud). For more details on literature research, please refer to our “[Literature Review Guide IFNS](#)” and “[Literature Review Template IFNS](#)”.

1.3. Exposé for M.Sc. Theses

The exposé serves as a basis for planning and writing the thesis and should contain the following sections:

1. Introduction
 - a. Thesis topic and its integration into a larger project (if applicable)

- b. Background (literature review, state of research)
 - c. Research problem, rationale, and research gaps
 - d. Objectives, hypotheses (if applicable), and research questions
2. Methodology – for B.Sc. theses / literature review
 - a. Database to be used for literature search, reference of the planned use of AI
 - b. Planned use of search terms, inclusion and exclusion criteria
- Methodology – for M.Sc. theses / theses with data collection/ analysis
- c. Study area
 - d. Study population
 - e. Study design
 - f. Data collection
 - g. Data management and analysis
 - h. Ethical considerations and approvals
3. Expected Results
 4. Timeline
 5. Budget (if applicable)
 6. References
 7. Appendices (if applicable)

1.4.Registration and Deadlines

The thesis is registered in accordance with the requirements of the respective examination regulations (<https://www.uni-giessen.de/de/fbz/fb09/studium/prfg/thesismodul>). In consultation with the professor the deadline is set to 6 months for BSc and MSc theses if it is foreseeable that it can be completed within the period of the deadline. The registration form and the declaration of independence required for the submission of the written part of the thesis can also be found at the above link. Please note that the title specified in the registration form can only be changed with the approval of the Examination Office or Doctoral Office. Also, applications for extension of deadlines can only be submitted after approval by the supervisor. The forms for this can also be found under the link above. If a vote of the ethics committee is required for a study, possibly from both the University of Giessen and from a local ethics committee in a partner country where the surveys are to be conducted, approx. 6-8 weeks should be allowed for this. The application process will be arranged when the concept is discussed.

2. Structure of the Thesis

2.1.Thesis Length

The length of the thesis depends on the topic and whether it is a literature review or involves original data collection. The approximate length is:

- **Bachelor's thesis:** ~40 pages
- **Master's thesis:** ~60–100 pages
- **Doctoral dissertation:** As agreed with the supervisor

These page counts exclude tables of contents, references, and appendices. Each thesis must include a summary in German and English. The number of pages can be chosen individually +/- 10%; other lengths are possible in justified cases.

Section	Bachelor's Thesis		Master's Thesis	
	Share (%)	Pages	Share (%)	Pages
Title Page	-	1	-	1
Table of Contents List of Abbreviations List of Tables List of Figures Glossary (if applicable)	Individual (usually about 1 page per list)		Individual (usually about 1 page per list)	
Possible Abstract/Summary	-	-	-	1-2
Introduction	5	4	5	6-10
Materials and Methods	5-10	2-4	5-10	3-10
Results	30-35	12-14	30-35	18-35
Discussion	50	15-20	50	25-40
Within the Discussion: Conclusions and Recommendations	-	1	-	1
Possible Limitations	-	½-1	-	½-1
Summary (German & English)	-	2	-	2
Total	100	35-45	100	60-100
References	Individual		Individual	
Appendix	Individual		Individual	

The thesis may be written in German or in English language (preferable British English), but consistency in spelling must be maintained throughout the thesis. The language must be determined when applying for thesis approval.

For theses written in German: Use a comma for decimal notation (usually a maximum of two decimal places). For theses written in English: Use a period for decimal notation (usually a maximum of two decimal places).

2.2. General Structure

The title should briefly and precisely reflect the main content of the thesis, i.e. be specific and not too general, but also not cover the entire research question. The main body of the thesis should consist of:

1. Introduction (may be divided into Introduction and Background)
2. Materials and Methods (for literature reviews, this includes a description of the search strategy)
3. Results
4. Discussion (including limitations if applicable)
5. Conclusions and Recommendations/ Future Outlook (depending on the topic)
6. Summary/Abstract
7. Appendix

The **introduction** should outline, justify, and define the research question concisely. Extended background information belongs in introductory sections of the discussion section. The writing style should be objective and impersonal (i.e. no 'I', 'we' etc.), avoiding subjective opinions not supported by scientific arguments.

The introduction describes the question based on the current state of knowledge and narrows down the topic:

- Introduction of the topic, problem or situation of the topic/project, including current data and figures. Towards the end of the first pages, the aim of the thesis is presented.
- Presentation of the research question, hypotheses if applicable.
- Presentation of the state of knowledge: This presentation should not contain all the details, but should make it clear why the topic and the research question are relevant and where gaps in knowledge/research are seen that should be filled with this work.

In the discussion section, this literature section can be taken up again and discussed in more detail with the results.

The materials and methods section, including the relevant literature references, describes the study design and procedure. This section should enable the reader to understand and reproduce the methods used.

- In the case of **literature studies**, the keywords used, the hit rate, particularly for online searches, and the criteria used to select the referenced studies should be indicated. Finally, the methods are supplemented by a description of how many studies were not considered and how many were used and discussed in the paper. It is recommended to represent this graphically, e.g. in a flowchart.
- For studies with **own data collection**, the methods can be organized as follows: Background, study design and subjects, data collection, data analysis, limitations (the latter section can also be included in the discussion).
 - Background: This includes information on the study region/location and demographic information of the study population. Tables or figures can be a good way of presenting such information.
 - Study design and study population: This includes the description of the chosen design (e.g. cross-sectional survey with standardized questionnaires) with reference to literature sources. This section also contains a description of how subjects were selected and recruited, inclusion and exclusion criteria, etc.
 - Data collection: The data collection process is described here, i.e. which data collection methods and materials were used (e.g. 24h-recall, BIA) with reference to the literature.
 - Data analysis: This section contains the statistical methods that were used and the corresponding data analysis programs.

In the case of experimental work, the procedure, including the test subjects or patients, should be described so precisely and completely that a replication is possible. For common methods, reference to the literature is sufficient.

The **results** are presented in figures and tables and briefly described in the text. Duplicate descriptions should be avoided. Tables with individual data can be included in the appendix.

When only a literature review is done (for B.Sc. only) the literature on which the thesis is based is presented in the results part. The studies are selected together with the supervisor. When presenting the studies, the study design should be presented first and then the results. In the form of the presentation, it is important to ensure that the studies are presented as comparably as possible, e.g. also across studies in a table.

The **discussion** and detailed interpretation takes place in the discussion section. Here, the individual studies or results - referred to in the results section - are put in relation to each other and compared with other studies. Possible **limitations**/restrictions, e.g. in data collection, should be mentioned and discussed. Finally, conclusions are drawn and an **outlook** is given and discussed. Depending on the topic, the conclusions can also be linked to specific **recommendations**.

The **summary** is an extended table of contents and briefly and concisely presents the background of the work, the methods and the most important results, without citing the literature. The maximum length is 1 page each in German and English. The summary is the 'signboard' of the thesis.

2.3. Outline

The main sections should be subdivided into a maximum of two levels, i.e., up to second-order headings (1.1, 1.2, ...). Additionally, longer paragraphs or sub-sections may be highlighted with third-order headings in bold, italic, or underlined (without numbering). The table of contents should only include first- and second-order headings.

2.4. Typesetting and Layout

Page numbers should start from the second page using Roman numerals for all preliminary sections. From the introduction onwards, Arabic numerals should be used, beginning with "1" and continuing through the end of the thesis. Page numbers should be placed at the bottom right.

Alignment	Justified
Page Margins	„normal“ (2.5 cm on top, left, and right; 2 cm at the bottom)
Header	Not recommended, subject to agreement
Line Spacing	1.5
Font	Calibri (Body)
Font Color	black
Page Margin Heading 1 st order	14 pt bold
Heading 2 nd order	14 pt
Heading 3 rd order (without no.)	12 pt bold, underlined, or italic
Table Titles	12 pt (bold)

Figure Captions 12 pt (bold)

Body Text 12 pt

Numbers should not appear at the beginning of a sentence. Whole numbers up to twelve should be written out; from 13 onwards, numerals should be used. Numbers with units as well as decimal or fractional numbers are written as numerals. **Emphasis** in the text are written in *italics*, underlined or blocked. **Abbreviations** used should be written out once the first time they are mentioned in the text. Example: World Health Organisation (WHO). **Brackets and footnotes** should only be used in exceptional cases. **Units** do not have to be explained: e.g. g, l, m, kcal; only metric units are permitted. Botanical and zoological **species names** are written in italics and with a capital initial when they are mentioned for the first time in the text with the botanical/zoological author abbreviation. (e.g., *Momordica charantia* L.).

2.5. Tables and figures

Tables have headings, figures have captions (legends) - these must describe the table or figure content accurately and should not contain any abbreviations. If for some reason abbreviations are necessary, they must be explained below the table/figure even if they have already been explained in the text. If possible, tables and figures should be on one page each (in landscape format if necessary). Please present results only once: either in the text or in a table or figure. If data is presented in a table or figure, the table/figure as a whole should be mentioned in the text and individual figures can be picked out as 'highlights' and mentioned in the text if necessary. Tables and figures should be placed after the corresponding text. Extensive tables belong in the appendix.

Please only scan in figures and tables that cannot be created from the data itself or check whether the data essential for the work can be presented in a separate table or figure (source citation either as a quotation or - in the case of own editing - 'modified according to (first) author (et al.) (year)').

- Scanned tables/figures must be legible and not blurred.
- In both the results and discussion sections: Maintain a healthy balance in terms of the number of tables and figures. Some information can be included in the appendix, e.g.: Questionnaires used, 24h recall or FFQ questionnaires or detailed correlation data.
- Vertical lines should be omitted in tables.

Table 1: Mean DDS of 6 to 23-month-old children in the vegetable and fruit areas and the number of children (also in percent) who reached the MDD. Vegetable areas N = 111, fruit areas N = 89.

	Vegetable areas		Fruit areas	
Season	Mean DDS (SD)	Children who reached MDD (%)	Mean DDS (SD)	Children who reached MDD (%)
Off-season	3.91 (1.01)	28 (25.2)	4.28 (1.12)	40 (44.9)

On-season	4.11 (1.13)	41 (36.9)	4.19 (1.15)	38 (42.7)
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DDS = Dietary Diversity Score; MDD = Minimum Dietary Diversity

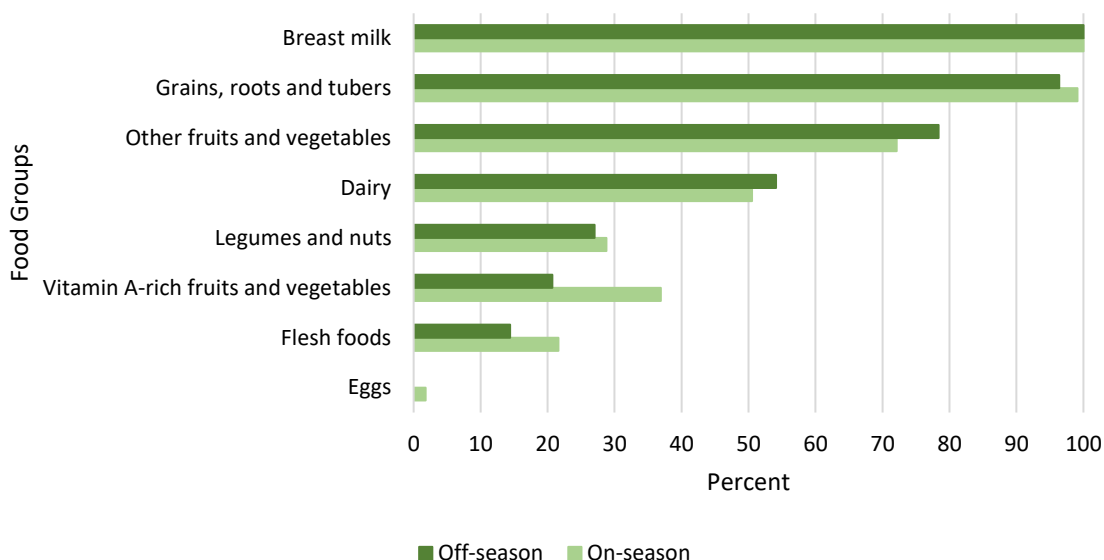


Figure 1: Food groups eaten in the past 24 hours by 6 to 23-month-old children (in percent) in the vegetable areas (N = 111)

The example for the figure and the table is taken from the MSc thesis ‘Fruit and vegetable consumption of infants and school-aged children in rural East Africa: Knowledge, attitude and practices’ by Luisa Alves, prepared at the Department of Crop Sciences, Division of Crop Product Quality, Georg-August-Universität Göttingen (December 2021).

2.6. References and Citation Style/Bibliography

Citations in the text should include the first author's last name, followed by "et al." (if applicable) and the year of publication in parentheses: e.g., (Semba et al. 2008). This applies to all sources, including books and websites.

A citation management program is strongly recommended, such as Zotero, Mendeley (open-source), or Citavi (available for free through the University of Giessen campus license). More information is available <https://www.uni-giessen.de/ub/de/rech/literaturverwaltung>. Please consult with your supervisor on the preferred citation style.

The bibliography should be written in the following format or the entries in the reference management program should be made accordingly:

1. Journal Article:

Format: Author(s) Initial(s), up to three authors complete, from 4 authors further by 'et al.', (Year) Title. Journal, Volume(Issue), Pages, DOI

Example: Sarfo J, Pawelzik E, and Keding GB (2021) Dietary Patterns as Characterized by Food Processing Levels and Their Association with the Health Outcomes of Rural Women in East Africa. *Nutrients* 13(8): 2866. <https://doi.org/10.3390/nu13082866>

2. Book:

Format: Author(s) Initial(s) (Year) Chapter Title. In: Editor(s) (Ed.) Book Title. Publisher, Location, Pages.

Example: Keding GB (2016) Nutrition Transition in Rural Tanzania and Kenya. In: Biesalski HK, Black RE (eds): Hidden Hunger. Malnutrition and the First 1,000 Days of Life: Causes, Consequences and Solutions. *World Rev Nutr Diet*. Basel, Karger, 2016, vol 115, pp 61–74. DOI: 10.1159/000442073

3. Website:

The link should be presented in full (even very long links) so that the links can be checked.

Example: WHO (2024) Child growth standards. <https://www.who.int/tools/child-growth-standards> (Accessed 16.01.2024)

As soon as you use more than two terms in your work that are not common, very new or for which you have found different definitions, it is recommended to create a **glossary** at the beginning of the work and to define all terms there, citing the source.

2.7. Use of Artificial Intelligence (AI)

Dealing with AI

If you use AI-generated text tools such as ChatGPT, we recommend doing so only for **initial drafts or orientation**, such as forming the basis of an introduction. Unmodified AI-generated text - just like unmodified text from other sources - should never be part of your work. Any original text not authored by you must be clearly cited (see §22 Abs. 2 of the General Regulations of JLU Gießen, if applicable in conjunction with para. 8). **Unmodified AI-generated text—just like any text from another source—must never be included in your thesis.** Non-cited AI-generated content is considered an act of deception under §30 Abs. 1, with corresponding consequences. AI models generate text based on **linguistic probabilities, not factual knowledge**. AI-generated content can be superficial, redundant, factually incorrect, or use terminology inaccurately. In addition, ChatGPT, for example, is primarily programmed on the basis of the US Internet and has a corresponding cultural bias. This means that what is marginalized there or on the internet in general is then also neglected or not reproduced in a text generated using it. Therefore, any **AI-generated text must be critically reviewed, edited, and corrected**. AI tools for **proofreading** (e.g., as part of MS Office or other writing programmes) are explicitly allowed.

This information is based on the lecture 'ChatGPT et al. - Implications of Natural Language Processing for a sustainable examination culture' from 20 April 2023 by Dr Anika Limburg, Head of the LehrLernZentrum at RhineMain University of Applied Sciences (www.hessenhub.de). A **handout** from the Legal Department of JLU Giessen on dealing with ChatGPT et al. is in progress and will be made available as soon as possible (as of August 2024).

Citing AI

If you use AI-generated content, adhere to JLU's guidelines on AI in examinations: <https://www.uni-giessen.de/de/org/admin/stab/stl/verwendung-ki-in-pruefungen>. At the same time, please note the recommendations of the Modern Language Association of America, which summarises the essential points well

(see also https://digitalskills.unibas.ch/fileadmin/user_upload/digital_skills/Leitfaden-KI-zitieren_Apr-2023.pdf):

'Accurate citation is always required when incorporating elements into the paper that have been generated by AI tools. This applies both when an element generated by AI tools is **adopted** in its original state and when it is **used after revision**. It must also be labelled if AI-based tools have been used in the **idea generation phase**.'

Based on these principles, the Modern Language Association of America has developed the following three rules (see 'How do I cite generative AI in MLA style?', Modern Language Association of America, <https://style.mla.org/citing-generative-ai>, accessed 4 March 2026):

1. "Always cite the generative AI tool when directly applying, paraphrasing, or incorporating the content (text, images, data, or other) created with this tool into your own work."
2. "Mention all uses of the tool (such as editing your text or translating passages) in a note, directly in the text or in another appropriate place."
3. "Be sure to check the secondary sources cited." (References are often made up by AI tools!)

Regardless of whether you use AI or not, please fill out the form on the university website (Use of AI in examinations at JLU Giessen (see link above) → 3. Examination law assessment) and attach it to your term paper.

If you use AI for your term paper, please also attach a table to the paper in which the AI-based systems used to create the paper are documented. Below is an example of such a table:

AI-based tools	Used prompts (Input)	Application type	Affected parts of the thesis	Address (URL of the tool) and remarks
ChatGPT (incl. software version), date of retrieval	...	Generation of text suggestions, marked in text or footnote	Page 3, Section 2; Page 4, Sections 1–3	
SchulKI	Creation of visualizations	Fig. 3, Page 6	Visualization concept, heavily revised
DeepL	...	Translation of
...

In addition to the table, it is possible to attach the history (transcription or screenshots) to the work if required.

2.8. Affirmation

The thesis concludes with the following declaration, which must be signed (digital signature is possible):

I hereby declare in lieu of an oath that I have written this thesis independently and have not used any sources or aids other than those stated, that all statements taken verbatim or analogously from other writings have been identified and that the thesis has not yet been part of a coursework or examination in the same or a similar version. I agree that this thesis may be checked with anti-plagiarism software.

Place, Date

Signature

2.9. Submission of the written work

The thesis must be submitted to the supervisor in electronic form as a PDF document, including the data set for practical work (as separate files, format to be agreed), by the deadline. A printed and bound version on paper can be submitted at the supervisor's request and by arrangement.

3. Colloquium/ Defense

3.1. Presentation

After submission of the written thesis - and if it has been graded at least 'sufficient' - the date for the colloquium/ oral presentation of the thesis will be proposed by the candidate by e-mail to both examiners or a date will be found in an exchange/conversation. In the colloquium, the candidate presents the work **within 15 minutes** in a free presentation with a screen presentation. The presentation should contain figures and tables, but as little text as possible (keywords if necessary). Furthermore, the presentation should comprise approx. 15 slides - approx. 1 minute of presentation time per slide is expected, but this can of course vary. **The slides must be numbered.** After the presentation, the examiners will ask questions about the work. The B.Sc. colloquium lasts a minimum of 20 and a maximum of 30 minutes, while the M.Sc. colloquium lasts a minimum of 30 and a maximum of 45 minutes.

3.2. Organisational matters

For the presentation, the candidate arranges the room reservation (e.g. via Ms. Usha Beher) and arrives 15 minutes before the start of the examination to prepare for the presentation.

If you are unsure about the application of these guidelines, please contact your thesis supervisor. Reasonable deviations are always possible and will not adversely affect the assessment of your work.

<https://www.uni-giessen.de/de/fbz/fb09/studium/prfg/thesismodul>

JUSTUS-LIEBIG-UNIVERSITY GIESSEN

**Faculty 09 - Agricultural Sciences, Nutritional Sciences, and Environmental
Management**

**Department of Nutritional Science
International Food and Nutrition Security**

THESIS

for the qualification of Master of Science (M.Sc.)
in the degree programme XXXXX XXXXXXXX
on the topic

**The contribution of indigenous fruits and vegetables to food and
nutrition security in East Africa**

Submitted by: XXXX XXXXX

Matriculation number 123456789

1. Examiner: XXXX XXXX

2. Examiner: XXXX XXXX

Gießen, 7th November 2024