

A LaTeX template for PhD dissertations at the Department of Spatial Planning

LaTeX is a software package widely used for preparing academic manuscripts such as articles, books, and dissertations. It builds on the TeX typesetting system and complements it with a user-friendly markup tagging system. The basic principle of LaTeX is the separation of content and layout. Once the latter is set up appropriately, it is easy to create high-quality documents without having to worry about and change the layout as the writing progresses (for example, no figures slip when text is inserted, new chapters always start reliably on a right-hand page, etc.).

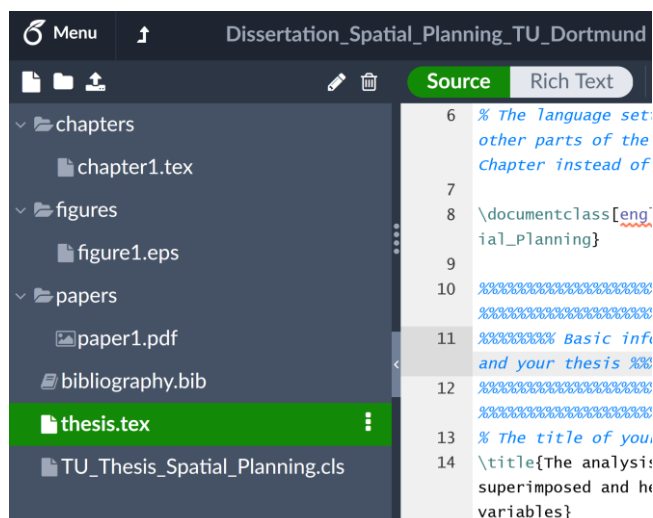
The LaTeX template at hand is intended for dissertations written at the Department of Spatial Planning. It offers you a quick and convenient way to typeset your dissertation and adheres to professional publishing standards:

- The template is designed for double-sided books, leaving enough margins for binding,
- figures, tables and other flow elements are always positioned either at the top or bottom of a page, as is customary in professional typesetting,
- page numbers in the various sections of the document are automatically correctly adjusted (Roman in the preamble, Arabic in the main body, Roman capitals in an optional appendix),
- the bibliography conforms to the BibTeX standard, which allows a separation between content (bibliographic information) and formatting (format for referencing; the default is Harvard referencing).

You can use the template with any LaTeX editor (e.g. TeXnic Center together with MikTeX for compilation). However, the easiest way to work with the template is probably to create an account on overleaf.com, a widely used online LaTeX typesetting system. The following explanations are based on this editor.

Setting up the template

Setting up the template on Overleaf is quite simple. All you have to do is click on “New project” and then upload the ZIP folder that contains the template. Once this has been done successfully, you will immediately see the basic structure of the project, which you can then populate with your own content. The structure that is generated should be the following (three folders + 3 additional files):



The main file that links all the contents is thesis.tex. The individual chapters of your thesis are stored in the chapters folder. Figures should be uploaded to the figures folder. If you are writing a cumulative dissertation, your published papers in final post-print format ('as published') are stored in the papers folder. The following explanations introduce the elements specific to this template and are not intended as a comprehensive LaTeX introduction, which is beyond the scope of this short readme file. However, you should take a look at the information contained in the template (especially in chapter1.tex), as this will give you many hints on how to use some of the most important LaTeX commands.

Metadata

In the preamble of the thesis.tex file, you can specify some basic information about your thesis that will be used repeatedly and in different places. Most of these elements should be self-explanatory:

```
\documentclass[english]{TU_Thesis_Spatial_Planning}
\title{The analysis of spatially superimposed and heterogeneous random variables}
\subtitle{Using the example of geosocial media data}
\author{René Westerholt}
\authordegree{René Westerholt, M.Sc.}
\datedefense{18. Juni 2018}
\birthplace{Bünde (Westfalen), Deutschland}
\supervisor{Prof.\ John Doe, Heidelberg University, Germany}
\supervisorb{Prof.\ Dana Smith, University of Warwick, United Kingdom}
```

Note the option "English" in the opening command \documentclass. You can replace this with "german" if your work is written in German instead of English. The result would be the automatic conversion of standard expressions such as "Inhaltsverzeichnis" instead of "Contents". Of course, any text you enter manually will remain as you entered it, regardless of which language option you use. The \supervisorb command is optional and can be deleted if you have only one supervisor. The information provided by the above metadata commands is used to create some standard pages, as you will see in the compiled PDF document. The first page (cover page) and the affidavit are always typeset in German. However, the title page, acknowledgements section, and other pages are affected by the language settings.

Preamble

The preamble offers three environments that need to be populated with your contents:

```
\begin{acknowledgements}
...
\end{acknowledgements}

\begin{englishabstract}
...
\end{englishabstract}

\begin{germanabstract}
...
\end{germanabstract}
```

You can simply insert your acknowledgements, English and German abstracts between the respective begin and end commands. The layout and formatting will then be done automatically. Note: Please do not delete the leading `\noindent` commands in these sections (not required later, only here).

After the commands for creating all lists (figures, tables, table of contents), you will find another environment that allows you to conveniently create a list of abbreviations including links to the places in the main text where these abbreviations appear:

```
\begin{abbreviations}
\acro{AGI}{Ambient geospatial information}
\end{abbreviations}
```

Note the structure of the tuple for an entry in the list: the first curly bracket includes the abbreviation, followed by a second pair of brackets containing the spelled-out form of the abbreviation. In the main text, you can use the command `\ac{AGI}` to create a hyperlink that takes the reader to the corresponding line of the abbreviation list in the rendered PDF file (see Chapter 1 of the template for an example).

Overall structure of the main part

The main part is initially set up for cumulative dissertations and is structured by the following elements:

```
\synopsis
\include{chapters/chapter1.tex}
...
\generatebibliography{bibliography.bib}

\publications
...

\makeappendix
\section{Appendix 1}
```

The commands `\synopsis` and `\publications` structure your work into two main parts. In the synopsis you enter the chapters of your frame text (note the path pointing to the chapters folder), while the publications part contains your published contributions. The `\generatebibliography` command will create a bibliography for your framework text and the file `bibliography.bib` is where your BibTeX entries will go. With the command `\makeappendix`, followed by one section per appendix, you can create an optional overall appendix for the dissertation, which appears at the very end of the overall manuscript.

While the synopsis part is quite simple and confined to one file per chapter, the publications part requires some additional explanation. Each publication is accompanied by a page of key facts and author contributions. On this page you can evidence the share of your contribution to each publication, confirmed by the signature of at least one of your co-authors (if any). You can create this page using the following environment:

```
\begin{papersummary}
\makepapertitle{On the integration of place and urban morphology}
\makepaperreference{slivinskaya2022urbanmorphology}
\makepapercontributions{LS: 70\%, RW: 30\%}
\makepaperdates{24 October 2021}{21 November 2021}{8 December 2021}
```

```
\end{papersummary}  
\SignatureAndDate{Liudmila Slivinskaya}  
\SignatureAndDate{René Westerholt}  
\clearpage  
\pagestyle{plain}
```

With `\makepapertitle` you can generate the title as it should appear in the table of contents and in the alternating headers of the main text. The `\makepaperreference` command requires the corresponding unique BibTeX identifier from the bibliography as input and automatically generates a full reference to your paper. The triple for `\makepaperdates` stands for the dates of submission, acceptance, and publication (just use “to appear” if a paper has not yet been published). The `\SignatureAndDate` commands create underscores that will be tagged with the specified names and allow you and your co-authors to sign off and confirm the specified information (just add several such lines if you want more co-authors to sign the page).

Each publication can be included in PDF format. This means that you do not have to transfer each of your contributions into a LaTeX-compatible plain text but can work with the published manuscripts. However, since different publishers use different formatting, rescaling may be required to obtain sufficient margins for book binding, as well as aesthetically pleasing results in the typesetting of the document. These and other adjustments can be made for each paper in the following way:

```
\addpaper{papers/paper1.pdf}{0.95}
```

The first curly brackets indicate the path to your PDF document. Again, note the folder in which the PDFs are to be stored (in this case “papers”). The second pair of curly braces should contain a real number on the interval $[0, 1]$ and stands for a scaling factor. Here, 1 stands for the full size of the PDF, 0.5 for half the original size, etc. Which value to use depends on the design of the particular PDF file you want to include and is ultimately a matter of trial and error.