

fbe_tez.sty

A L^AT_EX Style for Theses

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1 Introduction

The style **fbe_tez** is for typesetting M.S. and Ph.D. theses in the format required by the Institute for Graduate Studies in Science and Engineering (or, in Turkish, *Fen Bilimleri Enstitüsü*, FBE), Boğaziçi University. Although FBE has not defined a compulsory format for the thesis proposals, you can also use **fbe_tez** to typeset a Ph.D. proposal as well. The **fbe_tez** package is based on the format described in the manual [1] by FBE for the preparation of theses, which is valid as of July 2000. This version of **fbe_tez** (v4.2) is prepared so as to comply with the requirements of the format which has been updated in 2003 by FBE. Hence, it renders all the previous versions obsolete, since they were pertaining to a format which is not valid anymore.

The `fbe_tez` style is based on the `report` class of \LaTeX . Some commands which apply to `report` were changed so as to comply with the requirements of FBE. There are also additional commands provided by `fbe_tez` to typeset pages which you would not find in an ordinary report but which must be included in the theses submitted to FBE (e.g., a page of approval and an abstract in Turkish).

2 How to Get and Invoke `fbe_tez`

The style package `fbe_tez.zip` can be obtained from the personal web site of the author (http://khas.edu.tr/~kerestec/fbe_tez.zip). After downloading, when you unzip the file `fbe_tez.zip`, five files will be generated:

`fbeman.tex` The \LaTeX source of this user's guide.

`fbe_tez.sty` The \LaTeX style file. This file should be placed in a directory where your \TeX -input files reside.

`sampthes.tex` A sample \LaTeX file which uses the `fbe_tez` package as a style. You can use this file as a template to type in your thesis.

`readme.txt` A text file in which the corrections and changes in the newer versions of `fbe_tez` are reported.

`format.pdf` A pdf file of the booklet describing the format for theses, namely [1].

The `fbe_tez` style can be invoked directly as a package. As `fbe_tez` is based on the `report` class, you have to start your \LaTeX source with the command

```
\documentclass[12pt]{report}
```

which must be followed by

```
\usepackage{fbe_tez}
```

if you are using \LaTeX 2 ϵ .

The `fbe_tez` does not make use of new features introduced in the \LaTeX 2 ϵ . Therefore, you can also use it with \LaTeX 2.09. The users of \LaTeX 2.09 should include `fbe_tez` as an optional parameter in the `\documentstyle` command as

```
\documentstyle[12pt,fbe_tez]{report}
```

3 New Commands and Environments

3.1 Title Page

The title pages for M.S. and Ph.D. theses can be obtained by two different commands, namely

```
\makemstitle
```

or

```
\makephdtitle
```

Further, `fbe_tez` (version 4.0 or later) makes the

```
\makeproposaltitle
```

command available to you, which can be used to generate a title page in your (Ph.D.) thesis proposal. The pages typeset by these commands look very much the same, save that the name of the relevant degree, program or other standard wording appears on either type of titlepage. The obvious place for these commands is right after the `\begin{document}` command, since the title is the leading page of any thesis.

All three commands above assume that you have defined the title and author of the document in the preamble by the corresponding L^AT_EX commands, namely `\title{<title>}` and `\author{<name>}`. You also have to declare the degree(s) of the author and the submission year of the thesis in the preamble, since these information should appear in the titlepage. This is done by the

```
\degree{<text>}
```

and

```
\subyear{<year>}
```

commands. If the author has more than one degree, which is typically the case for a Ph.D. candidate, they must be separated in the argument of the `\degree` command by `\\`.

An additional information needed for generating the titlepage of an M.S. thesis is the program for which M.S. degree the author is going to submit the thesis. Similar to the `\degree` command, this should be declared by a

```
\program{<text>}
```

command.

L^AT_EX will warn you if you do not declare any degree for the author. Nevertheless, the titlepage will be typeset even if this information is missing. The same holds for the program information in the case of an M.S. thesis. On the other hand, the default value for the argument of `\subyear` is the year of the current date. Therefore, you need to declare it only if the submission date is going to be different than the year when you are typesetting the thesis.

3.2 Approval Page

A page of approval can be generated simply by the

```
\makeapprovalpage
```

command. The information which is going to appear in the approval page is also to be given in the preamble. The date of approval has to be specified as the argument of a

```
\dateofapproval{\<date>}
```

command. L^AT_EX will warn you if you do not declare any date of approval.

On the other hand, you should specify the members of the examining committee by the commands

```
\supervisor{\<title-and-name>}
\cosuperi{\<title-and-name>}
\cosuperii{\<title-and-name>}
\examineri{\<title-and-name>}
\examinerii{\<title-and-name>}
:
\examinerv{\<title-and-name>}
```

The `\makeapprovalpage` command will typeset the arguments of each one of these commands as a separate examiner name. The difference between the `\supervisor` and `\examineri`, etc. is that a phrase like ‘(Thesis Supervisor)’ is typeset under the name which is declared as the supervisor. Similarly, ‘(Thesis Co-supervisor)’ appears under the names given as the arguments of the `\cosuperi` and `\cosuperii` commands. Regardless of the order you put these commands in the preamble, the order of the typeset examiner list is going to be as follows: First the supervisor, then the co-supervisor(s) (if any) and then the examiners in the order implied by the command names (that is, first the one specified as `\examineri`, then `\examinerii` and so on).

You can declare a supervisor and a (or, even two) co-supervisor(s) at the same time if you wish. Nevertheless, I think, if your thesis has been supervised by two people, it would be more appropriate to call *both* of them as co-supervisors. You will get a L^AT_EX warning if neither a supervisor name nor any co-supervisor names are given. But the approval page will still be generated even if this information is missing.

The correct place for the `\makeapprovalpage` command is certainly right after the command which generates the titlepage, as required by FBE [1].

3.3 Acknowledgements and Özet

Two new environments are defined by the `fbe_tez` style for typesetting the pages where the acknowledgements and “özet” (abstract in Turkish) are going to appear. They work similar to the standard `abstract` environment. That is, you type

```
\begin{acknowledgements}
:
<text of acknowledgements page>
:
\end{acknowledgements}
```

or

```
\begin{ozet}
:
```

```

<text of turkish abstract>
:
\end{ozet}

```

The format specified by FBE [1] requires that the title of the thesis appears in the Abstract and Özet pages. Moreover, and naturally, the title should appear in the Özet Page as in Turkish. Therefore, the title in Turkish has to be given in the preamble as the argument of a

```
\turkcebaslik{<title in Turkish>}
```

command.

According to the FBE Thesis format, you have to put your acknowledgements after the approval page. The `fbe_tez` style also provides you the `preface` and `foreword` environments, which work exactly in the same way. Consult [1] for the correct order of appearance of all these pages.

3.4 List of Symbols

To typeset a list of symbols section you type in your source file

```

\begin{symbols}
\sym{<symbol>}{<description>}
:
\sym{<symbol>}{<description>}
\end{symbols}

```

where the arguments of each `\sym` command is a symbol to be listed and its description. This command will line up the symbols and their descriptions into two columns. You may change the indentations of these columns by redefining the lengths `\symtabi` and `\symtabii` using length-changing commands like `\setlength` or `\addtolength`. Consult a L^AT_EX manual (e.g. [2]) for the usage of these commands. The default values of `\symtabi` and `\symtabii` are 1.0em and 10em, respectively.

Moreover, to insert a blank line in the list, which you might need to separate the Latin symbols from the Greek ones or the symbols list from an abbreviations list, you can use a `\sym` command with empty arguments, i.e., `\sym{}{}`.

The `symbols` environment generates a list with the heading as “LIST OF SYMBOLS”. You can use the environments `abbreviations` and `symabbreviations`, to generate lists with headings “LIST OF ABBREVIATIONS” or “LIST OF SYMBOLS/-ABBREVIATIONS”, respectively.

3.5 Bibliographies

In addition to the L^AT_EX environment `thebibliography`, which has been reshaped by the `fbe_tez` style according to the instructions in [1], there are three new bibliography-making environments.

In [1], two possible forms of bibliography referencing are mentioned. One of them is by referring them with numbers in square brackets (sometimes called the *IEEE¹-style* referencing). The other one is by using the last name of the first author and the year of publication in parenthesis. This is known as the *Harvard-style* referencing. Also, according to [1], a bibliographical list of *not-cited references* can also be included in the thesis. With the bibliography typesetting environments of the `fbe_tez`, it is possible to generate both bibliography lists in either format.

The standard `thebibliography` environment generates a bibliography titled ‘REFERENCES’ and which is almost in the IEEE-style. Almost; because the reference numbers in the list are not put into the square brackets, but followed by a period in the way described in [1]. The standard cross-referencing method of L^AT_EX for bibliographical items still works. That means, each reference item is specified after a

```
\bibitem{⟨key⟩}
```

so that you can cite the reference using the *key* of the reference by a `\cite{⟨key⟩}` command somewhere else in the text.

To generate the reference list in Harvard style, you type

```
\begin{harvardbibliography}
\item ⟨reference item⟩
:
\item ⟨reference item⟩
\end{harvardbibliography}
```

Similarly, you can type

```
\begin{bibnotcited}{⟨widest-label⟩}
\item ⟨reference item⟩
:
\item ⟨reference item⟩
\end{bibnotcited}
```

to typeset a bibliography list titled ‘REFERENCES NOT CITED’ in the IEEE format (well, almost). As in the `thebibliography` command, the argument of the `bibnotcited` environment specifies the widest number which a bibliographical item in the list can have. Finally, typing

```
\begin{harvardbibnotcited}
\item ⟨reference item⟩
:
\item ⟨reference item⟩
\end{harvardbibnotcited}
```

will generate you a bibliography list titled ‘REFERENCES NOT CITED’ in Harvard style.

Note that the environments provided by `fbe_tez` use the `\item` command to declare each reference item, instead of `\bibitem`.

¹Institute of Electrical and Electronics Engineers

4 Modifications to Report Style

Apart from the above commands which are introduced by the `fbe_tez` style, several commands and environments of `report` style have been redefined to generate a typesetting format which obeys the requirements of FBE. Although most of these changes are transparent to the user, some of them are listed below just to inform the \TeX ncians:

- The headings of the sectional units from chapter level down to paragraph level have been reformatted according to [1]. The headings for parts and subparagraphs have not been changed in any way. Because, a sectional unit to be called as a ‘Part’ is not expected to appear in a thesis or submitted to FBE. On the other hand, nothing is specified about the format of paragraphs and subparagraphs (that is, fifth and sixth level headings) in [1]. Therefore, subparagraphs are typeset as in the ordinary `report` style of \LaTeX . Nevertheless, you are not expected to use these items in a thesis anyway.
- To the contrary of the classical `report` style, there is a period after the numbers of the sectional units in the headings.
- The first paragraph after a heading starts with a paragraph indentation.
- All numbered sectional units (from `chapters` to `subsubsections`) are included in the Table of Contents (except, of course, the entry for the Table of Contents itself). First level headings, which are not numbered, such as List of Tables, etc. are included in the table of contents directly. You do not need the `\addtocontents` command to make them appear in the Table of Contents any more. Further, the indentations of the lines of the Table of Contents have been rearranged taking into account the periods which now appear after the numbers of the sectional units.
- Figure and table captions are reformatted according to the FBE regulations [1].
- Proper pagestyle, margins, line spacing and interparagraph spacing are provided. The line spacing is 1.5, except in footnotes and quotations, where single line spacing has to be used. There is an extra 1.5 space between the paragraphs. Also note that the `\raggedbottom` command is in effect. Therefore, the bottom margin might vary a bit from page to page. You can invoke the `\flushbottom` command in the preamble of your document if you wish. Nevertheless, this is not recommended for theses, which include pages with long formulae or large figures and are sparse in regular text, since the spacing in such pages might look ugly.
- The spacings for displayed formulae are also taken care of by `fbe_tez`. Nevertheless, you can use the \TeX commands `\abovedisplayskip`, `\belowdisplayskip`, `\abovedisplayshortskip` and `\belowdisplayshortskip` for further ‘fine tuning’ if you wish. You have to use these commands *after* your `\begin{document}` command.

- Footnotes are numbered consecutively throughout the whole thesis. If you would like to use the number of the recent footnote in any way, note that the footnotes are numbered by a new counter named `thsfootcnt` (whose value can be printed by `\thethsfootcnt` command). This change is needed because the `report` style resets the `footnote` counter whenever a new chapter starts.
- The `appendix` command is redefined. As in the standard `report` style it still changes the way sectional units are numbered. That is, the chapter numbers are put as A, B, etc. As a modification, now it also produces a line in the Table of Contents which starts with the word ‘APPENDIX’ and the number of the chapter. So, after using the `appendix` command, you do not have to specify the optional parameter of the `chapter` command to obtain the entry in the Table of Contents as required by FBE. Therefore, you will start the part of your source file where you write your appendices simply as

```
\appendix
\chapter{\langle appendix title \rangle}
:
```

5 Bugs and Warnings

You should be warned about the following bugs and drawbacks of `fbe_tez`.

1. Although a *co-supervisor* never comes alone, you will not get a warning if you specify no supervisor name and only one co-supervisor name.
2. The capitalization of the chapter headings are not provided in some cases. Therefore, you have to type the chapter names in the correct case as they should appear in the document.
3. If an appendix (say, the first one) does not have a title, the chapter heading will appear as ‘APPENDIX A:’, i.e., with a column after the chapter number. Therefore, I strongly recommend you to title all appendix chapters. I think, this should not be considered as a bug, since all chapters (including the appendices) should have a title.
4. To invoke the correct pagenumbers, do not forget to use the

```
\pagenumbering{roman}
```

command right after `\begin{document}` and

```
\pagenumbering{arabic}
```

after the `\chapter` command which starts the first chapter of the thesis.

5. Note that `fbe_tez` does not support any document class or style other than `report` and `12pt`. These are the only class and styles which you will need to typeset your thesis anyway.

The author will very much appreciate it if you inform him on other bugs, or suggestions you might have, by an e-mail to `kerestec@boun.edu.tr`.

References

- [1] The Institute for Graduate Studies in Science and Engineering, *Format for Theses*, Boğaziçi University, Istanbul, 2002.
- [2] Lamport, L., *A Document Preparation System: L^AT_EX*, Addison-Wesley, Reading, 1986.