

Guidelines for the preparation of dissertations written as a **Monograph** at the Faculty of Medicine at Heinrich Heine University Düsseldorf

To the Doctoral Regulations (PO) of the Faculty of Medicine at HHU Düsseldorf
Dr.med. / Dr.med.dent. / Dr. Public Health / PhD in Medical Sciences

As of June 2020

Introductory Remarks

Different format requirements apply for dissertations written as a monograph and for publication-based dissertations (see § 8 (4) of the PO, separate guidelines). The mandatory format template can be found in the PO in appendix 2. It is available at:
www.medizin.hhu.de/abgabe-doktorarbeit.

A dissertation must be prepared according to the generally applicable criteria for the writing of a scientific paper. The following explanations are intended to help you with this.

Please note that your dissertation will be evaluated based on the version you submit with your application for admission to doctoral examination proceedings. No corrections can be made after submission of the dissertation. Deficiencies in content and form will be taken into account for the grading.

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1 General Information

1.1 Format

The dissertation paper is printed single-sided in DIN A4 format.

1.2 Font and Typesetting

The left margin should be 3 to 3.5 cm wide because of the binding. The right margin, upper and lower margins should be 2 to 2.5 cm wide. The use of common fonts is strongly suggested, e.g. Times New Roman, Arial, Helvetica. You can also use a combination of different fonts: e.g. for the body text an easily readable serif font (e.g. Times New Roman) and for the headlines and illustrations a sans serif font (e.g. Arial). Do not use decorative fonts.

The font size of the continuous text is 11 to 12 point with max. 1.5-fold line spacing. Larger font sizes up to 20 points can also be used for headings. The continuous text can be set either as justified text or left-justified. The legends of the illustrations and tables are slightly smaller than the continuous text and have a font size of 10 point. The first line of each paragraph can be indented.

Foreign language terms do not necessarily have to be translated. However, they must be marked in italics (e.g. *in vitro*).

1.3 General Outline

The thesis is structured as follows:

- Title page
- Page 2 (Examiner details) - You will be notified of the exact text for page 2, once print approval is granted.
- Page 3 (Dedication, if applicable)
- Page 4 (List of own publications)
- Summary (German)
- Summary (English)
- List of abbreviations
- Table of contents
- Introduction (including a subchapter *Aims of Thesis*)
- Materials and Methods
- Results
- Discussion (including *Conclusion*)
- Reference list/Bibliography
- Appendix
- Acknowledgements

The classical structure of a dissertation should give you an idea of how a dissertation can be structured.

1.4 Page numbering

The following pages are not given a number:

- Title page

- Page 2 (Examiner details)
- Page 3 (Dedication, if applicable)
- Page 4 (List of own publications)

The following sections are numbered consecutively with Roman numerals (I, II, III, IV, etc.):

- Summary (German)
- Summary (English)
- List of abbreviations
- Table of contents

Then, the first page of the introduction starts with 1. All following pages are numbered consecutively using Arabic numbers:

- Introduction (including a subchapter *Aims of Thesis*)
- Materials and Methods
- Results
- Discussion (including *Conclusion*)
- Reference list/Bibliography
- Appendix

The following pages are not numbered:

- Acknowledgements

1.5 Figures and Tables

Figures and tables are numbered consecutively. They should be positioned at the appropriate place in the text. They do not belong in the appendix or on pages with figures without text reference. All illustrations are mentioned and explained in the text (e.g. Fig.1). They are provided with a title and a legend or caption. The title is printed bold. Figures and tables must be self-explanatory in conjunction with the legend.

The legend is placed below the figure and begins with: "Fig. x:...". (The word figure is abbreviated.). This is followed by the title of the illustration and further information. All units of measurement (cm, kg etc.) and abbreviations used must be listed and explained in the legend.

Tables are used to clearly present extensive data material. The meaning of the individual rows and columns must be made clear to the reader. Like the figures, tables are numbered sequentially as follows: "Table 1:...". The word table is not abbreviated. This is followed by the name of the table (table heading, bold) and information necessary for its understanding. The legend of the table is placed below the table. Tables, like figures, are positioned at the appropriate places in the text

All symbols or abbreviations that are not self-explanatory must be explained in a legend. It is important to be consistent throughout the document. Table headings and legends are usually formatted in smaller size (10 - 11 point) than the body text. For (electron) microscopic images, the scale and magnification must be given.

Copyright information: For all illustrations and tables that you have not created yourself, but have taken over or modified from other sources, a source reference, analogous to the citation of text sources, must be given in the caption. The source reference must be included in the reference list/bibliography.

Please note, especially in view of the fact that your dissertation will be published online, that the reproduction of illustrations and tables is subject to copyright. In order not to risk a warning for unauthorised use of pictures, graphics or photographs, you should always ask the responsible publisher for permission. This also applies to illustrations from publications in which you are listed as the author, as the reproduction rights are usually transferred to the publisher. However, most publishers allow the re-use of parts of your own publications. In the case of journals, this is usually stipulated in a contract. Therefore, please refer to the websites of the respective publishers for information on author rights and licenses. The granting of a licence by a publisher may also be subject to fees.

In case of doubt, you should remove copyrighted images from your dissertation or replace them with images whose legal status has been clarified.

1.6 Footnotes

Footnotes should be avoided (some exceptions may apply, e.g. in the field of History of Medicine).

1.7 Referencing and Citations

All sources referred to in the text must be mentioned in your bibliography or list of references. This includes own publications that are related to the present dissertation as well as all sources from which figures and tables were taken directly or modified. Do not list manuscripts in submission/in revision here. These belong into the "Application for authorization to the doctorate" (*Zulassungsantrag*).

Vice versa, the bibliography should only contain sources that are referred to in the text. The reader must be able to find the original publication based on the information in the bibliography. The use of a citation program to create the bibliography is strongly suggested (e.g. Zotero, Endnote).

The way of citing must be consistent, logical and comprehensible within the document. Use either the Name-year system (Harvard system) or the Number reference system (Vancouver system). In the Vancouver system, a number is added in parentheses or square brackets in the appropriate place in the text, starting the numbering from 1. The first source used is given the number 1, the second the number 2, and so on. If a source is cited twice, it retains the original number. The sources are then listed in the bibliography in the order in which they appear. In the Harvard system, the sources are listed in the text with the author's surname and the publication year in brackets: (Messmer, 1990), (Otto and Herfarth, 1991), when there are more than two authors (Otto et al., 1992). In the bibliography, the sources are listed in alphabetical order.

Direct quotations must always be placed in quotation marks.

Only reference material that allows a reader to track down the original source should be cited. This includes publications from listed journals (Pubmed, ISI Web of Knowledge), published books, dissertations and abstracts published in listed journals. Not citable are: unpublished abstracts/posters, e-mails, oral communications etc.

Please avoid quoting Internet pages. If this cannot be avoided, please state the exact date of access in the list of sources in addition to the complete URL and document/print out the website for your records.

1.8 Thesis Submission for Examination and Review

When you submit the application for admission to doctoral examination proceedings, you upload your dissertation electronically as a pdf file using the online admission form. If a reviewer would like to receive a printed version, please submit it on request.

1.9 Publication of Thesis (PO § 14)

The dissertation must be published within a year of passing the oral doctoral examination (§ 14 (4) of PO). The supervisor gives his/her consent to the printing of the dissertation on the revision note (Appendix 3 of PO). There are two different possibilities for the publication of the dissertation at the University and State Library (ULB) (§ 14 (5) and (6) of PO):

In addition to an electronic version, two bound copies are submitted to the ULB. These must be printed on age-resistant acid-free paper (groundwood-free paper) and be permanently bound.

In exceptional cases, the Dean may permit publication without an electronic version after written explanation. In this case, please contact the University and State Library of Düsseldorf for specifics regarding this form of publication.

Documents placed in the document server may not violate the applicable German copyright law and may not be changed subsequently. This means that you, as the author, either own all rights of publication, use, distribution, duplication and public reproduction or that the rights of use must be obtained from the author. Otherwise, you may be subject to high and long-term royalties. (You can download the legal information here: <http://www.gesetze-im-internet.de/urhg/index.html>).

1.10 Plagiarism

Plagiarism is deemed to exist if "[...] texts of third parties are copied in whole or in part, literally or almost literally, and passed off as one's own scientific achievement. Such a procedure not only contradicts good scientific practice, it is also a form of intellectual theft and thus a violation of copyright law." (Translated from: Grundaussagen des DHV zur Sicherung guter wissenschaftlicher Praxis in der Gemeinschaft von Lehrenden und Lernenden, Resolution des Deutschen Hochschulverbandes vom 17. Juli 2002; <https://www.hochschulverband.de/fileadmin/redaktion/download/pdf/resolutionen/plagiate.pdf>)

If content has been copied from books, magazines, Internet pages or radio contributions without information about the source, it is considered plagiarism. It is irrelevant how extensive the plagiarism is or whether the relevant passages were taken over literally or paraphrased or translated from another language. Adoptions from own publications must be marked. In the case of verbatim copies from your own publications, this must also be marked. It is not sufficient to indicate the source of the text alone.

This is also laid down in § 4 of the Rules on the Principles for Safeguarding Good Scientific Practice at Heinrich Heine University Düsseldorf, dated 19 February 2014.

2 Structure and Contents of the Dissertation

2.1 Title page

Please design the title page according to Appendix 2 of the PO. This can be found here: www.medizin.hhu.de/abgabe-doktorarbeit. You can choose the font and font size, but the content must comply with the requirements of the doctoral regulations.

2.2 Page 2

On page 2, the examiners of your dissertation are listed. Page 2 will not be included in the examination copies, but will only be inserted in the copies for publication after the review process and the oral examination. Please design page 2 according to Appendix 2 of the PO. This can be found here: www.medizin.hhu.de/abgabe-doktorarbeit.

2.3 Page 3

On this page, you can add a dedication or a quote in German or English.

2.4 Page 4

Own publications are listed here, if applicable. Submitted manuscripts / manuscripts under revision are not listed here. These will be listed in the “Application for authorization to the doctorate” (*Zulassungsantrag*).

Please, design page 4 according to Appendix 2 of the PO. This can be found here: www.medizin.hhu.de/abgabe-doktorarbeit.

Please note that you must include a reference for all information you take from your own publications. The publications mentioned on page 4 must therefore also be listed in the bibliography (see Section 1.7 Referencing and Citations). Direct quotations must be marked with quotation marks.

2.5 Summary (German and English)

The German and English summary should be exactly one page long each and should include the following content in a shortened form: the scientific background and current state of research, research question and objectives, methodology, results, discussion and conclusions. The summary represents a coherent text. Please **do not use** subheadings.

The summary is needed twice:

- a) Bound into your dissertation.
- b) As a pdf-document, submitted together with the application for admission to doctoral examination proceedings.

2.6 List of abbreviations

The list of abbreviations contains and explains all abbreviations used in the thesis (except for common linguistic abbreviations as defined in the dictionary, e.g. *Duden*, Merriam-Webster). In the case of physical or chemical quantities, it is also necessary to specify the unit. An alphabetical order is useful, a subdivision (e.g. SI units, own abbreviations) is possible. For

example, you can format the page in two columns, the abbreviations in bold and the corresponding explanations in non-bold.

Example:

List of abbreviations

AA	Arachidonsäure	GFP	<i>green fluorescent protein</i>
AID	autoinhibitorische Domäne	InsP3	Inositol-1,4,5-trisphosphat
BAPTA	1,2-bis(2-aminophenoxy) ethan N,N,N',N'-tetraacetat	IPTG	Isopropyl- β - Dthiogalactopyranosid
BHQ	2,5-di-(t-butyl)-1,4- hydrochinon	kb	Kilobasen
BSA	Rinderserumalbumin	kDa	Kilodalton
CaM	Calmodulin	LPC	Lysophosphatidylcholin
DIF	<i>differentiation inducing factor</i>	ODx	optische Dichte bei der Wellenlänge x nm
dNTP	Desoxyribonukleotide	SDS	Natriumdodecylsulfat
DTT	Dithiothreitol	TBS	<i>Tris buffered saline</i>
EDTA	Ethylendinitrilotetraessigsäure	Tm	Schmelztemperatur
EGTA	Ethylendioxybis(ethylenitrilo) -tetraessigsäure	U	Units
		U/min	Umdrehungen pro min

2.7 Table of contents

The table of contents lists the chapter headings with the corresponding pages. If a chapter is subdivided, the chapter must contain at least two subchapters. A chapter with only one subchapter is not allowed.

A common form of layout is decimal notation with bullet points up to three digits (e.g. 1.3.6). No full stop is placed after the last digit. The page numbers are only given with corresponding numbers, without addition. Therefore not: S.1 or S.1-3 (see example below). The first actual text page (introduction) is counted as "Page 1". If possible, the entire table of contents should not be longer than 2 pages.

Example:

Table of contents

1	Introduction	
1.1	Caption.....	1
1.2	Caption.....	2
1.3	Caption.....	5
1.4	Aims of thesis.....	8
2	Material and Methods.....	10
2.1	Caption.....	10
2.2	Caption.....	12
2.3	Ethical clearance and reference for animal testing.....	19
3	Results.....	20
3.1	Caption.....	20
3.2	Caption.....etc.	22
4	Discussion.....	50
5	Reference list / Bibliography.....	65
6	Appendix.....	72

2.8 Introduction

The introduction begins with an overview of the topic. This is followed by further introductory remarks, which describe the scientific background of the work as precisely as possible. Cite the most important publications and avoid extensive literature reviews. At the end, add a subchapter on the *Aims of Thesis* in which you describe the research question and the objectives of your work on a maximum of two pages.

2.9 Material and Methods

This section contains information on patients, examination materials and methods, depending on the research project. With the help of this section, readers must be able to understand and, if necessary, repeat all examinations and experiments.

Information on Patients

The statistical information to be mentioned or described includes number of patients, gender distribution, and age of patients (mean and median).

Reference Number issued by Ethics Committee

When results from clinical studies are part of the research project, the reference number assigned by the Ethics Committee of Heinrich Heine University upon approval must be stated in the section *Material and Methods*.

Reference Number issued by LANUV or ZETT

For work comprising results from animal testing, the file reference assigned by LANUV during the approval procedure must be given in the section *Materials and Methods*, or, in the case of organ removal, the file reference allocated by ZETT of Heinrich Heine University. A proof of participation in the laboratory animal science course must also be given, if applicable.

Methods and Material

This section lists: Type and origin of the material, hardware/equipment with type, manufacturer, location, a detailed description of the methods used.

Statistical Analysis

A short and clear description of the methods used for material processing, data processing and statistical analysis.

2.10 Results

This section contains a clear and concise presentation of your own results with reference to the research question of the thesis. Results that do not directly relate to the aim of the thesis should not be included here. Avoid any interpretation or discussion of the findings in the results section. Cite your own, already published data in the results section if you use them in your work. Further literature citations do not belong in the results section.

Results of others **may not be included** in the results section. Refer to other people's results either in the introduction or in the discussion. In order to use data as a graph, illustration or table, you must obtain written permission by the author.

2.11 Discussion and Conclusions

In the discussion, a critical evaluation of your own results is made against the background of the literature. At this point, further results that have not already been listed in the results section can also be discussed.

2.12 Reference list / Bibliography

The cited publications are listed in the bibliography. See also Section 1.7 References and citations.

2.13 Appendix

The appendix contains:

- any existing survey materials, e.g. questionnaires
- detailed description of formulas and derivations

Please do not include signed documents (e.g. the vote of the Ethics Committee).

2.14 Acknowledgements

An acknowledgement can be inserted on this page.

2.15 Affidavit

The affidavit is signed in the “Application for authorization to the doctorate” (*Zulassungsantrag*). According to the PO, the affidavit is no longer inserted in the dissertation itself.