



DEPARTMENT OF
NAME OF THE DEPARTMENT

A VERY LONG AND IMPRESSIVE THESIS TITLE WITH A FORCED LINE BREAK

SOME THOUGHTS ON THE LIFE, THE UNIVERSE,
AND EVERYTHING ELSE

JOHN VERY LONGNAME DCE

Master/BSc in Name of Previous Degree

DOCTORATE IN STUDY PROGRAM NAME
SPECIALIZATION IN SPECIALIZATION NAME

NOVA University Lisbon

Draft: November 11, 2025

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Abstract

Regardless of the language in which the dissertation is written, usually there are at least two abstracts: one abstract in the same language as the main text, and another abstract in some other language.

The abstracts' order varies with the school. If your school has specific regulations concerning the abstracts' order, the NOVAthesis L^AT_EX (`novathesis`) (L^AT_EX) template will respect them. Otherwise, the default rule in the `novathesis` template is to have in first place the abstract in *the same language as main text*, and then the abstract in *the other language*. For example, if the dissertation is written in Portuguese, the abstracts' order will be first Portuguese and then English, followed by the main text in Portuguese. If the dissertation is written in English, the abstracts' order will be first English and then Portuguese, followed by the main text in English. However, this order can be customized by adding one of the following to the file `5_packages.tex`.

```
\ntsetup{abstractorder={<LANG_1>,...,<LANG_N>}}  
\ntsetup{abstractorder={<MAIN_LANG>={<LANG_1>,...,<LANG_N>}}}
```

For example, for a main document written in German with abstracts written in German, English and Italian (by this order) use:

```
\ntsetup{abstractorder={de={de,en,it}}}
```

Concerning its contents, the abstracts should not exceed one page and may answer the following questions (it is essential to adapt to the usual practices of your scientific area):

1. What is the problem?
2. Why is this problem interesting/challenging?
3. What is the proposed approach/solution/contribution?
4. What results (implications/consequences) from the solution?

Keywords: One keyword · Another keyword · Yet another keyword · One keyword more
· The last keyword

Resumo

Independentemente da língua em que a dissertação está escrita, geralmente esta contém pelo menos dois resumos: um resumo na mesma língua do texto principal e outro resumo numa outra língua.

A ordem dos resumos varia de acordo com a escola. Se a sua escola tiver regulamentos específicos sobre a ordem dos resumos, o template (L^AT_EX) *novathesis* irá respeitá-los. Caso contrário, a regra padrão no template *novathesis* é ter em primeiro lugar o resumo *no mesmo idioma do texto principal* e depois o resumo *no outro idioma*. Por exemplo, se a dissertação for escrita em português, a ordem dos resumos será primeiro o português e depois o inglês, seguido do texto principal em português. Se a dissertação for escrita em inglês, a ordem dos resumos será primeiro em inglês e depois em português, seguida do texto principal em inglês. No entanto, esse pedido pode ser personalizado adicionando um dos seguintes ao arquivo `5_packages.tex`.

```
\abstractorder(<MAIN_LANG>):={<LANG_1>,...,<LANG_N>}
```

Por exemplo, para um documento escrito em Alemão com resumos em Alemão, Inglês e Italiano (por esta ordem), pode usar-se:

```
\ntsetup{abstractorder={de={de,en,it}}}
```

Relativamente ao seu conteúdo, os resumos não devem ultrapassar uma página e frequentemente tentam responder às seguintes questões (é imprescindível a adaptação às práticas habituais da sua área científica):

1. Qual é o problema?
2. Porque é que é um problema interessante/desafiante?
3. Qual é a proposta de abordagem/solução?
4. Quais são as consequências/resultados da solução proposta?

Palavras-chave: Primeira palavra-chave · Outra palavra-chave · Mais uma palavra-chave · A última palavra-chave

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Acronyms

novathesis NOVAthesis L^AT_EX (*pp. i, iii, iv, 1, 2, 4, 6–8, 10–12, 14, 17–20, 26, 28, 29, 32, 33, 35*)

Introduction

1.1 Purpose and Scope

The **novothesis** template is a comprehensive \LaTeX class and project skeleton designed to simplify the preparation of academic theses and dissertations. Representing a synthesis of many years of practical experience in producing academic documents with \LaTeX , its objective is not only to provide a consistent visual identity but also to encourage good typesetting practices and reproducible workflows. It provides a robust, extensible, and highly configurable foundation for students, researchers, and supervisors who require professional-quality documents that conform to institutional standards.

The primary goals of the **novothesis** template are:

- To ensure **consistency** across theses produced by different students and institutions;
- To provide **institutional presets** that reproduce the visual identity of each supported school;
- To maintain a clear **separation between content and style**, allowing users to focus on writing rather than formatting;
- To support **multi-language documents** with automatic translation of structural elements (titles, captions, lists, etc.);
- To integrate **modern bibliography management** through `biblatex` and `biber`;
- To offer a **modular and automated build system** through `make` and `latexmk` (and a `build.py` Python script).

This manual explains how to install, configure, and use the **novothesis** template. It is intended for users with a basic knowledge of \LaTeX , but it also serves as a detailed reference for advanced customization and class maintenance.

1.2 Design Philosophy

The **novathesis** system is built on three principles: *modularity*, *transparency*, and *maintainability*.

1.2.1 Modularity

Every component of the template has a clearly defined role. Configuration files are isolated from the main document; each thematic area—fonts, bibliography, cover page, lists—has its own configuration module. This structure allows users to modify or extend a specific feature without affecting unrelated parts of the document.

1.2.2 Transparency

All configuration is done through plain-text files in the `0-Config/` directory. There are no hidden or hard-coded dependencies: every visual and logical choice is traceable and user-accessible. This transparency makes the system easy to audit, debug, and adapt to institutional requirements.

1.2.3 Maintainability

The template evolves with each new version of \LaTeX and the supported class packages. It favors standard packages, ensuring long-term compatibility and minimizing maintenance overhead.

1.3 Supported Document Types

novathesis can produce various document types through a single configuration parameter. The `doctype` option automatically adjusts the document covers, headings, titles, and certain layout dimensions to each degree level and school.

The supported document types include:

- `phd` – Doctoral dissertation;
- `msc` – Master’s thesis;
- `bsc` – Bachelor’s dissertation.

1.4 Institutional Support

The **novathesis** template supports multiple institutions and departments by means of preset configuration profiles. Each profile defines the official layout, logos, colors, and front-matter fields required by the corresponding institution.

As of version 7.6.0, the template includes presets for:

- Universidade do Porto
 - [uporto/fcup](#) – Faculdade de Ciências da Universidade do Porto;
- Instituto Politécnico de Setúbal
 - [ips/ests](#) – Escola Superior de Tecnologia de Setúbal;
- Instituto Universitário de Lisboa
 - [iscteiul/eta](#) – Escola de Tecnologia e Arquitectura;
- uminho – University of Minho;
 - [uminho/eaad](#) - Escola de Arquitetura, Arte e Design;
 - [uminho/ec](#) - Escola de Ciências;
 - [uminho/ed](#) - Escola de Direito;
 - [uminho/eeng](#) - Escola de Engenharia;
 - [uminho/elach](#) - Escola de Letras, Artes e Ciências Humanas |;
 - [uminho/emed](#) - Escola de Medicina |;
 - [uminho/epsi](#) - Escola de Psicologia;
 - [uminho/ese](#) - Escola Superior de Enfermagem;
 - [uminho/ics](#) - Instituto de Ciências Sociais;
 - [uminho/ie](#) - Instituto de Educação;
 - [uminho/i3bs](#) - Instituto de Investigação em Biomateriais, Biodegradáveis e Biomiméticos |;
- Universidade de Lisboa
 - [ulisboa/ist](#) — Instituto Superior Técnico;
 - [ulisboa/iseg](#) — Instituto Superior de Economia e Gestão;
 - [ulisboa/fmv](#) — Faculdade de Medicina Veterinária;
 - [ulisboa/fcul](#) — Faculdade de Ciências da Universidade de Lisboa;
- Outras Instituições de Ensino Superior
 - [other/ese](#) — Escola Superior de Enfermagem do Porto
- Universidade NOVA de Lisboa
 - [nova/itqb](#) - Instituto de Tecnologia Química e Biológica António Xavier;
 - [nova/ims](#) – NOVA Information Management School;
 - [nova/fct](#) – Faculdade de Ciências e Tecnologia;

- nova/ensp - Escola Nacional de Saúde Pública;
 - nova/fcsh - Faculdade de Ciências Sociais e Humanas;
- Universidade de Lisboa
 - ulisboa/fmv – Faculty of Veterinary Medicine;
 - ulisboa/iseg – School of Economics and Management;
 - ulisboa/ist – Instituto Superior Técnico;

Institutional presets are easily activated by uncommenting and editing a single configuration line in 0-Config/1_novathesis.tex:

```
\ntsetup{school=nova/fct}
```

Advanced users may also define their own institution by creating a configuration files under NOVAtesisFiles/Schools/UNIVERSITY/SCHOOL and referencing UNIVERSITY/SCHOOL in the setup.

1.5 Project Layout Overview

The **novathesis** project is organized to separate configuration, content, and auxiliary resources into dedicated directories. A simplified view of the structure is shown below:

```
-
|-- 0-Config/           Configuration files
|-- 1-FrontMatter/      Abstracts, acknowledgments, acronyms, etc.
|-- 2-MainMatter/       Main text chapters
|-- 3-BackMatter/       Appendices and Annexes
|-- 4-Bibliography/     BibTeX/BibLaTeX databases
|-- 5-Figures/          Image resources for figures
|-- template.tex        Main document entry point
|-- novathesis.cls      Class definition
|-- NOVAtesisFiles/     Internal class files and strings
|-- Makefile            Automated build system
```

Users are encouraged to keep the directory layout unchanged, as some internal macros rely on relative paths for file inclusion.

1.6 Conventions Used in This Manual

Throughout this manual, filenames and paths appear in typewriter font, L^AT_EX macros in `\verb` notation, and code examples are presented in shaded blocks. When an option or parameter is introduced, its default value is indicated in parentheses.

For example:

`\ntsetup{doctype=msc}` (default: `msc`)

Optional configuration values are denoted as:

`\ntsetup{school=<identifier>}`, where `<identifier>` may be one of `nova/fct`, `ulisboa/ist`, etc.

1.7 Target Audience

This manual addresses:

- **Students** preparing academic theses or dissertations;
- **Supervisors** and **faculty** defining institutional guidelines;
- **Template maintainers** who need to extend or adapt the class;
- **System administrators** deploying \LaTeX environments for academic use.

It assumes a basic working knowledge of \LaTeX , including compilation, referencing, and package usage.

1.8 Reading Guide

Chapters 2 and 3 provide step-by-step instructions for installation and first compilation. Subsequent chapters describe the configuration system, document structure, and build tools in depth. Advanced topics—such as creating new institutional profiles, customizing the cover, or defining new font themes—are discussed later in the manual.

Readers who only wish to produce a thesis using a supported preset may safely skip the technical sections and focus on Chapters 3 through 5.

Installation

2.1 Overview

This chapter describes how to install and prepare the `novathesis` template for use on local systems and in cloud environments. The template is compatible with all major \LaTeX distributions that support `latexmk`, `biber`, and the modern `memoir` class infrastructure.

`novathesis` may be used on:

- **macOS** systems through the MacTeX distribution;
- **GNU/Linux** systems through the TeXLive distribution;
- **Windows** systems through the MiKTeX distribution;
- **Cloud environments** such as Overleaf (subject to certain limitations).

The following sections provide detailed installation procedures for each platform, followed by general requirements and post-installation checks.

2.2 System Requirements

To compile documents using the `novathesis` class, the following components are required:

- A complete \LaTeX distribution (MacTeX, TeXLive, or MiKTeX) released in or after 2022;
- The auxiliary build tools `latexmk` and `make`;
- A bibliography processor (`biber`, preferred, or `bibtex`);
- A modern PDF viewer (such as Preview, Evince, or SumatraPDF);
- For XeLaTeX or LuaLaTeX compilation, access to OpenType or system fonts.

The `novathesis` class does not depend on any non-standard binary tools or external scripts. All operations can be performed within a standard \LaTeX installation.

2.3 Installation on macOS (MacTeX)

2.3.1 Step 1: Install MacTeX

MacTeX provides a complete and self-contained L^AT_EX environment for macOS. It can be obtained from:

<https://tug.org/mactex/>

Download and install the MacTeX.pkg package (approximately 5 GB). This installation includes TeXLive, latexmk, biber, and common front-ends such as TeXShop.

2.3.2 Step 2: Verify the Installation

After installation, open the Terminal and run:

```
which pdflatex
which latexmk
which biber
```

If these commands return valid paths (usually under /Library/TeX/texbin), the system is correctly configured. You may also verify the distribution version:

```
pdflatex --version
biber --version
```

2.3.3 Step 3: Obtain the novathesis Template

Clone or extract the template into a working directory of your choice, for example:

```
cd ~/Documents/Thesis
git clone https://github.com/<your-org>/novathesis.git
```

Alternatively, download and extract the ZIP archive.

2.3.4 Step 4: Compile a Test Document

Within the project directory, run:

```
make xe
```

or equivalently:

```
latexmk -xelatex template.tex
```

If compilation completes without error, the environment is operational. The generated template.pdf will appear in the same directory.

2.4 Installation on GNU/Linux (TeX Live)

2.4.1 Step 1: Install TeX Live

Most Linux distributions provide TeX Live via their package manager. For a full installation, execute one of the following commands:

- **Debian/Ubuntu:**

```
sudo apt install texlive-full
```

- **Fedora:**

```
sudo dnf install texlive-scheme-full
```

- **Arch Linux:**

```
sudo pacman -S texlive-most biber
```

The `texlive-full` or equivalent meta-package ensures that all dependencies used by `novathesis` are available.

2.4.2 Step 2: Verify the Installation

Check the presence of required tools:

```
which pdflatex
which biber
which latexmk
```

All should return executable paths. If any are missing, install them individually using the package manager.

2.4.3 Step 3: Obtain and Compile

Download or clone the template, then compile as follows:

```
git clone https://github.com/<your-org>/novathesis.git
cd novathesis
make pdf      # or make xe / make lua
```

When using XeLaTeX or LuaLaTeX, ensure that system fonts referenced in your chosen font theme are installed on the machine.

2.5 Installation on Windows (MiKTeX)

2.5.1 Step 1: Install MiKTeX

MiKTeX provides an integrated package manager and is well suited for Windows systems. Download the installer from:

<https://miktex.org/download>

Run the installer with administrative privileges and select *Install missing packages on-the-fly*: Yes.

2.5.2 Step 2: Verify the Installation

Open the **MiKTeX Console** and ensure that the following packages are installed:

```
latexmk, biber, biblatex, memoir.
```

Alternatively, from the Command Prompt:

```
latexmk --version  
biber --version
```

2.5.3 Step 3: Obtain the Template

Download the project ZIP or clone it using Git:

```
git clone https://github.com/<your-org>/novathesis.git  
cd novathesis
```

2.5.4 Step 4: Compile the Template

Run the following in the Windows Command Prompt or PowerShell:

```
latexmk -pdf template.tex
```

or

```
make pdf
```

If the command `make` is not available, it may be installed through `Git Bash` or `MinGW`. The produced `template.pdf` should appear in the same directory upon successful compilation.

2.6 Installation in Overleaf (Cloud)

2.6.1 Overview

The `novathesis` template can also be compiled within **Overleaf**, an online \LaTeX editing environment. However, due to its size, modularity, and dependence on `latexmk` and `biber`, full compilation of `novathesis` requires an **Overleaf Professional or Group Plan**. Free-tier accounts do not provide sufficient memory or compilation time to complete the build.

2.6.2 Step 1: Create a New Project

1. Log in to Overleaf at <https://www.overleaf.com>.
2. Create a new blank project.
3. Upload the entire `novathesis` directory structure (including subfolders). This may be done via drag-and-drop or by uploading a ZIP archive.

2.6.3 Step 2: Configure the Compiler

Open the **Menu** (top left) and set the compiler to:

XeLaTeX or LuaLaTeX

depending on your selected font configuration. Ensure that the bibliography tool is set to `Biber`.

2.6.4 Step 3: Compile

Click **Recompile**. The process may take several minutes depending on server load and account limits. If compilation fails with memory or time errors, consider building locally or upgrading the Overleaf account.

2.6.5 Step 4: Managing Large Projects

Due to file system limitations, it is recommended to:

- Avoid uploading unnecessary figures or datasets;
- Use compressed image formats (`.pdf`, `.png`);
- Use Overleaf's *Git integration* to synchronize changes with a local copy.

2.7 Post-installation Validation

After installation and initial compilation, verify the following:

1. The file `template.pdf` was generated without errors;

2. The title page and metadata match your configuration in `0-Config/1_novathesis.tex`;
3. Bibliography entries from `4-Bibliography/bibliography.bib` appear correctly;
4. Figures included from `5-Figures/` display as expected;
5. Language settings (captions, lists, chapter titles) match the selected `mainlanguage`.

Once validated, the environment is ready for content development.

2.8 Maintenance and Updates

The `novathesis` template may evolve with newer releases of \LaTeX or institutional requirements. To update an existing installation:

- If using Git, pull the latest changes:

```
git pull origin main
```

- If using a ZIP distribution, download the new version and replace the class and configuration files as needed.

Always back up your `0-Config` and content folders before applying updates.

2.9 Summary

This chapter outlined the procedures for installing `novathesis` across all supported environments. Local installations are recommended for large or complex projects, as they offer full control and faster compilation times. Cloud-based compilation through Overleaf remains convenient for collaboration, provided that a Professional or institutional account is used.

Subsequent chapters describe how to configure, customize, and extend the template for your specific academic institution and degree requirements.

Getting Started

3.1 Purpose of this Chapter

This chapter provides a step-by-step guide for first-time users of the `novathesis` template. It describes the project layout, configuration workflow, and basic compilation commands required to produce the initial document. By the end of this chapter, the user should be able to compile a complete sample thesis and understand where to insert their own content.

3.2 Project Layout

The `novathesis` project follows a clear and modular directory structure. Each directory serves a specific role in the composition of the thesis.

```
-
|-- 0-Config/           Configuration files (edit here)
|-- 1-FrontMatter/      Abstracts, acknowledgments, acronyms, etc.
|-- 2-MainMatter/       Chapters and main content
|-- 3-BackMatter/       Appendices, lists, glossary, index
|-- 4-Bibliography/     Bibliographic databases (.bib files)
|-- 5-Figures/          Figures and illustrations
|-- \gls{novathesis}Files/ Internal assets (do not modify)
|-- template.tex        Main document file
|-- novathesis.cls      Class definition (do not modify)
|-- Makefile            Build automation tool
```

Users should restrict their edits to the configuration and content directories. All other files are maintained by the template and should remain unchanged to ensure compatibility with future versions.

3.3 The Role of `template.tex`

The file `template.tex` serves as the entry point of the entire project. It loads the `novathesis.cls` class, applies the selected configuration, and defines the logical order of document parts:

- Front matter (cover, abstract, acknowledgments);
- Main matter (chapters);
- Back matter (appendices, lists, and bibliography).

Users are not expected to modify `template.tex` beyond minor customizations such as adjusting the sequence of included chapters. All document-level settings are controlled through configuration files located in `0-Config/`.

3.4 Configuration Overview

The configuration subsystem is divided into modular files that correspond to different functional areas. Each file can be opened and edited independently.

- `0-Config/1_novathesis.tex` – Main template configuration (document type, language, school, author, title, year);
- `0-Config/2_biblatex.tex` – Bibliography and citation options;
- `0-Config/3_cover.tex` – Cover page customization;
- `0-Config/4_files.tex`, `5_packages.tex`, `6_list_of.tex` – File management and auxiliary packages;
- `0-Config/9_<school>.tex` – Institutional presets (logos, formatting rules).

The most common user actions involve editing `1_novathesis.tex` to set document metadata and institutional parameters.

3.5 First-Time Setup

To create a new thesis, follow the procedure below.

3.5.1 Step 1: Copy the Template

Create a working copy of the template directory in your preferred location. For example:

```
cp -r novathesis ~/Documents/MyThesis
cd ~/Documents/MyThesis
```

3.5.2 Step 2: Edit the Main Configuration File

Open `0-Config/1_novathesis.tex` in a text editor and review the default configuration. Update the following fields as appropriate:

```
\ntsetup{
  doctype=msc,
  school=nova/fct,
  mainlanguage=en,
  title={Deep Learning for Image Segmentation},
  author={John Doe},
  degree={Master of Science in Computer Engineering},
  department={Department of Electrical and Computer Engineering},
  year=2025
}
```

Each option may be commented or adjusted according to your requirements. The `school` parameter activates the corresponding institutional preset.

3.5.3 Step 3: Verify Language Settings

The option `mainlanguage` determines the automatic translation of all structural elements (captions, lists, and headings). Supported values include:

`en, pt, es, fr, de, it, gr, uk.`

Changing the main language automatically loads the corresponding translation file from `novathesisFiles/Strings/`.

3.5.4 Step 4: Configure the Bibliography

Open `0-Config/2_biblatex.tex` and ensure that the bibliography processor and citation style are correctly set. For most users, the default configuration is appropriate:

```
\ntbibsetup{
  backend=biber,
  style=authoryear-comp,
  sorting=nyt
}
```

The bibliography database is located in `4-Bibliography/bibliography.bib`. Add your references to this file following the standard Bib^LA^TE^X syntax.

3.6 Compiling the Document

Compilation may be performed either through the provided `Makefile` or manually using `latexmk`. The `Makefile` automates all steps required to produce the final PDF, including multiple compilation passes and bibliography generation.

3.6.1 Using the Makefile

In the project root directory, execute one of the following commands:

```
make pdf      # Build with pdfLaTeX
make xe       # Build with XeLaTeX (recommended for modern fonts)
make lua      # Build with LuaLaTeX
make clean    # Remove temporary files
make view     # Compile and open the resulting PDF
```

The `Makefile` automatically detects the configuration from `1_novathesis.tex`. Users do not need to specify the school or language explicitly.

3.6.2 Manual Compilation with `latexmk`

For environments without `make`, the document may be compiled directly as follows:

```
latexmk -xelatex template.tex
```

or, for a pdf^AT_EX build:

```
latexmk -pdf template.tex
```

To clean intermediate files, use:

```
latexmk -c
```

3.7 Viewing the Output

Upon successful compilation, a file named `template.pdf` will be generated in the same directory. Open this file with a PDF viewer to verify that:

1. The title page contains your name, title, and institution;
2. Chapter headings and page numbering appear correctly;
3. The sample text compiles without missing references or citations.

3.8 Editing Content Files

After confirming that the template builds correctly, begin replacing the sample material with your own content.

3.8.1 Front Matter

Edit the files located in 1-FrontMatter/:

- `abstract.tex` – Abstract of the thesis;
- `acknowledgments.tex` – Acknowledgment section;
- `acronyms.tex` – List of acronyms and abbreviations.

3.8.2 Main Matter

Each chapter resides in 2-MainMatter/. To add a new chapter, duplicate an existing file and update the chapter title:

```
\chapter{Background and Literature Review}  
\label{chap:background}
```

Include the new file in `template.tex` in the appropriate order.

3.8.3 Back Matter

The 3-BackMatter/ directory contains appendices, glossaries, and the bibliography. By default, the bibliography is automatically appended at the end of the document. Additional appendices may be defined using:

```
\appendix  
\chapter{Supplementary Results}
```

3.9 Verifying Bibliography Compilation

If citations appear as question marks ("?"), this indicates that the bibliography has not yet been processed. Execute the following command sequence manually to rebuild:

```
latexmk -xelatex template.tex  
biber template  
latexmk -xelatex template.tex
```

Alternatively, running `make xe` will perform these steps automatically.

3.10 Changing the Document Type

The `doctype` parameter defines the overall structure of the document. Changing its value automatically adjusts formatting elements such as title page content and numbering depth. Supported types include:

`msc, phd, bsc, report, article, book.`

For example:

```
\ntsetup{doctype=phd}
```

3.11 Customizing the Institutional Preset

If your institution is already supported, set the `school` option accordingly. If not, you may define a custom preset by creating a new file `0-Config/9_<school>.tex`. Use one of the existing presets as a template and modify logo placement, cover design, or metadata fields as needed.

3.12 Common Issues During First Compilation

- **Fonts not found:** Ensure the required fonts for your selected theme are installed. Use XeLaTeX or LuaLaTeX for system fonts.
- **Bibliography missing:** Confirm that `biber` is installed and that your references are properly formatted in the `.bib` file.
- **Undefined control sequence:** This usually indicates a missing package. Install the full distribution (`texlive-full` or equivalent).
- **Images not displaying:** Check that figures are located in the `5-Figures/` directory and referenced with the correct relative path.

3.13 Next Steps

After the initial compilation and configuration are successful, the user may proceed to customize fonts, language options, and bibliography styles as described in Chapter 4. Subsequent chapters detail advanced features, including institutional extensions, font themes, and multi-language support.

At this stage, the `novothesis` environment is fully operational. The remaining tasks involve adapting the template to the specific content and academic requirements of your degree program.

Configuration

4.1 Overview

This chapter documents the **novathesis** configuration subsystem as shipped in version 7.6.0. All user-facing configuration is centralized under `0-Config/`. The design separates *global class behaviour* from *project content* and *institutional presets*. Users should edit only the files in `0-Config/` and content folders; the class file `novathesis.cls` and internal assets under `novathesisFiles/` must remain unchanged.

Configuration files (as shipped):

`0-Config/`

<code>0_memoir.tex</code>	% Memoir-class options (low-level layout toggles)
<code>1_novathesis.tex</code>	% Main <code>\gls{novathesis}</code> options (doctype, language, media, styles...)
<code>2_biblatex.tex</code>	% Bibliography backend and style
<code>3_cover.tex</code>	% Cover/front-matter metadata and committee
<code>4_files.tex</code>	% List of included files: abstracts, chapters, appendices...
<code>5_packages.tex</code>	% Extra (user) packages and demo setup
<code>6_list_of.tex</code>	% Which lists to print (figures/tables/algorithms/listings...)
<code>9_*.tex</code>	% Institutional presets (FCT NOVA, IMS, IST, ISEG, FMV, UMinho, UPorto)

Unless stated otherwise, options are applied via the key–value interface `\ntsetup{<key>=<value>}`. Bibliography options use `\ntbibsetup{...}`. Language-string overrides use `\ntlangsetup{...}`.

Editing policy.

- Keep your changes *in place* inside `0-Config/`. Do not modify `novathesis.cls`.
- Prefer uncommenting documented options over inventing new macros.
- When in doubt, search for the option name in the shipped `.tex` files; most defaults are indicated in comments.

4.2 0_memoir.tex: Memoir Options

0_memoir.tex is reserved for options supported by the memoir class (page layout, trims, headers/footers, etc.). Use this file if you need low-level control beyond *novathesis*' high-level keys.

- Place any memoir options or setup here (see the *memman* manual).
- Institution-specific stubs may appear here (e.g., final classification or funding notes for some presets). Keep these commented unless applicable.

4.3 1_novathesis.tex: Main Options

This is the primary configuration file. It exposes the document's global behaviour and presentation. The file is extensively commented; below we summarize the keys as they appear in the shipped template.

Document identity and lifecycle

doctype The document kind.

`\ntsetup{doctype=<value>}` where <value> is one of: phd, phdplan, phdprop, msc, mscplan, bsc, plain.

school Institutional preset identifier (activates 0-Config/9_<...>.tex and internal assets).

Example identifiers as shipped (non-exhaustive; see comments in the file):

```
nova/fct, nova/fct/di-adc, nova/fct/cbbi, nova/fct/blue, nova/fct/green,
nova/fct/brown, nova/fct/red, nova/itqb/gray, nova/itqb/green, nova/fcsh,
nova/ensp,
nova/ims, nova/ims/csig, nova/ims/ddm, nova/ims/dsaa, nova/ims/egi, nova/ims/gi,
nova/ims/gt,
ulisboa/ist, ulisboa/fc, ulisboa/fmv, ulisboa/iseg,
uminho/ead, uminho/ese, uminho/eeng, uminho/elach, uminho/ed, uminho/ec,
uminho/i3bs, uminho/emed, uminho/ie, uminho/ics, uminho/epsi, uminho/eeg,
iscteiul/eta, ips/ests, ipl/isel, ipl/isel/meb,
ulht/deisi, ulht/mge, uporto/fc, other/esep.
```

docstatus Working stage of the document: working (reduced front matter), provisional (submission, no committee), final (final, committee included).

Languages and abstracts

lang Main document language (ISO-639-1 two-letter): en, pt, fr, it, de, es, gr (Greek), uk (Ukrainian).

abstractorder Controls which abstracts print and in which order. Examples:

```
\ntsetup{abstractorder={en,pt,uk,gr}}
\ntsetup{abstractorder={pt={en,pt,fr}}}
```

Default for en: en,pt. For language L: L,en.

lang/extra Additional languages used in the document (beyond those in abstracts), e.g.,

```
\ntsetup{lang/extra={de,es}}
```

Media and pagination

media screen (equal margins, coloured links) or paper (bookish margins, black links).

numberallpages Whether to number all pages (except the cover); default false.

print/index Print a word index at the end; default false.

print/timestamp Print the PDF build timestamp on the cover; default true.

Glossaries and indices

gnumberlist Whether glossary entries list the pages on which they occur (reverse-index behaviour); default true.

Typography and style

style/url Use the main text font for URLs; default = the hyperref default (set explicitly to same to match body font).

style/font Font theme. Shipped style modules under `novathesisFiles/FontStyles/`:

```
bookman, erewhon, libertine, newpx, opensans, scholax,
arial*, calibri*, newsgott*, kieranhealy*, futura*.
```

The styles marked with (*) require XeLaTeX/LuaLaTeX (system/OpenType fonts).

Book spine and debugging

spine/layout no (do not print), full (full page), trim (print and crop to spine width).
Default trim for docstatus=final, otherwise no.

spine/width Force a specific spine width (e.g., 2cm). Default is an automatic width assuming double-sided 80 g/m² paper.

debug {cover,spine} prints cover grids and spine markers for development.

4.4 2_biblatex.tex: Bibliography

This file configures the bibliography backend and common styles via `\ntbibsetup`. The shipped defaults favour biblatex+biber.

backend biber (default) or bibtex.

style Exemplos provided (uncomment exactly one):

```
% Numeric styles:
% \ntbibsetup{style=numeric-comp, sortcites=true, sorting=none}
% Alphabetic style:
% \ntbibsetup{style=alphabetic, sortcites=true, sorting=nyt}
% Author-year (compact):
% \ntbibsetup{style=authoryear-comp, sortcites=true, sorting=nyt}
% APA-like (natbib compatibility):
% \ntbibsetup{backend=biber,natbib=true,style=apa}
```

Notes.

- Use `\textcite` for “Author (year)” and `\parencite` for “(Author, year)”.
- When switching backends, *clean* the build (`make clean`) and recompile.

4.5 3_cover.tex: Cover and Front Matter

Cover metadata, degree names, optional specialization, sponsors, and committee are defined here using high-level macros.

Titles

Use `\nttitle(type,lang){text}` with: `type` \in {main, sub, spine}, `lang` \in available languages.

```
\nttitle(main,en){A Very Long and Impressive\\Thesis Title}
\nttitle(main,pt){Um Título de Tese Longo\\e Impressionante}
\nttitle(sub,en){Some thoughts on the Life, the Universe,\\and Everything Else}
% \nttitle(spine,en){A Very Long and Impressive Thesis Title} % (no manual line breaks)
```

Degree, specialization, sponsors

```
% Degree label (only defines if still undefined elsewhere):
\ntdegree*name*(pt){Nome do Programa de Estudos}
\ntdegree*name*(en){Study Program Name}
```

```
% Optional specialization (defines if undefined):  
\ntsPECIALIZATION*(pt){Designação da Especialidade}  
\ntsPECIALIZATION*(en){Specialization Name}
```

```
% Optional list of sponsors (per language):  
% \ntsponsors(en){Company A, Grant X, ...}  
% \ntsponsors(pt){Empresa A, Bolsa X, ...}
```

Committee

Add committee members with role and gender markers:

```
\ntaddperson{committee}(<role>,<gender>){Name, Position, Institution}
```

Roles: c (chair), r (rapporteur), a (adviser), ca (co-adviser), m (member), g (guest). Gender: m (male), f (female).

```
\ntaddperson{committee}(c,m){Chair Name, Full Professor, FCT-NOVA}  
\ntaddperson{committee}(r,m){Rapporteur Name, Associate Professor, Other Univ.}  
\ntaddperson{committee}(m,f){Member Name, Assistant Professor, Another Univ.}  
% \ntaddperson{committee}(a,m){Adviser present, Assoc. Prof., University}  
% \ntaddperson{committee}(ca,f){Co-adviser present, Assoc. Prof., University}  
% \ntaddperson{committee}(g,m){Guest member, Title, Institution}
```

Institution-specific guidance. Some Schools request additional fields (e.g., sponsors, SDGs, exam date, embargo). See Section 4.9.

4.6 4_files.tex: File Inventory

This file enumerates the content files that compose your thesis. Use `\ntaddfile` with the appropriate *kind*:

bib Bibliography databases (.bib):

```
\ntaddfile{bib}{bibliography.bib}  
% \ntaddfile{bib}{another.bib}
```

dedicatory, acknowledgements, quote Printed only for final document types (bsc, msc, phd):

```
\ntaddfile{dedicatory}{dedicatory}  
\ntaddfile{acknowledgements}{acknowledgements}  
\ntaddfile{quote}{quote}
```

abstract[lang] Abstracts in multiple languages:

```
\ntaddfile{abstract}{pt}{abstract-pt}
\ntaddfile{abstract}{en}{abstract-en}
% \ntaddfile{abstract}{de}{abstract-de}
% \ntaddfile{abstract}{es}{abstract-es}
% \ntaddfile{abstract}{fr}{abstract-fr}
```

chapter Chapters (optionally restricted to some doctypes):

```
\ntaddfile{chapter}{chapter1}
\ntaddfile{chapter}{chapter2}
\ntaddfile{chapter}{chapter3}
\ntaddfile{chapter}{chapter4}
% Examples:
% \ntaddfile{chapter}{phd}{my-chapter}
% \ntaddfile{chapter}{phd,phdplan}{proposal-background}
```

appendix, annex Back matter:

```
\ntaddfile{appendix}{appendix1}
\ntaddfile{appendix}{appendix2}
\ntaddfile{annex}{annex1}
```

cover[slot] User-defined covers (override standard ones): slot \in 1 (front), N (back), spine.

```
% \ntaddfile{cover}[1]{cover-front}
% \ntaddfile{cover}[N]{cover-back}
% \ntaddfile{cover}[spine]{cover-spine}
% Disable second cover if needed:
% \ntsetup{print/secondcover=false}
```

4.7 5_packages.tex: Extra Packages

This file is intended for user-level package additions and language-string overrides. The shipped file includes *demo packages* for examples (e.g., float, wrapfig); remove these in production.

Language-string overrides. Use `\ntlangsetup{<lang>/<key>=<value>}` to redefine localized strings (e.g., ToC name):

```
% \ntlangsetup{pt/contentsname=O MEU ÍNDICE}
% \ntlangsetup{en/contentsname=MY TABLE OF CONTENTS}
```

Listings and minted. If you enable listings or minted, Section 4.8 shows how the corresponding “List of Listings” is enabled automatically.

4.8 6_list_of.tex: Lists to Print

Controls which *lists* appear (List of Figures, Tables, Algorithms, Listings, etc.) using `\ntaddlistof{<name>}`. The file also contains logic that adds certain lists automatically if the corresponding package is loaded.

```
\ntaddlistof{listoffigures}
\ntaddlistof{listoftables}
```

Algorithm lists are added depending on the package in use (`algorithm2e`, `algorithms`, `algorithm`, or `coloredtheorem`). Listings are added for `listings` (`lstlistoflistings`) or `minted` (`listoflistings`).

Glossaries. To print the glossaries-related lists, uncomment:

```
% \ntaddlistof{listsofglossaries}
```

4.9 Institutional Presets (9_*.tex)

The files `9_*.tex` specialize cover metadata, degree names, and School-specific requirements. Select the preset with `\ntsetup{school=<id>}` in `1_novathesis.tex`. Below are the salient controls present in the shipped presets.

NOVA / FCT (9_nova_fct.tex)

- **Department.** Uncomment exactly one `\ntdepartment(lang){...}` pair to set your Department (Portuguese and English variants are provided; list updated as of 2024–09–08).
- **Degree name.** A comprehensive catalogue of `\ntdegreename(pt){...}` and `\ntdegreename(en){...}` entries is provided for both PhD and MSc programmes. Uncomment the pair corresponding to your degree.
- **ADC report (DI).** Optional company fields for DI/ ADC reports:

```
% \ntsetup{nova/fct/company/logo=google-logo}
% \ntsetup{nova/fct/company/name=Google}
```

NOVA / IMS (9_nova_ims.tex)

- **Sustainable Development Goals (SDGs).** The file lists SDG labels (EN/PT). Add the SDGs relevant to your work to the internal list as instructed in the comments (keep labels consistent).

ULisboa / IST (9_ulisboa_ist.tex)

- **Final classification.** Set the final grade for the statement if required:

```
\ntsetup{classification=Aprovado com ...}
```

- **Funding.** Optionally list funding agencies:

```
% \ntsetup{funding={{FCT, projeto #1234 1234 1234},{UE, projeto #9876 ABCD}}}
```

ULisboa / ISEG (9_ulisboa_iseg.tex)

- **Funding.** Same mechanism as above (uncomment and edit).

ULisboa / FMV (9_ulisboa_fmv.tex)

- **Exam date.** Uncomment and set the year if mandated.
- **Embargo.** Period I (Immediate), 6, or 12 months; optional justification text.

```
% \ntsetup{embargo/period=6}
```

```
% \ntsetup{embargo/justification}{Motivo do embargo temporário.}
```

- **Reproduction rights.** I (integral), P (partial), N (none).

UMinho (all) (9_uminho.tex)

- **Creative Commons modifier.** Select a CC variant (default is by-nc-sa); uncomment to override:

```
% \ntsetup{copyrightmodifier=by-nc-sa}
```

- **Covers.** Skip the verso pages of covers for certain doctypes:

```
% \ntsetup{skipblankcovers=true}
```

- **Integrity statement.** Optionally remove the signature line:

```
% \ntsetup{signatureline=false}
```

UPorto / FC (9_uporto_fc.tex)

- **Final classification and funding.** Same mechanisms as IST; uncomment and edit if applicable.

4.10 Fonts and Engine Selection

If you choose a font style that relies on system/OpenType fonts (arial, calibri, newsgott, kieranhealy, futura), compile with XeLaTeX or LuaLaTeX:

```
make xe    % or: latexmk -xelatex template.tex
make lua   % or: latexmk -lualatex template.tex
```

Classical LaTeX font packages (bookman, erewhon, libertine, newpx, opensans, scholax) work with pdfLaTeX as well.

4.11 Abstracts and Multilingual Documents

Abstract files are declared per language in `4_files.tex`. The language order is controlled by `abstractorder` (Section 4.3). Additional per-language string overrides can be placed in `5_packages.tex` using `\ntlangsetup`. Language definitions and default strings reside under `novathesisFiles/Strings/` (EN, PT, ES, FR, DE, IT, GR, UK).

4.12 Lists, Indices, and Glossaries

Adjust which lists appear via `6_list_of.tex`. The template auto-detects algorithms/listings packages and adds corresponding lists when present. To generate glossaries/acronyms/symbols, ensure the relevant packages are loaded in `5_packages.tex` and add `listsofglossaries` if desired.

4.13 Best Practices and Validation

- **Change one thing at a time.** After editing `1_novathesis.tex`, run a clean build (`make clean`) before testing typography or cover changes.
- **Keep institutional choices localized.** Prefer editing only the corresponding `9_<school>.tex`.
- **Avoid conflicts.** Do not redefine class internals in `5_packages.tex`; use documented keys or language overrides.
- **Back up configuration.** Before upgrading the template, copy your `0-Config/` and `4-Bibliography/` folders.

4.14 Minimal Configuration Checklist

1. Set `doctype` and `docstatus` in `1_novathesis.tex`.
2. Select `school` and complete the corresponding `9_<school>.tex` entries (Department, Degree name, SDGs, exam date/embargo if required).

3. Configure `lang`, `abstractorder`, and declare abstracts in `4_files.tex`.
4. Choose `style/font` and compile with the appropriate engine (pdfLaTeX vs. XeLaTeX/LuaLaTeX).
5. Confirm bibliography backend/style in `2_biblatex.tex`; ensure `biber` is available.
6. Review lists in `6_list_of.tex`; add/remove as required.
7. Remove demo packages from `5_packages.tex` and add only what your project needs.
8. Build with `make xe` (or `make pdf/make lua`), inspect the cover, lists, and bibliography.

Document Structure

5.1 Overview

This chapter describes the logical and physical structure of a `novathesis` document. It explains how the thesis is partitioned into front matter, main matter, and back matter; how content files are organized on disk; and how structural elements such as tables of contents, lists, figures, tables, appendices, glossaries, and the bibliography are orchestrated. The intent is to provide a clear, reproducible workflow for authoring and maintaining a large academic document.

5.2 Physical Layout (Project Folders)

`novathesis` separates configuration, content, and internal assets into distinct directories:

```
.
|-- 0-Config/           % User-editable configuration (Chapter~\ref{chap:configuration})
|-- 1-FrontMatter/      % Abstracts, acknowledgments, acronyms, dedication, quotes
|-- 2-MainMatter/       % Chapters (content of the thesis)
|-- 3-BackMatter/       % Appendices, annexes, optional lists (glossaries/index if used)
|-- 4-Bibliography/     % Bibliographic databases (.bib files)
|-- 5-Figures/          % Figures and illustrations (optional subfolders)
|-- \gls{novathesis}Files/ % Internal assets (do not modify)
|-- template.tex        % Main entry point (load class + orchestrate parts)
|-- novathesis.cls      % Class definition (do not modify)
```

Content files (`.tex`) live under the 1-, 2-, and 3- directories. The inclusion order is defined declaratively in `0-Config/4_files.tex`, which the class reads to assemble the final document.

5.3 Logical Layout (Front/Main/Back Matter)

`novathesis` adopts the conventional *front matter* / *main matter* / *back matter* partitioning set by the `memoir` class, and augments it with institutional and multilingual features.

5.3.1 Front Matter

Front matter contains the cover, the title and formal pages required by the institution, and optional elements such as dedication, acknowledgments, quotes, and multilingual abstracts. Typical elements include:

- Cover (front, verso, optional second cover; generated from metadata in `0-Config/3_cover.tex` and the selected preset);
- Title and approval pages (preset-dependent);
- Dedication (`1-FrontMatter/dedicatory.tex`, optional);
- Acknowledgments (`1-FrontMatter/acknowledgements.tex`, optional);
- Quotes/epigraphs (`1-FrontMatter/quote.tex`, optional);
- Abstracts in one or more languages (files declared in `4_files.tex`);
- Table of Contents and lists (Figures, Tables, etc.), depending on `0-Config/6_list_of.tex`.

Front matter pages are typically numbered with lowercase Roman numerals, per standard academic convention, unless otherwise specified by the institutional preset.

5.3.2 Main Matter

Main matter includes the core scientific content—chapters and their subordinate sections. Each chapter is a separate file under `2-MainMatter/` and is declared in `0-Config/4_files.tex` using the chapter kind. Arabic page numbering begins at the first page of the main matter.

5.3.3 Back Matter

Back matter includes appendices or annexes, glossaries, indices, and the bibliography. Appendices are regular chapter-level units declared with the kinds `appendix` or `annex` in `4_files.tex`. The bibliography is automatically placed at the end and is built from the `.bib` files declared in `4_files.tex`.

5.4 Orchestration via 0-Config/4_files.tex

The file 0-Config/4_files.tex serves as the canonical inventory of document parts. Use `\ntaddfile{<kind>[<selector>]{<name>}` to register files, where <name> is the base-name without extension.

Front Matter examples

```
% Dedication / Acknowledgments / Quote (optional)
\ntaddfile{dedicatory}{dedicatory}
\ntaddfile{acknowledgements}{acknowledgements}
\ntaddfile{quote}{quote}

% Abstracts for given languages (file names under 1-FrontMatter/)
\ntaddfile{abstract}[en]{abstract-en}
\ntaddfile{abstract}[pt]{abstract-pt}
```

Chapters (Main Matter)

```
% Chapters in order (files under 2-MainMatter/)
\ntaddfile{chapter}{chapter1}
\ntaddfile{chapter}{chapter2}
\ntaddfile{chapter}{chapter3}

% Restrict a chapter to specific doctypes if needed:
% \ntaddfile{chapter}[phd]{literature-review}
% \ntaddfile{chapter}[phd,phdplan]{proposal-background}
```

Back Matter

```
% Appendices / Annexes (files under 3-BackMatter/)
\ntaddfile{appendix}{appendixA}
\ntaddfile{appendix}{appendixB}
\ntaddfile{annex}{annex1}

% Bibliography databases (files under 4-Bibliography/)
\ntaddfile{bib}{bibliography.bib}
% \ntaddfile{bib}{secondary.bib}
```

Covers (optional override)

```
% User-supplied covers (override preset cover pages)
% \ntaddfile{cover}[1]{cover-front}
```

```
% \ntaddfile{cover}[N]{cover-back}
% \ntaddfile{cover}[spine]{cover-spine}

% Disable versus/second cover if your institution does not require it:
% \ntsetup{print/secondcover=false}
```

Best practice. Maintain the master sequence in `4_files.tex` only. Avoid manual `\input` in `template.tex`, which is reserved for class-level orchestration.

5.5 Chapters and Sectioning

A typical chapter file under `2-MainMatter/` begins with a chapter declaration, an optional label, and freely-structured sections:

```
\chapter{Background and Related Work}
\label{chap:background}

\section{Problem Setting}
...

\subsection{Assumptions}
...

\section{Related Work}
...
```

Numbering and depth. Section numbering and ToC depth follow the class defaults and may be tuned via memoir options in `0-Config/0_memoir.tex` if strictly required by the institution.

Labels and references. Label chapters as `\label{chap:<name>}` and sections as `\label{sec:<name>}`. Use `\ref` for numbered references, `\nameref` for titles, and `\autoref` when `hyperref` is active. For figures and tables, prefer `\vref` (from `varioref`) if you require “on the next page” messages.

5.6 Figures, Tables, Algorithms, and Listings

5.6.1 Figures

```
\begin{figure}
  \centering
  \includegraphics[width=.8\linewidth]{5-Figures/method/overview}
```

```
\caption{Method overview.}
\label{fig:method-overview}
\end{figure}
```

Store graphics under 5-Figures/ and reference using relative paths. For vector material, prefer PDF; for bitmap, PNG at print resolution.

5.6.2 Tables

```
\begin{table}
\centering
\caption{Hyperparameters used in all experiments.}
\label{tab:hyperparams}
\begin{tabular}{lcl}
\toprule
Name & Value & Notes\\
\midrule
Batch size & 64 & --- \\
Learning rate & 1e-3 & warm-up 1k steps \\
\bottomrule
\end{tabular}
\end{table}
```

Use booktabs rules (`\toprule`/`\midrule`/`\bottomrule`) for professional tables.

5.6.3 Algorithms and Listings

`novathesis` detects algorithm/listing packages and adds corresponding “List of ...” entries when enabled. Select one algorithm package (e.g., `algorithm2e` or `algorithms`) and optionally listings or minted for code.

```
% In 5_packages.tex (example)
% \usepackage[ruled,vlined]{algorithm2e}
% \usepackage{listings} % or: \usepackage{minted}
```

Then enable the lists in `0-Config/6_list_of.tex` (see Chapter 4).

5.7 Tables of Contents and Lists

The Table of Contents (ToC) is generated automatically. Additional lists (Figures, Tables, Algorithms, Listings, Glossaries) are controlled by `0-Config/6_list_of.tex`:

```
\ntaddlistof{listoffigures}  
\ntaddlistof{listoftables}  
% auto: listofalgorithms, lstlistoflistings or listoflistings (if packages loaded)  
% glossaries bundle (if in use):  
% \ntaddlistof{listsofglossaries}
```

ToC naming and localization. Override localized names via `\ntlangsetup` in `5_packages.tex` if your institution uses nonstandard terminology.

5.8 Mathematics, Theorems, and Cross-Referencing

For formal statements, you may use standard theorem packages. When institutional requirements demand a *List of Theorems*, enable the corresponding package support (some presets leverage `coloredtheorem`). Cross-reference theorems with `\label/\ref`, and ensure numbering schemes are consistent across chapters.

5.9 Appendices and Annexes

Appendices and annexes are separate streams of chapter-level content placed after the main matter. Declare them in `0-Config/4_files.tex`:

```
\ntaddfile{appendix}{appendixA}  
\ntaddfile{annex}{annex1}
```

Within the appendix file, `novathesis` switches to appendix mode automatically; you should structure content with `\chapter{...}` and optional sections as needed.

5.10 Glossaries, Acronyms, and Symbols

If your thesis uses glossaries or a list of acronyms, load the relevant packages in `5_packages.tex` and define entries in dedicated files (commonly under `1-FrontMatter/`). When enabled, add the glossaries list in `6_list_of.tex`:

```
% \ntaddlistof{listsofglossaries}
```

Ensure the build toolchain includes the glossary make step when required by your chosen package (the provided Makefile and `latexmk` rules typically handle it).

5.11 Bibliography Integration

Bibliographic databases are declared in `0-Config/4_files.tex` with the `bib` kind:

```
\ntaddfile{bib}{bibliography.bib}
% \ntaddfile{bib}{bibliography_doi.bib}
```

Citation style and backend settings are defined in `0-Config/2_biblatex.tex`. Use `\textcite`, `\parencite`, and related commands consistently. The bibliography renders at the end of the back matter as part of the class' standard sequence.

5.12 Language and Multi-Abstract Handling

Abstracts are per-language files declared in `4_files.tex`. The order in which abstracts appear is governed by `abstractorder` in `1_novathesis.tex` (see Chapter 4). Localization of structural strings (captions, list titles, ToC labels) is automatic based on the main language; override specific strings using `\ntlangsetup`.

5.13 Cover, Second Cover, and Spine

Covers and spine are generated from metadata in `0-Config/3_cover.tex` and the selected institutional preset. If institutional rules require a second cover, it is produced automatically; disable it if not needed:

```
% 0-Config/4_files.tex (override behaviour if allowed by your School)
% \ntsetup{print/secondcover=false}
```

User-supplied cover pages may be injected via the `cover kind` (Section 5.4). Spine layout can be toggled and dimensioned through the keys documented in Chapter 4.

5.14 Common Structural Variations

- **Proposal / Plan Documents** (`doctype=phdplan`, `mscplan`): restrict included chapters via the optional selector in `4_files.tex` (e.g., include only background and methodology).
- **Articles or Reports** (`doctype=article`, `plain`): keep the structure minimal—front matter, a single main file, and the bibliography; remove redundant lists in `6_list_of.tex`.
- **Bilingual Documents**: declare multiple abstracts; set `lang/extra` for additional localized strings; ensure figure/table captions meet the main language rules unless your program mandates bilingual captions.

5.15 Quality Assurance Checklist

Before sharing drafts with supervisors or submitting to institutional repositories, verify:

1. **Sequencing:** `4_files.tex` lists all parts in the intended order.
2. **Labels:** every float and structural unit has a unique, descriptive `\label`.
3. **References:** no unresolved references (??) or citations (??).
4. **Lists:** only the required lists are enabled (Figures/Tables/Algorithms/Listings/Glossaries).
5. **Appendices:** numbering and headings conform to institutional rules.
6. **Language:** abstract order and ToC/labels reflect the main language and institutional policy.
7. **Cover:** metadata, committee, sponsors/funding (if applicable) are accurate and consistent.

5.16 Summary

`novathesis` enforces a clean separation between configuration and content while adhering to academic structuring conventions. Define content files in `0-Config/4_files.tex`, keep chapter files modular under `2-MainMatter/`, and allow the class to assemble front matter, lists, back matter, and bibliography in a predictable sequence. Following the practices outlined in this chapter ensures maintainability and compliance with institutional requirements.

Bibliography

- [1] R. J. Dias et al. “Verification of Snapshot Isolation in Transactional Memory Java Programs”. In: *Proceedings of the 26th European conference on Object-oriented programming (ECOOP’12)*. Springer-Verlag, 2012-06 (cit. on p. [45](#)).

NOVAthesis covers showcase

This Appendix shows examples of covers for some of the supported Schools. When the Schools have very similar covers (e.g., all the schools from Universidade do Minho), just one cover is shown. If the covers for MSc dissertations and PhD thesis are considerable different (e.g., for FCT-NOVA and UMinho), then both are shown.

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Appendix 2 Lorem Ipsum

This is a test with citing something [\[1\]](#) in the appendix.

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Annex 1 Lorem Ipsum

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