The Coppe document class
Version 4.0

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Abstract

This document describes the coppe document class as well as other files distributed by the CoppeTEX project. This class is suitable for writing academic dissertations, thesis and qualifying exams according to the formatting rules of "Coppe - Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia". The set of macro commands allows its users to concentrate most of their efforts on text composition rather than on the document layout.

1 Introduction

Writing documents in LaTeX may be a laborious task when the authors have to prepare their manuscripts rigorously respecting formatting rules imposed by publishers or organizations. Regardless of difficulty, a lot of thesis presented to "Coppe - Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia" of the "Universidade Federal do Rio de Janeiro (UFRJ)" is typeseted in LaTeX. This demand motivated the creation of the CoppeTEX project, which tries to facilitate and encourage the use of LaTeX within the Coppe/UFRJ scope.

The Coppe document class is the main product of CoppeTEX. It was designed to be clear and succinct. It enables the creation of dissertations, qualifying exams and thesis in a simple and automatic way. The main goal of the Coppe class is to maintain authors strictly focused on text composition without worrying about margins sizes, line spacing, paper size, vertical and horizontal alignment, etc. The CoppeTEX project comprehends also BibLaTeXand MakeIndex style files for creating lists of references, symbols and abbreviations. Although there aren't official guidelines to write qualifying exams, we provide this option just for convenience, as this exam is a requisite to obtain the DSc degree and, for some of the programs, the MSc degree.

The following sections describes the user interface of the Coppe class. It also provides details on the use of the style files mentioned above. Throughout this document, the term *thesis* is used generically to refer to a dissertation, qualifying exam, or thesis proper.

In 2025, a new version of ABNT and new rules from UFRJ were brought to this package, leading to a great overhaul to support three languages, Brazilian Portuguese (br), English and Spanish, resulting in version 4.0.

2 License

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To see the full text of the GNU GPL license, go to the `COPYING` file attached to this package.

3 Support

Bug reports, as well as new feature requests, should be directed to https://github.com/Coppe-UFRJ/CoppeTeX. Create an "Issue" with your demand.

4 User interface

`\frontmatter` `\mainmatter` `\backmatter`

A thesis to be approved by the Academic Registry at Coppe/UFRJ must contain three-parts: *front*, *main* and *back* matters **TNR08a**. Each one of these parts is started by calling its corresponding macro `\frontmatter`, `\mainmatter` or `\backmatter`. The front matter of a thesis consists of front cover and face, cataloging page, dedication, acknowledgments, abstracts, table of contents, and lists of tables, algorithms, symbols and abbreviations. The main matter is just composed by chapters, while the back matter usually consists of bibliographic references, appendices and index.

You must invoke the `\frontmatter` macro immediately after the `\maketitle` command. The `\mainmatter` command comes right before the first chapter, and `\backmatter` must be typed before the list of references.

Front cover

This element was introduced by the Academic Registry. It is automatically constructed by the `\maketitle` command.

Front face

The front face is unnumbered. There, the document is not allowed to use hyphenation **TNR08a**. It is constructed by calling `\maketitle`. Next, it is described the commands used to enter the information required to create it.

`\author` The `\author` command in CoppeTeXtakes two arguments: the author's first names and surname, e.g., `\author{First Names}{Surname}`. The words should be typed with only first letters in uppercase. This will reflect also in the *Ficha Catalogrática*.

`\title` `\foreigntitle` The macros `\title` and `\foreigntitle` are used to enter the titles of your monograph in the current and foreign languages. The default languages are Brazilian Portuguese and English. The `babel` package is automatically loaded by `Coppe.cls`, so you do not need to load it again. The Brazilian Portuguese is the main language and the English is only required for the foreign abstract. It is also possible to use Spanish.

`\advisor` `\examiner` Every Coppe student is coordinated by at least one advisor. M.Sc. and D.Sc.

students can have at most 2 and 3 advisors, respectively. Their names must be provided by issuing the command `\advisor` as below:

```
\advisor{Title}{Advisor's Name}{Surname}{Degree}
\advisor{Title}{Second Advisor's Name}{Surname}{Degree}
\advisor{Title}{Third Advisor's Name}{Surname}{Degree}
```

The advisors are not necessarily members of the thesis examination board. Thus, it is required to enter the names of all examiners using the `\examiner` macro. The examiners' names are entered differently:

```
\examiner{Title}{First Examiner's Name Surname}{Degree}
\examiner{Title}{Second Examiner's Name Surname}{Degree}
...
\examiner{Title}{N-th Examiner's Name Surname}{Degree}
```

Remember that all names must be given before calling `\maketitle`.

`\department` The Alberto Luiz Coimbra institute is divided into 13 academic units: Biomedical Engineering (PEB), Civil Engineering (PEC), Electrical Engineering (PEE), Mechanical Engineering (PEM), Metallurgical and Materials Science Engineering (PEMM), Nuclear Engineering (PEN), Ocean Engineering (PENO), Energy Planning (PPE), Production Engineering (PEP), Nano Technology (PENT), Chemical Engineering (PEQ), Systems Engineering and Computer Science (PESC), and Transportation Engineering (PET). You must specify your department using one of the above abbreviations, e.g., `\department{PEC}`.

`\date` This macro is used to set the month and year of defense. This information is required to create the front face, cataloging details page and abstracts. For example, October 2007 should be entered as `\date{10}{2007}`.

`\keyword` The keywords should describe the concentration areas of your work. You must provide them as follows:

```
\keyword{First Keyword}
\keyword{Second Keyword}
...
\keyword{N-th Keyword}
```

Usually, six words are enough.

Cataloging details

This page contains cataloging information useful for librarians. Fortunately, it is automatically generated from the data you entered at the time you call `\maketitle`. It is not needed in qualifying exams, though.

Dedication (optional)

`\dedication` This macro was added for convenience. The input text is placed at the right bottom of a blank page. It is emphasized and in normal size.

Abstracts

`abstract` (*env.*)
`foreignabstract` (*env.*)

As stated by the Academic Registry **TNR08a**, abstracts must be in one page each, with at most 250 words. We recommended that they should be only one paragraph long. They must be defined inside the environments `abstract` and `foreignabstract`.

Lists of symbols and abbreviations (optional)

`\abbrev`
`\symbl`

The lists of symbols and abbreviations are optional, although highly recommended. It is a good practice to define a symbol/abbreviation in its first occurrence in the text. To define a symbol use `\symbl[alphabetic symbol]{Symbol}{Symbol Definition}`, and for abbreviations `\abbrev[alphabetic symbol]{Abbreviation}{Abbreviation Definition}`. These commands are called *dummy*, since they don't output anything at the place they are executed, just an entry in the correspondent list.

`\makeloabbreviations`
`\makelosymbols`
`\printloabbreviations`
`\printlosymbols`

These lists are lexicographically sorted by using the MakeIndex program, which is part of any LaTeX implementation. For `\symbl`, if the optional parameter is provided, it will used as sort key. This was later, in 2024, implemented also for `\abbrev`, otherwise `Symbol`, or `Abreviation` will be used as sort key, what can result in an undesirable order if it contains LaTeXcommands, mathematical symbols, or mix of uppercase and lowercase. MakeIndex needs two commands to create a final sorted list: one which generates a list of entries and the other that indicates the position where the list will be printed out. To generate the lists of symbols and abbreviations, the `Coppe` class provides the commands `\makeloabbreviations` and `\makelosymbols`, respectively. They must be called in the document preamble. The commands `\printlosymbols` and `\printloabbreviations` have to be invoked at the point where you want these lists appear, e.g., following the list of tables as showed in the example. Once you call `latex`, it will be created two files with extensions `abx` and `syx`, which contain MakeIndex input data. They must be processed with `makeindex` in order to get the lists correctly produced, redirecting the output to files with extension `lab` and `los` respectively:

```
makeindex -s Coppe.ist -o example.lab example.abx
makeindex -s Coppe.ist -o example.los example.syx
```

Note the `-s` option for specifying the style `Coppe.ist`. Now, rerun `latex` twice to get the references solved and you are done.

References

It is well known that bibliography databases can be easily maintained with the aid of BibTeX. Thus, the CoppeTeX project designed two BibTeX styles, `Coppe-plain.bst` and `Coppe-unsrt.bst`. The `Coppe-plain.bst` creates a list of references alphabetically sorted. The later is a numbered style, which sorts references by the order of citation. To use them, you have to select either `Coppe-plain` or `Coppe-unsrt` as the BibTeX style and include your BibTeX references without the `bib` extension, as in the following example:

```
\bibliographystyle{Coppe-unsrt}
\bibliography{example}
```

As of May 4th, 2023, there are new bibliograhic styles for english, `en-Coppe-plain.bst` and `en-Coppe-plain.bst`, that uses other string constants, such as "Technical Report" instead of "Relatório Técnico".

Run in sequence LaTeX, BibTeX, and twice again LaTeX to resolve reference. These styles are `natbib` compatible. This means that you can freely issue the commands `\citet` and `\citep`, as well as any other `natbib` feature.

Appendix and Annex (Optional)

`\appendix` `\annex` Appendices and annexes are optional chapters that are part of the back matter. The `\appendix` command is a standard LaTeX command used before all appendices. CoppeTeX introduces the `\annex` command, which should be used only in the back matter (i.e., after the `\backmatter` command) and only after all existing `\appendix` chapters. This restriction is due to implementation constraints.

Therefore, the order for backmatter is:

```
\backmatter
\bibliographystyle{Coppe-plain}
\bibliography{main}
\appendix
\chapter{An Appendix}
\chapter{Another Appendix}
\annex
\chapter{First Annex}
\chapter{Second Annex}
```

Annex was introduced in v3.5

5 Class options

There are some options users can specify in order to customize the appearance of the output produced by the `Coppe` class. These options can be passed to `Coppe` as follows: `\documentclass[option1, option2]{Coppe}`. In which follows, we give a brief description of all supported options.

`dsc, msc, dscexam, mscexam` The `Coppe` class is able to produce thesis, dissertations, and qualifying exams, which are enabled by the `dsc`, `msc`, `mscexam`, and `dscexam` options, respectively.

`doublespacing` The default line spacing is one-and-a-half. For enabling double spacing between lines, use the `doublespacing` option.

`numbers` The default citation style is the author-year scheme, which must be followed by the use of its corresponding BibTeX style, namely, the `Coppe-plain.bst` file. For numbered citations, specify the option `numbers` to the `Coppe` class. In this case, it is mandatory the use of `Coppe-unsrt.bst`, as the bibliography style.

`english` CoppeTeX uses Babel. The default language is Portuguese (actually `brazilian`), with English being the second language. If option `english` is used, English becomes the main language and Portuguese the secondary. Look at the Babel package to switch between languages.

5.1 Changing document identification

`\freeconfig` The user could *optionally* use the command `freeconfig` to modify the parameters that print the document identification. The command `freeconfig` needs all those paramerters, which are degree initials, degree name, title, foreign title, local doctype, and foreign doctype as in the following example:

```
\freeconfig{Dr.}{Philosophiae Doctor}{PhD}{Doutor}{Dissertation}{Tese}
```

6 Quick, useful tips

Pictures. The default picture format of LaTeX is the Encapsulated PostScript (EPS). If you use pdfLaTeX, the default format becomes the PDF, but you can equally load PNG files. For such, you must enter the name of your image file without extension, e.g., `\includegraphics{filename}`, and `pdflatex` will firstly look for a file called `filename.pdf` and after for file `filename.png`. For producing high quality pictures with embedded fonts we recommend the Ipe drawing software available here.

Fonts. The default font in LaTeX is the Computer Modern. If you would like to try its enhanced version, consider using the `lmodern` package. To use Times, it is recommended to load the package `mathptmx`, rather than the deprecated `times`. There is also an enhanced Times version available with the `tgtermes` package. You can still use the Arial font face with the package `uarial`.

Hyperref. When working with PDF's, there is the possibility to add extra information to the file as the author's name, document title, subject, keywords, etc. This is easily done with the `hyperref` package. It is also useful to enable hyperlinks. Fortunately, the `Coppe` class will do this automatically if `hyperref` is loaded.

Printing. To get your work correctly printed, you must ensure that any page scaling option (e.g., fit or shrink to printable area) isn't enabled. This kind of option often comes in print dialogs of document visualization softwares.

`longquote` **Quotation** To quote text larger than three lines, according to ABNT, you must increase the left margin to 4 cm, do not use quotation marks, and use a smaller font. The `Coppe` class provides the `longquote` environment to easily make these adjustments.

7 A simple example

```
1 ⟨*example⟩
2 \documentclass[dsc]{Coppe}
3
4 \usepackage{booktabs}% tabelas mais bonitas
5 \usepackage{rotating}% rodando coisas, como tabelas
6 \usepackage{longtable} % tabelas longas
```

```
\usepackage[most]{tcolorbox} % caixas de texto
\usepackage{amsmath,amssymb}
\usepackage{hyperref}
\usepackage{listings} % para usar listagens
\usepackage[natbib,backend=biber,style=coppe]{biblatex}
\addbibresource{coppe.bib}

\makelosymbols
\makeloabbreviations

\begin{document}
  \title{Título da Tese}
  \foreigntitle{Thesis Title}
  \author{Nome do Autor}{Sobrenome}
  \advisor{Prof.}{Nome do Primeiro Orientador}{Sobrenome}{D.Sc.}
  \advisor{Prof.}{Nome do Segundo Orientador}{Sobrenome}{Ph.D.}
  \advisor{Prof.}{Nome do Terceiro Orientador}{Sobrenome}{D.Sc.}

  \examiner{Prof.}{Nome do Primeiro Examinador Sobrenome}{D.Sc.}
  \examiner{Prof.}{Nome do Segundo Examinador Sobrenome}{Ph.D.}
  \examiner{Prof.}{Nome do Terceiro Examinador Sobrenome}{D.Sc.}
  \examiner{Prof.}{Nome do Quarto Examinador Sobrenome}{Ph.D.}
  \examiner{Prof.}{Nome do Quinto Examinador Sobrenome}{Ph.D.}
  \department{PESC}
  \date{01}{2024}

  \keyword{Primeira palavra-chave}
  \keyword{Segunda palavra-chave}
  \keyword{Terceira palavra-chave}

  \maketitle

  \frontmatter
  \dedication{A alguém cujo valor é digno desta dedicatória.}

  \chapter*{Agradecimentos}

  Gostaria de agradecer a todos.

  \begin{abstract}

  Apresenta-se, nesta tese, ...

  \end{abstract}

  \begin{foreignabstract}

  In this work, we present ...

  \end{foreignabstract}

  \tableofcontents
  \listoffigures
  \listoftables
```

```
61  \printlosymbols
62  \printloabbreviations
63
64  \mainmatter
65  \chapter{Introdução}
66
67  Este é um documento exemplo para o uso da classe CoppeTeX, destinado a ajudar os alunos da
68
69  A classe \verb|Coppe| foi criada por Vicente Helano e George Ainsworth, porém, em 2024, é
70
71  A versão mais atual dessa classe é mantida no GitHub, no repositório \url{https://github.c
72
73  Esse documento segue a norma de formatação de teses e dissertações da Coppe. Ele também po
74
75  Esse documento é usado como exemplo de coisas que podem ser feitas. Ele está configurado p
76
77  É importante de notar que essa classe não foi construída sobre a classe \LaTeX \  para a A
78
79  Apesar desse modelo ser muito bom, ele tem um defeito: a limitação do sistema de referênci
80
81  Mais ainda, as regras da Coppe ainda não se adaptaram, no início de 2024, as novas regras
82
83  Este documento não substitui, mas complementa, o documento que descreve a classe.
84
85
86
87 \chapter{Configurações Iniciais}
88
89   A primeira coisa a fazer é escolher o tipo de documento. Isso é feito como uma opção no c
90
91   Como pode ser visto nesse documento, muita coisa pode ser configurada, o que gerará o tra
92
93   Recomendo ler o documento ``The \verb*|Coppe| document class'' para entender melhor todas
94
95 \section{Linguagem principal do texto}
96
97  Essa classe considera que o texto principal está em português e algumas partes específicas
98  \begin{itemize}
99  \item A opção \verb|english| deve ser usada no comando \verb|\documentclass|.
100 \item Os estilos de bibliografia usados devem ser \verb|en-Coppe-plain.bst| ou \verb|en-Cop
101 \end{itemize}
102
103  A variação de linguagem, em inglês ou português apenas, já é suportada pela classe Coppe\T
104
105
106 \section{Por que usar o \LaTeX}
107
108  Há uma grande discussão entre usuário de Word e \LaTeX, principalmente, quanto ao uso dess
109
110  Nós escolhemos o \LaTeX por alguns motivos: grande facilidade de seguir um estilo sem se p
111
112  As principais desvantagens são: idiossincrasias que podem gastar tempo, pouco controle sob
113
114 \section{Como e onde usar o \LaTeX}
```

```
115
116   Existem muitos tutoriais de \LaTeX, mas basicamente, em 2024, ele é usado em dois ambiente
117   \begin{enumerate}
118   \item Na sua máquina, instalando uma versão completa como o Mik\TeX, típico do Windows, ou
119   \item Usar um ambiente na rede, como o Overleaf.
120   \end{enumerate}
121
122   Em todo caso, recomendo fortemente que, ao mesmo tempo, mantenha versões no Git e faça o b
123
124
125 \chapter{Algumas Regras da Coppe}
126
127   Todas abreviaturas e símbolos devem ser definida antes de utilizada. Isso é facilmente fei
128
129   É imprescindível definir os símbolos, tal como o
130   conjunto dos números reais $\mathbb{R}$ e o conjunto vazio $\emptyset$.
131   \symbl{$\mathbb{R}$}{Conjunto dos números reais}
132   \symbl{$\emptyset$}{Conjunto vazio}. Usamos esse exemplo aqui justamente para mostrar como
133
134   Para as listas de abreviaturas e símbolos funcionarem no Overleaf é necessário rodar o \ve
135
136   Como as listas de símbolos e de abreviaturas usamo o mesmo comando usado para criar índice
137
138 \section{Citações}
139
140  Citações curtas podem ser feitas \quote{o comando quote} ou direto com ‘‘duas crases e dois
141
142   \begin{longquote}
143   Um exemplo de citação longa nas regras da ABNT (4cm de recuo e fonte menor)
144   feita com o ambiente  \verb=longquote= The primary objective of this
145   investigation was to determine the feasibility of detecting corrosion in
146   aluminum Naval aircraft components with neutron radiographic interrogation
147   and the use of standard corrosion penetrameters. Secondary objectives
148   included the determination of the effect of object thickness on image quality,
149   the defining of minimum levels of detectability and a preliminary investigation
150   of a means whereby the degree of corrosion could be quantified with neutron
151   radiographic data. \cite{article-example}
152   \end{longquote}
153
154   Citações devem apontar as referências. Para isso, está disponível o ótimo pacote \verb*|na
155
156   Em todo caso, \textbf{deve se tomar enorme atenção com as citações, para evitar ocorrer em
157
158 \chapter{Floats}
159
160 Grande parte dos problemas de iniciantes, e veteranos, em \LaTeX é da localização dos \texti
161
162 A regra geral de posicionamento é que uma figura ou quadro só pode aparecer a partir da mesm
163
164 \textbf{Segundo a norma da ABNT, as legendas} \verb|\caption| \textbf{das figuras e quadros
165
166 Quadros são opcionais. Quando usados, tabelas passam a só conter números, enquanto quadros c
167
168
```

```
\section{Tabelas e Figuras Padrão}

Vamos ver uma tabela padrão, como a \autoref{tab:exemplo_numeros}.

\begin{table}[ht]
\centering % Centraliza a tabela
\caption{Exemplo de Tabela de Números}
\label{tab:exemplo_numeros}
\begin{tabular}{ccc} % Define a quantidade de colunas
\hline % Linha superior
\textbf{Coluna 1} & \textbf{Coluna 2} & \textbf{Coluna 3} \\ % Cabeçalhos
\hline % Linha média
1 & 2 & 3 \\ % Primeira linha de dados
\hline
4 & 5 & 6 \\ % Segunda linha de dados
\hline
7 & 8 & 9 \\ % Terceira linha de dados
\hline
10 & 11 & 12 \\ % Quarta linha de dados
\hline % Linha inferior
\end{tabular}
\end{table}



Já a \autoref{fig:exemplo_figura} é uma figura padrão, com controle da largura.

\begin{figure}[ht]
\centering % Centraliza a figura
\includegraphics[width=0.5\textwidth]{Coppe-logo.pdf} % Inclui a imagem com metade da largur
\caption{Exemplo de Figura com Legenda Abaixo} % Legenda da figura
\label{fig:exemplo_figura} % Etiqueta para referência cruzada
\end{figure}




\section{Tabelas mais elegantes}

Atualmente a tendência é usar tabelas mais leves, como \autoref{tab:exemplo_numerosbom}. Iss

\begin{table}[ht]
\centering % Centraliza a tabela
\caption{Exemplo de Tabela de Números mais elegantes}
\label{tab:exemplo_numerosbom}
\begin{tabular}{ccc} % Define a quantidade de colunas
\toprule % Linha superior
\textbf{Coluna 1} & \textbf{Coluna 2} & \textbf{Coluna 3} \\ % Cabeçalhos
\midrule % Linha média
1 & 2 & 3 \\ % Primeira linha de dados
4 & 5 & 6 \\ % Segunda linha de dados
7 & 8 & 9 \\ % Terceira linha de dados
10 & 11 & 12 \\ % Quarta linha de dados
```

```
\bottomrule % Linha inferior
\end{tabular}
\end{table}

\section{Tabelas Longas ou Largas}

Se sua tabela é muito longa ou larga, existem várias opções.
\begin{itemize}
    \item alterar o tamanho da letra
    \item Usar o longtable
    \item rodar a tabela, fazendo ela em \textit{landscape}
    \item fazer a tabela dentro de um minibox
\end{itemize}


\subsection{Tabelas largas demais}

É comum em teses que as tabelas sejam largas demais. Há várias formas de resolver isso.

A \autoref{tab:tabela_largafns} é larga demais, e nela isso é resolvido diminuindo a fonte p

\begin{table}[ht]
\centering % Centraliza a tabela
\caption{Exemplo de Tabela Larga com Fonte Menor}
\label{tab:tabela_largafns}
\footnotesize % Aplica uma fonte menor para a tabela
\begin{tabular}{cccccccc} % Aumente o número de colunas conforme necessário
\toprule
\textbf{Coluna 1} & \textbf{Coluna 2} & \textbf{Coluna 3} & \textbf{Coluna 4} & \textbf{Colu
\midrule
Dado 1.1 & Dado 1.2 & Dado 1.3 & Dado 1.4 & Dado 1.5 & Dado 1.6 & Dado 1.7 & Dado 1.8 \\
Dado 2.1 & Dado 2.2 & Dado 2.3 & Dado 2.4 & Dado 2.5 & Dado 2.6 & Dado 2.7 & Dado 2.8 \\
Dado 3.1 & Dado 3.2 & Dado 3.3 & Dado 3.4 & Dado 3.5 & Dado 3.6 & Dado 3.7 & Dado 3.8 \\
\bottomrule
\end{tabular}
\end{table}

O comando \verb|\resizebox{width}{height}{content}| permite ajustar o tamanho de qualquer co

\begin{table}[ht]
\centering
\caption{Exemplo de Tabela Redimensionada}
\label{tab:examplerb}
\resizebox{\textwidth}{!}{%
\begin{tabular}{llll}
\toprule
Coluna 1 & Coluna 2 & Coluna 3 & Coluna 4 \\
\midrule
Dados 1 & Dados 2 & Dados 3 & Dados 4 \\
Dados 5 & Dados 6 & Dados 7 & Dados 8 \\
\bottomrule
\end{tabular}%
}
\end{table}
```

```
277
278
279 Para rodar uma tabela muito larga em 90 graus no LaTeX, você pode usar o pacote \verb*|rotat
280
281 Aqui está um exemplo de como usar o ambiente \verb*|sidewaystable| para girar uma tabela. Pr
282
283 \begin{sidewaystable}
284 \centering
285 \caption{Sua Legenda Aqui}
286 \label{tab:sua_tabela}
287 \begin{tabular}{lll}
288 \toprule
289 Coluna 1 & Coluna 2 & Coluna 3 \\
290 \midrule
291 Item 1 & Item 2 & Item 3 \\
292 Item 4 & Item 5 & Item 6 \\
293 \bottomrule
294 \end{tabular}
295 \end{sidewaystable}
296
297 Se a tabela for muito longa, o ambiente \verb|longtable| é o ideal. Ele fornece comandos par
298
299 % Exemplo de tabela longa que se estende por várias páginas
300 \begin{longtable}{|c|c|c|}
301 % primeiro cabeçalho (é o caption)
302 \caption{Exemplo de Tabela Longa}\label{tab:longa} \\
303 \hline \textbf{Coluna 1} & \textbf{Coluna 2} & \textbf{Coluna 3} \\ \hline
304 \endfirsthead
305 % cabeçalho normal
306 \multicolumn{3}{c}%
307 {{\tablename\ \thetable{} -- continuação da página anterior}} \\
308 \hline \textbf{Coluna 1} & \textbf{Coluna 2} & \textbf{Coluna 3} \\ \hline
309 \endhead
310 % pé normal
311 \hline \multicolumn{3}{|r|}{{Continua na próxima página}} \\ \hline
312 \endfoot
313 \hline
314 % último pé
315 \multicolumn{3}{|r|}{{Continua na próxima página}}\\
316 \hline \hline
317 \endlastfoot
318
319 % Conteúdo da tabela
320 1 & 2 & 3 \\
321 4 & 5 & 6 \\
322 1 & 2 & 3 \\
323 4 & 5 & 6 \\
324 1 & 2 & 3 \\
325 4 & 5 & 6 \\
326 1 & 2 & 3 \\
327 4 & 5 & 6 \\
328 1 & 2 & 3 \\
329 4 & 5 & 6 \\
330 1 & 2 & 3 \\
```

```
4 & 5 & 6 \\
1 & 2 & 3 \\
4 & 5 & 6 \\
1 & 2 & 3 \\
4 & 5 & 6 \\
1 & 2 & 3 \\
1 & 2 & 3 \\
4 & 5 & 6 \\
1 & 2 & 3 \\
4 & 5 & 6 \\
1 & 2 & 3 \\
4 & 5 & 6 \\
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```

```
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4 & 5 & 6 \\
1 & 2 & 3 \\
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1 & 2 & 3 \\
4 & 5 & 6 \\
1 & 2 & 3 \\
4 & 5 & 6 \\

% Repetir linhas semelhantes conforme necessário para estender a tabela por 3 páginas
\end{longtable}

  \chapter{Revis\~ao Bibliogr\'afica}

  Para ilustrar a completa ades\~ao ao estilo de cita{\c c}\~oes e listagem de
  refer\^encias bibliogr\'aficas, a Tabela~\ref{tab:citation} apresenta cita{\c
  c}\~oes de alguns dos trabalhos contidos na norma fornecida pela CPGP da
  Coppe, utilizando o estilo numérico. Tirando do comando inicial o parâmetro opcional numér

  \begin{table}[h]
```

```
 \caption{Exemplos de cita{\c c}\~oes utilizando o comando padr\~ao
   \texttt{\textbackslash cite} do \LaTeX\ e
   o comando \texttt{\textbackslash citet},
   fornecido pelo pacote \texttt{natbib}.}
 \label{tab:citation}
 \centering
 {\footnotesize
 \begin{tabular}{|c|c|c|}
   \hline
   Tipo da Publicação & \verb|\cite| & \verb|\citet|\\
   \hline
   Livro & \cite{book-example} & \citet{book-example}\\
   Artigo & \cite{article-example} & \citet{article-example}\\
   Relatório & \cite{techreport-example} & \citet{techreport-example}\\
   Relatório & \cite{techreport-exampleIn} & \citet{techreport-exampleIn}\\
   Anais de Congresso & \cite{inproceedings-example} &
     \citet{inproceedings-example}\\
   Séries & \cite{incollection-example} & \citet{incollection-example}\\
   Em Livro & \cite{inbook-example} & \citet{inbook-example}\\
   Dissertação de mestrado & \cite{masterthesis-example} &
     \citet{masterthesis-example}\\
   Tese de doutorado & \cite{phdthesis-example} & \citet{phdthesis-example}\\
   \hline
 \end{tabular}}
 \end{table}

\begin{table}[h]
 \caption{Exemplos de cita{\c c}\~oes utilizando o comando padr\~ao
   \texttt{\textbackslash cite} do \LaTeX\ e
   o comando \texttt{\textbackslash citet},
   fornecido pelo pacote \texttt{natbib}. Além disso, usando o booktabs.}
 \label{tab:citation1}
 \centering
 {\footnotesize
 \begin{tabular}{ccc}
   \toprule
   Tipo da Publicação & \verb|\cite| & \verb|\citet|\\
   \midrule
   Livro & \cite{book-example} & \citet{book-example}\\
   Artigo & \cite{article-example} & \citet{article-example}\\
   Relatório & \cite{techreport-example} & \citet{techreport-example}\\
   Relatório & \cite{techreport-exampleIn} & \citet{techreport-exampleIn}\\
   Anais de Congresso & \cite{inproceedings-example} &
     \citet{inproceedings-example}\\
   Séries & \cite{incollection-example} & \citet{incollection-example}\\
   Em Livro & \cite{inbook-example} & \citet{inbook-example}\\
   Dissertação de mestrado & \cite{masterthesis-example} &
     \citet{masterthesis-example}\\
   Tese de doutorado & \cite{phdthesis-example} & \citet{phdthesis-example}\\
   \bottomrule
 \end{tabular}}
 \end{table}

\chapter{Alguns outros exemplo úteis}
```

```
493
494 \begin{tcolorbox}[title=Meu Textbox]
495 Este é o conteúdo do meu textbox. Você pode adicionar qualquer texto aqui, bem como incluir
496 \end{tcolorbox}
497
498 \begin{tcolorbox}
499 Este é o conteúdo do meu textbox sem título. Você pode adicionar qualquer texto aqui, bem co
500 \end{tcolorbox}
501
502 \begin{figure}[ht]
503     \centering
504     \begin{tikzpicture}
505         \node[anchor=south west,inner sep=0] (image) at (0,0) {\includegraphics[width=0.5\te
506         \begin{scope}[x={(image.south east)},y={(image.north west)}]
507             % Definindo o textbox dentro da figura
508             \node[anchor=north west, text width=0.3\textwidth, fill=white, opacity=0.7, text
509                 \begin{tcolorbox}[colback=red!5!white,colframe=red!75!black,title=Textbox de
510                     Este textbox fala sobre como inserir um textbox dentro de uma figura usa
511                 \end{tcolorbox}
512             };
513         \end{scope}
514     \end{tikzpicture}
515     \caption{Figura com Textbox}
516     \label{fig:figura_com_textbox1}
517 \end{figure}
518
519
520 \begin{figure}[ht]
521     \centering
522  \begin{tcolorbox}
523 Este é o conteúdo do meu textbox sem título. Você pode adicionar qualquer texto aqui, bem co
524 \end{tcolorbox}
525     \caption{Figura com Textbox simples}
526     \label{fig:figura_com_textbox}
527 \end{figure}
528
529   \chapter{Método Proposto}
530   \chapter{Resultados e Discuss\~oes}
531
532   \section{Algumas Demonstra{\c c}\~oes}
533
534   A  Lista de Símbolos precisa usar comandos específicos. Aqui vamos usar os símbolos $\alph
535   \symbl[beta]{Beta}{A palavra Beta more e corrigida}
536   \symbl[zzbeta]{$\beta$}{A letra $\beta$ corrigida}
537   \symbl{beta}{A palavra beta}
538   \symbl{alpha}{A palavra alpha}
539   \symbl[alpha]{Alpha}{A palavra Alpha}
540   \symbl[zzalpha]{$\alpha$}{A letra $\alpha$ corrigida}
541   \symbl[marco]{Marco}{A palavra Marco corrigida}
542
543   A Lista de Abreviações segue, a partir de 2024, a mesma regra, e aqui seguem alguns exempl
544   \abbrev{GoT}{Game of Thrones}
545   \abbrev[GOT]{GoT}{Game of Thrones ordenado como GOT}
546   \abbrev[iot]{IoT}{IoT ordenado como iot}
```

```
  \abbrev[IoT]{IoT}{IoT ordenado como IoT}
  \abbrev[IOT]{IoT}{IoT ordenado como IOT}
  \abbrev{IoT}{IoT com ordenação default}
  \abbrev[ITU]{ITU}{ITU mesmo}
  
  
  
  
  \chapter{Conclusões}
  
  \backmatter
  
  \printbibliography
  

\appendix

\chapter{Um apêndice}

Segundo a norma da ABNT (Associação Brasileira de Normas Técnicas), a definição e utilização

Apêndice: O apêndice é um texto ou documento elaborado pelo autor do trabalho com o objetivo


\chapter{Outro apêndice}

\annex


\chapter{Um Anexo}
Segundo a norma da ABNT (Associação Brasileira de Normas Técnicas), a definição e utilização


Anexo: O anexo, por sua vez, consiste em um texto ou documento não elaborado pelo autor, que

No modelo \CoppeTeX os anexos devem obrigtoriamente vir depois dos apêndices e usam o comand


\chapter{Outro Anexo}


\end{document}

⟨/example⟩
```

8 Implementation

The ‘Coppe.cls’ file

<*class>

8.1 Identification

Name of the class, version and date

```
\def\filename{coppe.dtx}
\def\fileversion{v4.0}
\def\filedate{2025/10/18}
```

Requires a new Kernel

```
\NeedsTeXFormat{LaTeX2e}[2023/11/01]
```

Class provided

```
\ProvidesClass{Coppe}[\filedate\ \fileversion\ Coppe Dissertations and Thesis]
```

Base class is book, CoppeTeXis now twosided, due to (**normassibi**) (**normassibi**) asks form 12pt

```
\LoadClass[12pt,a4paper,twoside]{book}
```

8.2 Packages used

Packages that are used (general)

```
\RequirePackage{hyphenat}   % Hyphenation control (e.g., \hyp{} and disabling hyphenation in
\RequirePackage{lastpage}   % Provides label/anchor for the last page (e.g., page X of \page
\RequirePackage{ifthen}     % Basic conditional logic (\ifthenelse) for simple class/package
\RequirePackage{graphicx}   % Graphics inclusion and scaling (\includegraphics, rotation, cl
\RequirePackage{setspace}   % Line spacing control (\singlespacing, \onehalfspacing, \double
\RequirePackage{tabularx}   % Tables with automatic column width (X column) and full-width t
\RequirePackage{etoolbox}   % Robust programming tools: toggles, conditionals, patching (\ap
\RequirePackage{eqparbox}   % Equal-width boxes for aligned text blocks across lines/columns
\RequirePackage{ltxcmds}    % Low-level LaTeX kernel helpers used by other packages and inte
\RequirePackage{expl3}      % LaTeX3 programming layer (token lists, properties, sequences,
\RequirePackage{xparse}     % High-level interface to define commands/environments (\NewDocu
\RequirePackage[spanish,english,brazilian]{babel} % Languages!
\ExplSyntaxOn               % Enable LaTeX3 (expl3) syntax for subsequent definitions
```

Font is T1 for latin, should we drop it for LuaLaTeX?

```
\RequirePackage[T1]{fontenc} % CHECK LuaLaTeX compatibility
```

8.3 Options Processing

We start with option processing, using the kvoptions package. This is new in v4.0 and traditional options should be dropped

```
\RequirePackage{kvoptions} % Drop traditional options
\SetupKeyvalOptions{family=Coppe, prefix=Coppe@}
```

This are my options now: language, degree and bibtype

```
\DeclareStringOption[br]{lang}   % br | en | es |
\DeclareStringOption[msc]{degree}% msc | phd | qual | proposal
\DeclareStringOption[number]{bibtype} % number | alpha
\DeclareBoolOption[false]{doublespacing} % oneandhalfspace | doublespace
\ProcessKeyvalOptions*
```

8.4 Geometry

Geometry is defined in (**normassibi**) Instead of using left and right we use inner and outer, thinking in binding terms

```
\newcommand*\bindingoffset{0mm}
\newcommand*\setbindingoffset[1]{\renewcommand*\bindingoffset{#1}}
\RequirePackage[a4paper, % Brazilian standard
bindingoffset=\bindingoffset, % There are no instructions for binding offset, but we have to
%%vcentering=true,%
top=3cm,
bottom=2cm,
inner=3.0cm,
outer=2.0cm]{geometry}
% This is a macro for our
\def\CoppeTeX{{\rm C\kern-.05em{\sc o\kern-.025em p\kern-.025em
p\kern-.025em e}}\kern-.08em
T\kern-.1667em\lower.5ex\hbox{E}\kern-.125emX\spacefactor1000}
```

9 Spacing and Font Size

Here is the default one-and-a-half line spacing. Users can change to double spacing by passing the `doublespacing` option.

```
% --- Global rule (main text)
\onehalfspacing   % UFRJ/ABNT require 1.5 lines
\ifCoppe@doublespacing % can make it easer to comment
\doublespacing
\fi
% --- Local overrides for special environments
\AtBeginEnvironment{quotation}{\singlespacing\small}
\AtEndEnvironment{quotation}{\onehalfspacing\normalsize}
\AtBeginEnvironment{quote}{\singlespacing\small}
\AtEndEnvironment{quote}{\onehalfspacing\normalsize}
\AtBeginEnvironment{figure}{\singlespacing\small}
\AtEndEnvironment{figure}{\onehalfspacing\normalsize}
\AtBeginEnvironment{table}{\singlespacing\small}
\AtEndEnvironment{table}{\onehalfspacing\normalsize}
\AtBeginEnvironment{thebibliography}{\singlespacing}
\AtEndEnvironment{thebibliography}{\onehalfspacing}
```

10 Male or Female?

```
\newboolean{maledoc}
\setboolean{maledoc}{false}

\ExplSyntaxOn

\cs_new:Npn \Coppe_degperson_main:
{
 \bool_if:NTF \maledoc
 { \Coppe_str_get:nn { degperson / \Coppe@degree / m } { \l_Coppe_lang_main_tl } }
 { \Coppe_str_get:nn { degperson / \Coppe@degree / f } { \l_Coppe_lang_main_tl } }
}
```

```
\let\local@degname\Coppe_degperson_main:

\ExplSyntaxOff
```

10.1 I18N Engine

```
% =========================
% Core localization (no if's)
% =========================
\ExplSyntaxOn
% --- Public options (assume you've already set them with kvoptions)
% \Coppe@lang = br|en|es  (default br)
% Secondary language rule: pt -> en, en|es -> pt (br)
\tl_new:N \l_Coppe_lang_main_tl
\tl_new:N \l_Coppe_lang_second_tl
\tl_set:Nn \l_Coppe_lang_main_tl { \Coppe@lang }
\cs_new_protected:Npn \Coppe_set_secondary_lang:
{
 \str_case:nnF { \Coppe@lang }
 {
  {br}{ \tl_set:Nn \l_Coppe_lang_second_tl { en } }
  {en}{ \tl_set:Nn \l_Coppe_lang_second_tl { br } }
  {es}{ \tl_set:Nn \l_Coppe_lang_second_tl { br } }
 }{ \tl_set:Nn \l_Coppe_lang_second_tl { en } }
}
\Coppe_set_secondary_lang:
% --- Main/Second title helpers (map to the right stored title)
\cs_new:Npn \Coppe_title_main:
{
 \str_case:nnF { \l_Coppe_lang_main_tl }
 { {br}{\local@title} {pt}{\local@title} {en}{\foreign@title} {es}{\foreign@title} }
 {\local@title}
}
\cs_new:Npn \Coppe_title_second:
{
 \str_case:nnF { \l_Coppe_lang_second_tl }
 { {br}{\local@title} {pt}{\local@title} {en}{\foreign@title} {es}{\foreign@title} }
 {\foreign@title}
}


% --- Select babel's main language using lang=
% Load all and select the main one so hyphenation is correct.

\str_case:nnF { \Coppe@lang }
{
 {br}{\selectlanguage{brazilian}}
 {en}{\selectlanguage{english}}
 {es}{\selectlanguage{spanish}}
}{\selectlanguage{brazilian}} % default

% --- String stores (per-domain) using expl3 props
% Generic strings (UI labels, doc types, degree names...)
\prop_new:N \g_Coppe_strings_prop
```

```
% Department full names (key = program code like PESC, value = localized name)
\prop_new:N \g_Coppe_dept_prop

% Setters used by language modules
\cs_new_protected:Npn \Coppe_str_set:nnn #1#2#3
{ % #1 = key (e.g., doctype/msc), #2 = lang (br|en|es), #3 = value
 \prop_gput:Nnx \g_Coppe_strings_prop { #1 / #2 } { #3 } }
\cs_new_protected:Npn \Coppe_dept_set:nnn #1#2#3
{ % #1 = PESC, #2 = lang, #3 = localized name
 \prop_gput:Nnx \g_Coppe_dept_prop { #1 / #2 } { #3 } }

% Getters
\cs_new:Npn \Coppe_str_get:nn #1#2
{ \prop_item:Nn \g_Coppe_strings_prop { #1 / #2 } }
\cs_new:Npn \Coppe_dept_get:nn #1#2
{ \prop_item:Nn \g_Coppe_dept_prop   { #1 / #2 } }

% Convenience: in current and secondary language
\cs_new:Npn \Coppe_str_main:n   #1 { \Coppe_str_get:nn  { #1 } { \l_Coppe_lang_main_tl } }
\cs_new:Npn \Coppe_str_second:n #1 { \Coppe_str_get:nn  { #1 } { \l_Coppe_lang_second_tl } }
\cs_new:Npn \Coppe_dept_main:n  #1 { \Coppe_dept_get:nn { #1 } { \l_Coppe_lang_main_tl } }
\cs_new:Npn \Coppe_dept_second:n#1 { \Coppe_dept_get:nn { #1 } { \l_Coppe_lang_second_tl } }

% Public document commands (you'll use these throughout)
\NewDocumentCommand{\CoppeString}{m}{\Coppe_str_main:n{#1}}
\NewDocumentCommand{\CoppeStringSecond}{m}{\Coppe_str_second:n{#1}}

% Department setter API (replaces big if-then cascades)
% \department{PESC} will set \local@deptname (main) and \foreign@deptname (second)
\NewDocumentCommand{\department}{m}{
 \global\def\local@deptname   {\Coppe_dept_main:n{#1}}
 \global\def\foreign@deptname {\Coppe_dept_second:n{#1}}
}

% Titles/labels that depend on language:
% Example keys you'll use later: degname/msc, doctype/msc, advisor_label, etc.
\ExplSyntaxOff

% \subsection{I18N Languages}
\InputIfFileExists{Coppe-lang-br.def}{}{\ClassWarning{Coppe}{Coppe-lang-br.def not found}}
\InputIfFileExists{Coppe-lang-en.def}{}{\ClassWarning{Coppe}{Coppe-lang-en.def not found}}
\InputIfFileExists{Coppe-lang-es.def}{}{\ClassWarning{Coppe}{Coppe-lang-es.def not found}}
% ===== I18N glue (derive runtime strings from the data store) =====
\ExplSyntaxOn
% -- 2.1 Degree and doctype names from lang + degree option
% Keys expected in lang files (already present):
%   degname/msc, degname/phd, doctype/msc, doctype/phd
% We expose legacy macros consumed by templates:
\cs_new_protected:Npn \Coppe_setup_degree_strings:
{
 % Degree name (e.g., Mestrado / Doutorado / Master / Doctorate)
 \tl_gset:Nx \g_Coppe_degreename_tl
 { \Coppe_str_get:nn { degname / \Coppe@degree } { \l_Coppe_lang_main_tl } }
 \tl_gset:Nx \g_Coppe_degreename_second_tl
 { \Coppe_str_get:nn { degname / \Coppe@degree } { \l_Coppe_lang_second_tl } }
```

```
766
767  % Document type (e.g., Dissertação / Tese / Dissertation / Thesis)
768  \tl_gset:Nx \g_Coppe_doctype_tl
769  { \Coppe_str_get:nn { doctype / \Coppe@degree } { \l_Coppe_lang_main_tl } }
770  \tl_gset:Nx \g_Coppe_doctype_second_tl
771  { \Coppe_str_get:nn { doctype / \Coppe@degree } { \l_Coppe_lang_second_tl } }
772
773  % Legacy macro shims (so the rest of the class continues to work)
774  \tl_gset_eq:NN \@degreename \g_Coppe_degreename_tl
775  \tl_gset_eq:NN \local@doctype \g_Coppe_doctype_tl
776 }
777
778 % -- 2.2 Months (use babel; no hard-coded month tables)
779 \cs_new:Npn \Coppe_month_main:
780 {
781  \monthname % in whatever language is currently selected (we selected main above)
782 }
783 \cs_new_protected:Npn \Coppe_month_second:
784 {
785  \begingroup
786  \str_case:nnF { \l_Coppe_lang_second_tl }
787  { {br}{\selectlanguage{brazilian}}
788   {en}{\selectlanguage{english}}
789   {es}{\selectlanguage{spanish}} }
790  { \selectlanguage{english} }
791  \monthname
792  \endgroup
793 }
794
795 % Legacy macro shims for month names:
796 \cs_new:Npn \local@monthname   { \Coppe_month_main: }
797 \cs_new:Npn \foreign@monthname { \Coppe_month_second: }
798
799 % -- 2.3 Lists, glossary names, advisor/advisors label (dynamic)
800 % We keep the legacy macros but back them with CoppeString lookups.
801 \cs_new:Npn \Coppe_listabbrev_main:   { \Coppe_str_main:n   { listabbreviationname } }
802 \cs_new:Npn \Coppe_listsymbols_main:  { \Coppe_str_main:n   { listsymbolname } }
803 \cs_new:Npn \Coppe_glossary_main:     { \Coppe_str_main:n   { glossaryname } }
804
805 % Dynamic advisor label (singular/plural) in main & second languages
806 \cs_new:Npn \Coppe_advisor_label_main:
807 {
808  \int_compare:nNnTF { \@advisor } > { 1 }
809  { \Coppe_str_main:n { advisors_label } } % plural
810  { \Coppe_str_main:n { advisor_label } }  % singular
811 }
812 \cs_new:Npn \Coppe_advisor_label_second:
813 {
814  \int_compare:nNnTF { \@advisor } > { 1 }
815  { \Coppe_str_second:n { advisors_label } }
816  { \Coppe_str_second:n { advisor_label } }
817 }
818
819 % Legacy macro shims:
```

```
\cs_new:Npn \listabbreviationname { \Coppe_listabbrev_main: }
\cs_new:Npn \listsymbolname       { \Coppe_listsymbols_main: }
\cs_new:Npn \glossaryname         { \Coppe_glossary_main: }
\cs_new:Npn \local@advisorstring  { \Coppe_advisor_label_main: }
\cs_new:Npn \foreign@advisorstring{ \Coppe_advisor_label_second: }

% -- 2.4 “Approved by” label (genderless in EN/ES; feminine in PT as default thesis wording)
% You already created keys in lang files: approved_by.
% Keep Portuguese feminine default (“Aprovada por”) as in the class, unless maledoc=true.
\cs_new:Npn \Coppe_approved_main:
{
 \Coppe_str_main:n { approved_by }
}

\AtBeginDocument{\Coppe_setup_degree_strings:}


\ExplSyntaxOff

% Run the setup once we know degree/lang

% Keep the bibname tweak you had for English captions:
```

`\title` Used to enter the title in Brazilian Portuguese.

```
\renewcommand\title[1]{%
  \global\def\local@title{#1}%
}
```

`\foreigntitle` Used to enter the foreign title.

```
\newcommand\foreigntitle[1]{%
  \global\def\foreign@title{#1}%
}
```

`\advisor` Defines globally the title, name and academic degree of the advisors.

```
\newcount\@advisor\@advisor0
\newcommand\advisor[4]{%
  \global\@namedef{CoppeAdvisorTitle:\expandafter\the\@advisor}{#1}
  \global\@namedef{CoppeAdvisorName:\expandafter\the\@advisor}{#2}
  \global\@namedef{CoppeAdvisorSurname:\expandafter\the\@advisor}{#3}
  \global\@namedef{CoppeAdvisorDegree:\expandafter\the\@advisor}{#4}
  \global\advance\@advisor by 1
  \ifnum\@advisor>1
    \renewcommand\local@advisorstring{Orientadores}
    \renewcommand\foreign@advisorstring{Advisors}
  \fi
}
```

`\examiner`

```
\newcount\@examiner\@examiner0
\newcommand\examiner[3]{%
  \global\@namedef{CoppeExaminer:\expandafter\the\@examiner}{#1\ #2}
  \global\advance\@examiner by 1
}
```

`\author` It was redefined to allow the identification of the author's first names and surname.

```
\renewcommand\author[2]{%
  \global\def\@authname{#1}
  \global\def\@authsurn{#2}
}
```

`\date` This code makes easy to switch from dates in different languages.

```
\renewcommand\date[2]{%
  \month=#1
  \year=#2
}
```

`\keyword`

```
\newcounter{keywords}
\newcommand\keyword[1]{%
  \global\@namedef{CoppeKeyword:\expandafter\the\c@keywords}{#1}
  \global\addtocounter{keywords}{1}
}
```

`\freeconfig` This command allows easy changing of core class parameters.

```
\newcommand\freeconfig[6]{%
 \providecommand\@degree{}
 \renewcommand\@degree{#1}
 \providecommand\@degreename{}
 \renewcommand\@degreename{#2}
 \providecommand\local@degname{}
 \renewcommand\local@degname{#3}
 \providecommand\foreign@degname{}
 \renewcommand\foreign@degname{#4}
 \providecommand\local@doctype{}
 \renewcommand\local@doctype{#5}
 \providecommand\foreign@doctype{}
 \renewcommand\foreign@doctype{#6}%
}
%   \end{macrocode}
% \end{macro}
%
% \begin{macro}{\frontmatter}
% The number of pages for both frontmatter and mainmatter printed
% in the cataloging details page is computed by means of simple
% \LaTeX\ labels.
%    \begin{macrocode}
\renewcommand\frontmatter{%
  \cleardoublepage
  \@mainmatterfalse
  \pagenumbering{roman}
  \thispagestyle{empty}
  \setcounter{page}{2}
  \makefrontpage
  \clearpage
  \pagestyle{plain}
  \makecatalog%
}
```

\mainmatter

```
\renewcommand\mainmatter{%
  \Coppe@mainBegin
  \cleardoublepage
  \@mainmattertrue
  \pagestyle{plain}
  \pagenumbering{arabic}}
```

\backmatter

```
\renewcommand\backmatter{%
  \if@openright
    \cleardoublepage
  \else
    \clearpage
  \fi}
%
```

\maketitle

```
\renewcommand\maketitle{%
  \pagenumbering{alph}
  \ltx@ifpackageloaded{hyperref}{\Coppe@hypersetup}{}%
  \begin{titlepage}
  \begin{flushleft}
  \vspace*{1.5mm}
  \setlength\baselineskip{0pt}
  \setlength\parskip{1mm}
  \makebox[20mm][c]{\hspace{4.8cm}\includegraphics{Coppe-logo}}
  \end{flushleft}
  \vspace{1.05cm}
  \begin{center}
 \nohyphens{\MakeUppercase{\Coppe_title_main:}}\par
 % If you want to always show the second title, keep the next 3 lines;
 % otherwise you can comment them out.
 \str_if_eq:VnF \l_Coppe_lang_second_tl {\l_Coppe_lang_main_tl}
 { \vspace{2mm}\nohyphens{\MakeUppercase{\Coppe_title_second:}}\par }
 \vspace*{3cm}
 \nohyphens{\@authname\ \@authsurn}\par
  \end{center}
  \vspace*{2.1cm}
  \begin{flushright}
  \begin{minipage}{8.45cm}
  \frontcover@maintext
  \end{minipage}\par
  \vspace*{7.5mm}
  \nohyphens{%
  \begin{tabularx}{8.45cm}[b]{@{}l@{ }>{\raggedright\arraybackslash}X@{}}
    \local@advisorstring: &
    \count1=0
    \toks@={}
    \@whilenum \count1<\@advisor \do{%
    \ifcase\count1 % same as \ifnum0=\count1
      \toks@=\expandafter{\csname CoppeAdvisorName:\the\count1%
        \expandafter\endcsname\expandafter\space%
```

```
        \csname CoppeAdvisorSurname:\the\count1\endcsname\\}
    \else
      \toks@=\expandafter\expandafter\expandafter{%
        \expandafter\the\expandafter\toks@%
        \expandafter&\expandafter\space%
        \csname CoppeAdvisorName:\the\count1\expandafter\endcsname%
        \expandafter\space\csname CoppeAdvisorSurname:\the\count1\endcsname\\
      }%
    \fi
    \advance\count1 by 1}
    \the\toks@
  \end{tabularx}}\par
  \end{flushright}
  \vspace*{\fill}
  \begin{center}
  \local@cityname\par
  \local@monthname\ de \number\year
  \end{center}
  \end{titlepage}
  \global\let\maketitle\relax%
  \global\let\and\relax}

\newcommand\makefrontpage{%
  \begin{center}
 \sloppy\nohyphens{\MakeUppercase{\Coppe_title_main:}}\par
 \str_if_eq:VnF \l_Coppe_lang_second_tl {\l_Coppe_lang_main_tl}
 { \vspace{2mm}\sloppy\nohyphens{\MakeUppercase{\Coppe_title_second:}}\par }
 \vspace*{7mm}
 {\@authname\ \@authsurn}\par
\end{center}\par
\vspace*{4mm}
\frontpage@maintext
\vspace*{16mm}
% advisors block unchanged...
\vspace*{20mm}
\noindent\begin{tabularx}{\textwidth}[b]{@{}l@{ }>{\raggedright\arraybackslash}X@{}}
 \Coppe_approved_main:  & % <-- i18n “Approved by”
 \count1=0
 \toks@={}
 \@whilenum \count1<\@examiner \do{%
  \ifcase\count1
  \toks@=\expandafter{\csname CoppeExaminer:\the\count1\endcsname\\}
  \else
  \toks@=\expandafter\expandafter\expandafter{%
   \expandafter\the\expandafter\toks@
   \expandafter&\expandafter\space
   \csname CoppeExaminer:\the\count1\endcsname\\
  }%
  \fi
  \advance\count1 by 1}
 \the\toks@
\end{tabularx}\par

  \vspace*{\fill}
```

```
  \frontpage@bottomtext}

\newcommand\Coppe@hypersetup{%
\begingroup
  % changes to \toks@ and \count@ are kept local;
  % it's not necessary for them, but it is usually the case
  % for \count1, because the first ten counters are written
  % to the DVI file, thus you got lucky because of PDF output
  \toks@={}% in this special case not necessary
  \count@=0 %
  \@whilenum\count@<\value{keywords}\do{%
    % * a keyword separator is not necessary,
    %    if there is just one keyword
    % * \csname CoppeKeyword:\the\count@\endcsname must be expanded
    %    at least once, to get rid of the loop depended \count@
    \ifcase\count@ % same as \ifnum0=\count@
      \toks@=\expandafter{\csname CoppeKeyword:\the\count@\endcsname}%
    \else
      \toks@=\expandafter\expandafter\expandafter{%
        \expandafter\the\expandafter\toks@
        \expandafter;\expandafter\space
        \csname CoppeKeyword:\the\count@\endcsname
      }%
    \fi
    \advance\count@ by 1 %
  }%
  \edef\x{\endgroup
    \noexpand\hypersetup{%
      pdfkeywords={\the\toks@}%
    }%
  }%
\x
\hypersetup{%
  pdfauthor={\@authname\ \@authsurn},
  pdftitle={\local@title},
  pdfsubject={\local@doctype\ de \@degreename\ em \local@deptname\ da Coppe/UFRJ},
  pdfcreator={LaTeX with CoppeTeX toolkit},
  breaklinks={true},
  raiselinks={true},
  pageanchor={true},
}}
```

`\makecatalog` When the document has illustrations, it is required to insert ": il.;" between the number of pages of the textual part and the page dimension. We have created a label to flag the existence of lists of figures. It is checked to be undefined using the plain TEX command `\@isundefined` **TeX:FAQ**.

```
\newcommand\makecatalog{%
  \vspace*{\fill}
  \begin{center}
    \setlength{\fboxsep}{5mm}
    \framebox[120mm][c]{\makebox[5mm][c]{}%
      \begin{minipage}[c]{105mm}
      \setlength{\parindent}{5mm}
      \noindent\sloppy\nohyphens\@authsurn,
```

```
    \nohyphens\@authname\par
    \nohyphens{%
      \if@english
        \foreign@title%
      \else
        \local@title%
      \fi/\@authname\ \@authsurn. -- \local@cityname:
    UFRJ/Coppe, \number\year.}\par
    \pageref{front:pageno},
    \pageref{LastPage}
    p.\@ifundefined{r@cat:lofflag}{}{\pageref{cat:lofflag}} $29,7$cm.\par
    % There is an issue here. When the last entry must be split between lines,
    % the spacing between it and the next paragraph becomes smaller.
    % Should we manually introduce a fixed space? But how could we know that
    % a name was split? Is this happening yet?
    \nohyphens{%
    \begin{tabularx}{100mm}[b]{@{}l@{ }>{\raggedright\arraybackslash}X@{}}
      \local@advisorstring: &
      \count1=0
      \toks@={}
      \@whilenum \count1<\@advisor \do{%
      \ifcase\count1 % same as \ifnum0=\count1
        \toks@=\expandafter{\csname CoppeAdvisorName:\the\count1%
        \expandafter\endcsname\expandafter\space%
        \csname CoppeAdvisorSurname:\the\count1\endcsname\\}
      \else
        \toks@=\expandafter\expandafter\expandafter{%
          \expandafter\the\expandafter\toks@
          \expandafter&\expandafter\space
          \csname CoppeAdvisorName:\the\count1\expandafter\endcsname%
          \expandafter\space\csname CoppeAdvisorSurname:\the\count1\endcsname\\
        }%
      \fi
      \advance\count1 by 1}
      \the\toks@
    \end{tabularx}}\par
    \nohyphens{\local@doctype\ ({\MakeLowercase\@degreename}) --
    UFRJ/Coppe/Programa de \local@deptname, \number\year.}\par
    Refer{\^ e}ncias Bibliogr{\' a}ficas: p. \pageref{bib:begin} -- \pageref{bib:end}.\par
    \count1=0
    \count2=1
    \nohyphens{\@whilenum \count1<\value{keywords} \do {%
      \number\count2. \csname CoppeKeyword:\the\count1 \endcsname.
      \advance\count1 by 1
      \advance\count2 by 1}
    I. \csname CoppeAdvisorSurname:0\endcsname,%
    \ \csname CoppeAdvisorName:0\endcsname%
    \ifthenelse{\@advisor>1}{\ \emph{et~al.}{}}.
    II. \local@universityname, Coppe, Programa de \local@deptname.
    III. T{\' i}tulo.}
  \end{minipage}}
\end{center}
\vspace*{\fill}}
```

`\dedication`

```
\newcommand\dedication[1]{
  \gdef\@dedic{#1}
    \cleardoublepage
    \vspace*{\fill}
    \begin{flushright}
      \begin{minipage}{60mm}
        \raggedleft \it \normalsize \@dedic
      \end{minipage}
    \end{flushright}}
```

`abstract` (*env.*) This is a specialization of the abstract in the article standard class.

```
\newenvironment{abstract}{%
  \clearpage
  \thispagestyle{plain}
  \abstract@toptext\par
  \vspace*{8.6mm}
  \begin{center}
    \sloppy\nohyphens{\MakeUppercase\local@title}\par
    \vspace*{13.2mm}
    \@authname\ \@authsurn \par
    \vspace*{7mm}
    \local@monthname/\number\year
  \end{center}\par
  \vspace*{\fill}
  \noindent%
  \begin{tabularx}{\textwidth}[b]{@{}l@{ }>{\raggedright\arraybackslash}X@{}}
    \local@advisorstring: &
    \count1=0
    \toks@={}
    \@whilenum \count1<\@advisor \do{%
    \ifcase\count1 % same as \ifnum0=\count1
      \toks@=\expandafter{\csname CoppeAdvisorName:\the\count1%
      \expandafter\endcsname\expandafter\space%
      \csname CoppeAdvisorSurname:\the\count1\endcsname\\}
    \else
      \toks@=\expandafter\expandafter\expandafter{%
        \expandafter\the\expandafter\toks@
        \expandafter&\expandafter\space
        \csname CoppeAdvisorName:\the\count1\expandafter\endcsname%
        \expandafter\space\csname CoppeAdvisorSurname:\the\count1\endcsname\\
      }%
    \fi
    \advance\count1 by 1}
    \the\toks@
  \end{tabularx}\par
  \vspace*{2mm}
  \noindent\local@deptstring: \local@deptname\par
  \vspace*{7mm}}{\vspace*{\fill}}
```

`foreignabstract` (*env.*)

```
\newenvironment{foreignabstract}{%
 \clearpage
```

```
\thispagestyle{plain}
% switch to the configured second language
\begingroup
\str_case:nnF { \l_Coppe_lang_second_tl }
{ {br}{\selectlanguage{brazilian}} {en}{\selectlanguage{english}} {es}{\selectlanguage{span
{ \selectlanguage{english} }
\foreignabstract@toptext\par
\vspace*{8.6mm}
\begin{center}
 \sloppy\nohyphens{\MakeUppercase{\Coppe_title_second:}}\par
 \vspace*{13.2mm}
 \@authname\ \@authsurn \par
 \vspace*{7mm}
 \foreign@monthname/\number\year
\end{center}\par
\vspace*{\fill}
 \noindent%
 \begin{tabularx}{\textwidth}[b]{@{}l@{ }>{\raggedright\arraybackslash}X@{}}
   \foreign@advisorstring: &
   \count1=0
   \toks@={}
   \@whilenum \count1<\@advisor \do{%
   \ifcase\count1 % same as \ifnum0=\count1
     \toks@=\expandafter{\csname CoppeAdvisorName:\the\count1%
     \expandafter\endcsname\expandafter\space%
     \csname CoppeAdvisorSurname:\the\count1\endcsname\\}
   \else
     \toks@=\expandafter\expandafter\expandafter{%
       \expandafter\the\expandafter\toks@
       \expandafter&\expandafter\space
       \csname CoppeAdvisorName:\the\count1\expandafter\endcsname%
       \expandafter\space\csname CoppeAdvisorSurname:\the\count1\endcsname\\
     }%
   \fi
   \advance\count1 by 1}
   \the\toks@
 \end{tabularx}
 \vspace*{2mm}
 \noindent\foreign@deptstring: \foreign@deptname\par
 \vspace*{7mm}}{%
 \endgroup % restore original language
\vspace*{\fill}
}
```

\listoffigures

```
\renewcommand\listoffigures{%
    \Coppe@hasLof
    \if@twocolumn
      \@restonecoltrue\onecolumn
    \else
      \@restonecolfalse
    \fi
    \chapter*{\listfigurename}%
      \addcontentsline{toc}{chapter}{\listfigurename}%
```

```
      \@mkboth{\MakeUppercase\listfigurename}%
              {\MakeUppercase\listfigurename}%
    \@starttoc{lof}%
    \if@restonecol\twocolumn\fi
    }
```

\listoftables

```
\renewcommand\listoftables{%
    \if@twocolumn
      \@restonecoltrue\onecolumn
    \else
      \@restonecolfalse
    \fi
    \chapter*{\listtablename}%
      \addcontentsline{toc}{chapter}{\listtablename}%
      \@mkboth{%
          \MakeUppercase\listtablename}%
         {\MakeUppercase\listtablename}%
    \@starttoc{lot}%
    \if@restonecol\twocolumn\fi
    }
```

\printlosymbols

```
\newcommand\printlosymbols{%
\renewcommand\glossaryname{\listsymbolname}%
\@input@{\jobname.los}}
```

\makelosymbols

```
\def\makelosymbols{%
  \newwrite\@losfile
  \immediate\openout\@losfile=\jobname.syx
  \newcommand\symbl[3][]{\@bsphack\begingroup
  \ifstrempty{##1}{\def\@tempsymbl{##2=}}{\def\@tempsymbl{##1=}}%
             \@sanitize%
             \@wrlos{\@tempsymbl}{##2}{##3}}\typeout%
  {Writing index of symbols file \jobname.syx}%
  \let\makelosymbols\@empty%
}%
\@onlypreamble\makelosymbols

\AtBeginDocument{%
\@ifpackageloaded{hyperref}{%
  \newcommand\@wrlos[3]{%
    \protected@write\@losfile{}%
      {\string\indexentry{#1[#2] #3|hyperpage}{\thepage}}%
    \endgroup%
    \@esphack}}{%
  \newcommand\@wrlos[3]{%
    \protected@write\@losfile{}%
      {\string\indexentry{#1[#2] #3}{\thepage}}%
    \endgroup%
    \@esphack}}}%
```

\printloabbreviations

```
\newcommand\printloabbreviations{%
\renewcommand\glossaryname{\listabbreviationname}%
\@input@{\jobname.lab}}

\makeloabbreviations
\def\makeloabbreviations{%
  \newwrite\@labfile
  \immediate\openout\@labfile=\jobname.abx
   \newcommand\abbrev[3][]{\@bsphack\begingroup
              \ifstrempty{##1}{\def\@tempsymbl{##2=}}{\def\@tempsymbl{##1=}}
              \@sanitize
              \@wrlab{\@tempsymbl}{##2}{##3}}\typeout
  {Writing index of abbreviations file \jobname.abx}%
  \let\makeloabbreviations\@empty
}
\@onlypreamble\makeloabbreviations

\AtBeginDocument{%
\@ifpackageloaded{hyperref}{%
  \newcommand\@wrlab[3]{%
    \protected@write\@labfile{}%
      {\string\indexentry{#1[#2] #3|hyperpage}{\thepage}}%
    \endgroup%
    \@esphack}}{%
  \newcommand\@wrlab[3]{%
    \protected@write\@labfile{}%
      {\string\indexentry{#1[#2] #3}{\thepage}}%
    \endgroup%
    \@esphack}}}%
%%%% \AtBeginDocument{%
%%%% \@ifpackageloaded{hyperref}{%
%%%%   \def\@wrlab#1#2{%
%%%% \protected@write\@labfile{}%
%%%%       {\string\indexentry{[#1] #2|hyperpage}{\thepage}}%
%%%%     \endgroup
%%%%     \@esphack}}{%
%%%%   \def\@wrlab#1#2{%
%%%%     \protected@write\@labfile{}%
%%%%       {\string\indexentry{[#1] #2}{\arabic{page}}}%
%%%%     \endgroup
%%%%     \@esphack}}}
% Some macros used to generate cataloging information.
\AtBeginDocument{%
  \ltx@ifpackageloaded{hyperref}{
    \def\Coppe@bibEnd{%
      \immediate\write\@auxout{%
        \string\newlabel{bib:end}{{}{\arabic{page}}{}{page.\arabic{page}}{}}}}%
    \def\Coppe@bibBegin{%
      \immediate\write\@auxout{%
        \string\newlabel{bib:begin}{{}{\arabic{page}}{}{page.\arabic{page}}{}}}}%
    \def\Coppe@mainBegin{%
      \immediate\write\@auxout{%
        \string\newlabel{front:pageno}{{}{\Roman{page}}{}{page.\roman{page}}{}}}}%
    \def\Coppe@hasLof{%
```

```
      \immediate\write\@auxout{%
        \string\newlabel{cat:lofflag}{{}{:~il.;}{}{page.\roman{page}}{}}}}%
  }{%
    \def\Coppe@bibEnd{%
      \immediate\write\@auxout{%
      \string\newlabel{bib:end}{{}{\arabic{page}}{}}}}%
    \def\Coppe@bibBegin{%
      \immediate\write\@auxout{%
      \string\newlabel{bib:begin}{{}{\arabic{page}}{}}}}%
    \def\Coppe@mainBegin{%
      \immediate\write\@auxout{%
        \string\newlabel{front:pageno}{{}{\Roman{page}}{}}}}%
    \def\Coppe@hasLof{%
      \immediate\write\@auxout{%
        \string\newlabel{cat:lofflag}{{}{:~il.;}{}}}}%
  }%
}
\newdimen\bibindent%
\setlength\bibindent{1.5em}%
\renewenvironment{thebibliography}[1]%
     {\onehalfspacing%
      \chapter*{\bibname}%
      \addcontentsline{toc}{chapter}{\bibname}%
      \Coppe@bibBegin
      \list{\@biblabel{\@arabic\c@enumiv}}%
           {\setlength{\labelwidth}{0ex}%
            \setlength{\leftmargin}{9.0ex}%
            \setlength{\itemindent}{-9.0ex}%
            \advance\leftmargin\labelsep%
            \@openbib@code%
            \usecounter{enumiv}%
            \let\p@enumiv\@empty%
            \renewcommand\theenumiv{\@arabic\c@enumiv}}%
      \sloppy%
      \clubpenalty4000%
      \@clubpenalty \clubpenalty%
      \widowpenalty4000%
      \sfcode`\.\@m}%
     {\def\@noitemerr%
       {\@latex@warning{Empty `thebibliography' environment}}%
       \Coppe@bibEnd
      \endlist}
```

`longquote` (*env.*)

```
\newlength{\recuolongquote}%
\setlength{\recuolongquote}{4cm}%
\newenvironment*{longquote}[1][default]{%
 \list{}%
 \footnotesize%
 \addtolength{\leftskip}{\recuolongquote}%
 \item[]%
 \singlespacing%
 \ifthenelse{\not\equal{#1}{default}}{\itshape\selectlanguage{#1}}{}%
}{\endlist}%
```

```
\newenvironment{theglossary}{%
  \if@twocolumn%
    \@restonecoltrue\onecolumn%
  \else%
    \@restonecolfalse%
  \fi%
  \@mkboth{\MakeUppercase\glossaryname}%
  {\MakeUppercase\glossaryname}%
  \chapter*{\glossaryname}%
  \addcontentsline{toc}{chapter}{\glossaryname}
  \list{}
  {\setlength{\listparindent}{0in}%
   \setlength{\labelwidth}{1.0in}%
   \setlength{\leftmargin}{1.5in}%
   \setlength{\labelsep}{0.5in}%
   \setlength{\itemindent}{0in}}%
   \sloppy}%
  {\if@restonecol\twocolumn\fi%
\endlist}
%
\renewenvironment{theindex}{%
  \if@twocolumn
    \@restonecolfalse
  \else
    \@restonecoltrue
  \fi
  \twocolumn[\@makeschapterhead{\indexname}]%
  \@mkboth{\MakeUppercase\indexname}%
  {\MakeUppercase\indexname}%
  \thispagestyle{plain}\parindent\z@
  \addcontentsline{toc}{chapter}{\indexname}
  \parskip\z@ \@plus .3\p@\relax
  \columnseprule \z@
  \columnsep 35\p@
  \let\item\@idxitem}
  {\if@restonecol\onecolumn\else\clearpage\fi}
%
\newcommand\local@universityname{Universidade Federal do Rio de Janeiro}
\newcommand\local@deptstring{Programa}
\newcommand\foreign@deptstring{Department}
\newcommand\local@cityname{Rio de Janeiro}
\newcommand\local@statename{RJ}
\newcommand\local@countryname{Brasil}
%
\newcommand\frontcover@maintext{
  \sloppy\nohyphens{\local@doctype\ de \@degreename\
  \ifthenelse{\boolean{maledoc}}{apresentado}{apresentada}
  ao Programa de P{\' o}s-gradua{\c c}{\~ a}o em \local@deptname,
  Coppe, da \local@universityname, como parte dos requisitos
  necess{\' a}rios {\` a} obten{\c c}{\~ a}o do t{\' i}tulo de
  \local@degname\ em \local@deptname.}
}
%
\newcommand\frontpage@maintext{
```

```
  \noindent {\MakeUppercase\local@doctype}
  \ifthenelse{\boolean{maledoc}}{SUBMETIDO}{SUBMETIDA}
  \sloppy\nohyphens{AO CORPO DOCENTE DO INSTITUTO ALBERTO LUIZ COIMBRA
  DE P{\' O}S-GRADUA{\c C}{\~ A}O E PESQUISA DE ENGENHARIA DA
  UNIVERSIDADE FEDERAL DO RIO DE JANEIRO COMO PARTE DOS REQUISITOS
  NECESS{\' A}RIOS PARA A OBTEN{\c C}{\~ A}O DO GRAU DE
  {\MakeUppercase\local@degname} EM CI{\^E}NCIAS EM
  {\MakeUppercase\local@deptname.\par}}%
}
%
\newcommand\frontpage@bottomtext{%
  \begin{center}
  {\MakeUppercase{\local@cityname, \local@statename\ -- \local@countryname}}\par
  {\MakeUppercase\local@monthname\ DE \number\year}
  \end{center}%
}
%
\newcommand\abstract@toptext{%
  \noindent Resumo \ifthenelse{\boolean{maledoc}}{do}{da}
  \local@doctype\ \ifthenelse{\boolean{maledoc}}{apresentado}{apresentada}
  \sloppy\nohyphens{{\‘ a} Coppe/UFRJ como parte dos requisitos
  necess{\' a}rios para a obten{\c c}{\~ a}o do grau de
  \local@degname\ em Ci{\^ e}ncias (\@degree)}
}
\newcommand\foreignabstract@toptext{%
  \noindent \sloppy\nohyphens{Abstract of \foreign@doctype\ presented to
  Coppe/UFRJ as a partial fulfillment of the requirements for the
  degree of \foreign@degname\ of Science (\@degree)}
}
%
% \changes{v3.5}{2024/02/23}{New command annex}
% \changes{v3.5.1}{2024/02/23}{New command annex now supports brazilian or english}
\newcommand{\annex}{
 \iflanguage{brazilian}
 {\renewcommand{\appendixname}{Anexo}}
 {\renewcommand{\appendixname}{Annex}}
 \appendix
}
```

</class>

11 Glossary commands

```
⟨*glossary⟩
\ProvidesFile{coppe.ist}[2025/10/18 CoppeTeX v4.0 glossary file]
actual '='
quote '!'
level '>'
%%%% delim_0   ", p. "
delim_0 "\\dotfill "
lethead_flag  0
headings_flag 0
preamble
```

```
"\n\\begin{theglossary}\n  \\makeatletter"
postamble
"\n  \\end{theglossary}\n"
⟨/glossary⟩
% \section{Brazilian Terms}
⟨*lang-br⟩
\ProvidesFile{coppe-lang-br.def}[2025/10/18 CoppeTeX v4.0 localization: Brazilian]
\ExplSyntaxOn
% --- Departments
\Coppe_dept_set:nnn {PESC}{br}{Engenharia de Sistemas e Computação}
\Coppe_dept_set:nnn {PEB} {br}{Engenharia Biomédica}
\Coppe_dept_set:nnn {PEC} {br}{Engenharia Civil}
\Coppe_dept_set:nnn {PEE} {br}{Engenharia Elétrica}
\Coppe_dept_set:nnn {PEM} {br}{Engenharia Mecânica}
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⟨/lang-br⟩
```

12 English Terms

```
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\Coppe_dept_set:nnn {PEC} {en}{Civil Engineering}
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\Coppe_dept_set:nnn {PEM} {en}{Mechanical Engineering}
```

```
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\Coppe_dept_set:nnn {PEQ} {en}{Chemical Engineering}
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⟨/lang-en⟩
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13 Spanisg Terms

```
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\Coppe_dept_set:nnn {PEE} {es}{Ingeniería Eléctrica}
\Coppe_dept_set:nnn {PEM} {es}{Ingeniería Mecánica}
\Coppe_dept_set:nnn {PEMM}{es}{Ingeniería Metalúrgica y de Materiales}
\Coppe_dept_set:nnn {PEN} {es}{Ingeniería Nuclear}
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\Coppe_dept_set:nnn {PPE} {es}{Planificación Energética}
\Coppe_dept_set:nnn {PEP} {es}{Ingeniería de Producción}
\Coppe_dept_set:nnn {PEQ} {es}{Ingeniería Química}
\Coppe_dept_set:nnn {PET} {es}{Ingeniería de Transportes}
\Coppe_dept_set:nnn {PENT}{es}{Ingeniería de Nanotecnología}
% --- Degree & doc types
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\Coppe_str_set:nnn {degname/phd}{es}{Doctorado}
\Coppe_str_set:nnn {doctype/msc}{es}{Tesis de maestría}
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```

```
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⟨/lang-es⟩
```

14 Bibfile

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\ProvidesFile{coppe.bib}[2025/10/18 CoppeTeX v4.0 Biblatex File]
% 
% This is file ‘coppe.bib’.
% 
% Bibliographic references for the documentation.
% 
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% 
% $URL$
% $Id$
% 
% Author(s): Vicente H. F. Batista
%            George O. Ainsworth Jr.
% 

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Acknowledgments

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