THESIS GUIDE

INSTRUCTIONS AND GUIDANCE FOR AUTHORS

The thesis must conform to the format described in this section. Please take the time to read this section carefully and refer to it often when writing your thesis**.** The thesis should take the form of a paper submitted for publication to a journal, whose instructions for authors are given below.

Language of the thesis

The thesis may be written in English **or** German. However, the abstract must be presented in English **and** German.

Length of the thesis

The text of the thesis should be no more than 20 to 50 pages in length, not including the references.
The individual sections may vary considerably in length depending on the particular project. As with any submission of a paper to a journal, students are expected to keep to this size.

Sections of the manuscript

Theses should all contain the following sections in the order shown:

- Title page
- Acknowledgements
- Abstract (in English **and** German)
- Introduction including Aims
- Materials and Methods, including list of Abbrevations
- Results
- Discussion
- References

The sections mentioned above apply to those theses with an experimental background. For any thesis having a theoretical approach on a scientific subject, sections must be modified accordingly.

General format

An original should be legibly typed on A4. The manuscript must be typed in Arial, 12 points, double-spaced. Margins of 25 mm should be left at the right-hand side, top and bottom of each page. The left-hand margin will need 30 mm to allow the manuscript to be read once bound. Number each page at the middle of the bottom (Title page is not numbered). Figures and tables, with their legends, should be included at the appropriate point in the manuscript. A draft must be given to the first and second referee for corrections. The thesis should be bound into a cover cardboard. Three copies of the final version of the thesis must be submitted to the secretariat of FB Natural Sciences in Rheinbach not later than the day of the individual deadline.

Cover Page
Use the Powerpoint file "*Cover Bachelor Thesis*" as a master. Fill in your data and print on a cyan blue cover cardboard.

First Page
See Appendix. Use the page as a master and fill in your data.

Acknowledgements
Proper reference should be made to those who helped you with your project.

Abstract
The Abstract should be a single paragraph not exceeding 200 words. **Please abide strictly by this limitation of length**. The Abstract should be comprehensible to readers before they have read the paper, and abbreviations and reference citations should be avoided. The overall aims of the paper should be briefly stated in this section.

Introduction
This briefly introduces the background to the research and outlines the current state of knowledge. It points to the specific question your study tackles. It therefore should include, and lead naturally to, a clear statement of the **Aims** of the project.

Materials and Methods
This section describes how to perform the methods used. Published methods must be referred to and need only a brief description identifying modifications made to published methods.
The materials and methods used should be presented in a logical order. Materials, which may include cells, organisms, specialist chemicals etc, should be described. Give only essential details of preparation of reagents and solutions. Avoid recipe-type lists. It is essential that readers of the thesis be able to repeat your work from the description given but avoid excessive detail. Do not forget to mention the statistical methods you have used. Include brief comments, as appropriate, on safety procedures that are necessary for the safe conduct of the experiments.

Nomenclature, Abbreviations and Units
Authors should follow internationally accepted rules and conventions. Particular care should be taken with genetic nomenclature. The international system of units (SI) should be used; ml is acceptable in place of cm^3 for liquid measures. The preferred form for units is g $mL^{-}1$ and not g/mL. Multiplication of numbers should be indicated by a multiplication sign with spaces on either side (e.g. 6.2×10^8) A space should be inserted between numbers and the units (e.g. 10 mM) and between units by a space (e.g. mg L^{-1}).

Results
Keep this section to a statement of results, with supporting figures and tables, but provide linking paragraphs to say why you did experiments. It is not necessary to present this section in the order in which you performed the work. A logical order should be followed.
The reader will only notice trends in Figures and Tables that you bring to his/her attention so make sure to refer to them within the text ("see Fig. 2"; "As shown in table 3" etc).

That section is not the place for judgment or discussion of your results! Accordingly, avoid to make references to the literature in this section, except where it is essential to explain why you moved on to another approach. The text in the results section must be continuous i.e. do not insert page breaks after each Results sub-section.

Figures and Tables

Both should be included in the text body. The text should be typed single-spaced in Arial, 12 points. Figures and Tables must be equipped with a title and a legend. The title should summarize the content of the figure or the table. Legends should give all keys to symbols and should also explain error bars. If an experiment was done three times, this should be stated, as should information on whether all data were averaged to give the graph shown.

Most systems could have several controls, it is important that the reader understands what you mean by the term. In particular, never talk of the control; it suggests that you can only think of one.

See Appendix for examples of proper figures and tables.

Discussion

This is where you make connections with the literature, speculate on overall mechanisms and suggest extensions of your experiments. Make certain your Discussion is not a reiteration of results. You must discuss what your results mean **and place them in the context of published material**.

In the text a reference should be cited by author and date, e.g. 'Water is known to boil at 100°C (Jones and Brown, 1872; Brown *et al.*, 1873) and freeze at…'. Not more than two authors may be cited per reference; if there are more than two authors use *et al*. Where appropriate cite the most up-to-date references possible.

Include suggestions for possible future work. Note that if your practical work yields few results, you should still contribute a full and thoughtful discussion section; why might experiments not have worked; how can your (negative) results be interpreted in the context of the literature.

References

Make sure that you have read the references you quote and that the reference list is accurate.

References should be listed alphabetically according to the initial letter of the surname of the first author. Where the same authors have published more than one paper, list them in the order in which their papers appeared. If necessary use a and b e.g. 1990a.

References should include, in the following order: authors' names; year; article or chapter title; editors (books only); journal or book title; name and address of publisher (books only); volume number and inclusive page numbers.

The name of each journal should be abbreviated according to the World List of Scientific Periodicals (see an EMBO J. paper for reference) and italicized. References should therefore be listed as follows:

Tugendreich, S., Bassett, D.E., Jr, McKusick, V.A., Boguski, M.S. and Hieter, P. (1994) Genes conserved in yeast and humans. *Hum. Mol. Genet*., 3, 1509-1517.

Gehring, W. (1994) A history of the homeobox. In Duboule, D. (ed.), Guidebook to the Homeobox Genes. Oxford University Press, Oxford, UK, pp. 1-10

Lewin, B. (1994) Genes V. Oxford University Press, Oxford, UK.

TECHNICAL NOTES ON THESIS PRODUCTION

1. It is important to produce clear, well-planned diagrams which should appear in the text at appropriate size. If you intend to reduce the size of diagrams to half the size of the original, lines and lettering in the original must be twice the size you require in the final copy. Avoid fine shading or stippling that will not reproduce well. Note that large areas of solid black do not copy well.

2. Make back-up copies of your computer files/disks as you go along. **Computer problems will not be accepted as an excuse for late submission**.

3. Your supervisors will be able to offer help and general comments on the structure and development of the thesis during writing, and you should approach them for help in planning structure and content. The final submitted manuscript should be your own work entirely.

4. Be careful of your use of punctuation. In general, titles and headings do not require full stops. Use a spellchecker on your computer where possible. When you choose to write in English you may use either British **or** American spellings. However, make sure you stick to your choice all through your text.

APPENDIX

Master for the First Page

Presented April 14th, 2018

Commencement May 14th, 2018

Approved:

First Referee (Thesis Advisor)

Second Referee

Head of Examination Board

Declaration:

I understand that a copy of this thesis will become part of the collection of Bonn-Rhein-Sieg University of Applied Sciences. My signature below authorizes release of my thesis to any reader upon request.
I also affirm that the work represented in this thesis is my own work. I declare that I have produced this thesis independently and without improper external assistance and that I have identified all word-for-word quotations of other authors, as well as comments based closely on other authors' ideas, and I have listed the relevant sources.

Place, Date Name Signature

Example Figure with Legend

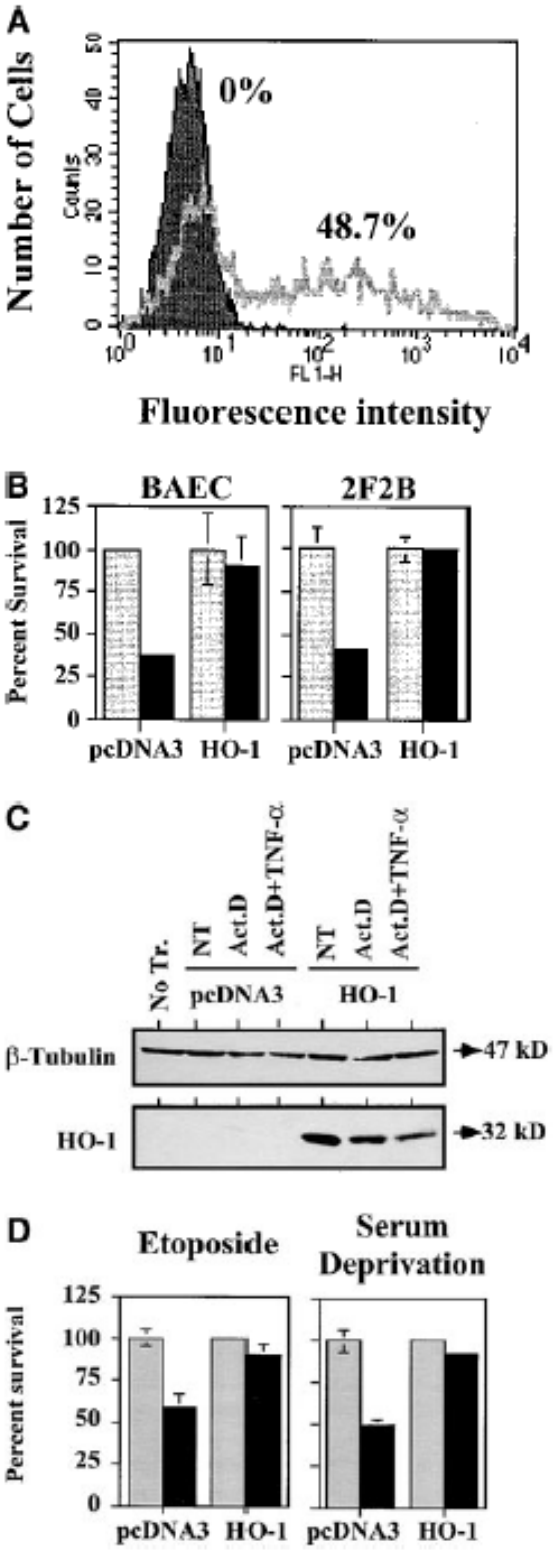

Figure 1. HO-1 suppresses EC apoptosis. (A) 2F-2B ECs were transfected with a GFP-expressing plasmid and monitored for GFP expression by flow cytometry. The percentage of transfected ECs was assessed by measuring fluorescence intensity in ECs transfected with control (pcDNA3; filled histogram) versus GFP (open histogram) expression plasmids. (B) ECs were cotransfected with b-galactosidase plus control (pcDNA3) or HO-1 (b-actin/HO-1) expression vectors. EC apoptosis was induced by TNF-α plus Act.D and apoptosis of β-galactosidase–transfected ECs was quantified. Gray bars represent ECs treated with Act.D and black bars represent ECs treated with TNF-α plus Act.D. Results shown are the mean 6 SD from duplicate wells taken from 1 representative experiment out of 10. (C) HO-1 expression was detected in BAECs by Western blot. No Tr, nontransfected. NT, nontreated. (D) 2F-2B ECs were cotransfected with β-galactosidase plus control (pcDNA3) or HO-1 (β-actin/HO-1) expression vectors. Gray bars pepresent untreated ECs and black bars represent ECs treated with etoposide (200 mM, 8 h) or subjected to serum deprivation (0.1% FCS for 24 h). Results shown are the mean 6 SD from duplicate wells taken from one representative experiment out of three independent experiments. Similar results were obtained using BAECs.

Example Table with Legend

Table 1. Plasmid sets used to produce influenza virus from cloned cDNA*

	Experiment							
	1	2	3	4	5	6	7	8
RNA polymerase I plasmids for†								
PB1	+	+	−	−	−	−	−	−
PR8-PB1	−	−	+	+	+	+	+	+
PB2	+	+	+	+	+	+	+	+
PA	+	+	+	+	+	+	+	+
HA	+	+	+	+	+	+	+	+
NP	+	+	+	+	+	+	+	+
NA	+	+	+	+	+	+	+	+
M	+	+	+	+	+	+	+	+
NS	+	+	+	+	+	+	+	+
Protein expression plasmids for								
PB1	+	+	+	+	−	+	+	+
PB2	+	+	+	+	+	−	+	+
PA	+	+	+	+	+	+	−	+
NP	+	+	+	+	+	+	+	−
HA	−	+	−	+	+	+	+	+
NA	−	+	−	+	+	+	+	+
M1	−	+	−	+	+	+	+	+
M2	−	+	−	+	+	+	+	+
NS2	−	+	−	+	+	+	+	+
Virus titer, pfu/ml	7×10^3	7×10^3	1×10^3	3×10^4	0	0	0	0

*293T cells were transfected with the indicated plasmids. Twenty-four (Experiments 1 and 2) or 48 hr (Experiments 3–8) later, the virus titer in the supernatant was determined in MDCK cells.

†Unless otherwise indicated, plasmids were constructed with cDNAs representing the RNAs of A/WSN/33 virus.