

oststud — OST-Stud Style and Macros*

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November 22, 2022

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1 Introduction

This package is made for the OST Studenten organization to provide an easy to use interface to give a more consistent look and feel for the works produced by its the members. This package is the successor after the fusion of the old `hsrstud` package.

2 Usage

Put text here.

`\dummyMacro` This macro does nothing. It is merely an example. If this were a real macro, you would put a paragraph here describing what the macro is supposed to do, what its mandatory and optional arguments are, and so forth.

`dummyEnv (env.)` This environment does nothing. It is merely an example. If this were a real environment, you would put a paragraph here describing what the environment is supposed to do, what its mandatory and optional arguments are, and so forth.

3 Implementation

3.1 Dependencies and Parse Options

First, we have the dependencies necessary for typesetting.

*This document corresponds to `oststud` v0.2, dated 2022/11/22.

```

1 \RequirePackage{xcolor}
2 \RequirePackage{amsmath}
3 \RequirePackage{amssymb}
4 \RequirePackage{bm}

```

This package also sets sane defaults to the following packages.

```

5 \RequirePackage{hyperref}
6 \RequirePackage{listings}

```

To program the package's internal logic we import the following dependencies.

```

7 \RequirePackage{iftex}
8 \RequirePackage{kvoptions}

```

Then we create the options for the package.

```

9 \SetupKeyvalOptions{
10     family=ost,
11     prefix=ost@
12 }
13 \DeclareBoolOption[false]{dontrenew}
14 \DeclareBoolOption[false]{textvecdiff}
15 \ProcessLocalKeyvalOptions*

```

3.2 Vectors and Vector Calculus

\vec In the physics used by electrical engineers it is common to use bold letters for vectors. If the `dontrenew` option is set a new macro `\bvec` (bold `\vec`) defines the bold vector notation. Otherwise the default vector notation with the tiny ugly arrow is saved in `\oldvec`.

```

16 \newcommand{\ost@vec}[1]{\mathbf{\bm{#1}}}
17 \ifost@dontrenew
18     \newcommand{\bvec}[1]{\ost@vec{#1}}
19 \else
20     \newcommand{\oldvec}[1]{\vec{#1}}
21     \renewcommand{\vec}[1]{\ost@vec{#1}}
22 \fi

```

\uvec In vector calculus the unit vectors are usually denoted by a hat.

```

23 \newcommand{\uvec}[1]{\vec{\hat{#1}}}

```

\dotp To differentiate them from `\cdot` and `\times` which are for scalars.

```

\crossp 24 \DeclareMathOperator{\dotp}{\boldsymbol{\cdot}}
25 \DeclareMathOperator{\crossp}{\boldsymbol{\times}}

```

\grad Gradient of a vector valued scalar function.

```

26 \ifost@textvecdiff
27     \DeclareMathOperator{\grad}{grad}
28 \else
29     \DeclareMathOperator{\grad}{\vec{\nabla}}
30 \fi

```

\div Divergence operator. If the option `dontrenew` is a new macro `\divg` is defined. Otherwise `\div` is renamed to `\divsymb`.

```

31 \ifost@textvecdiff
32     \DeclareMathOperator{\ost@div}{div}

```

```

33 \else
34   \DeclareMathOperator{\ost@div}{\vec{\nabla}\dotp}
35 \fi

\curl Curl of a vector field.
36 \ifost@textvecdiff
37   \DeclareMathOperator{\curl}{curl}
38 \else
39   \DeclareMathOperator{\curl}{\vec{\nabla}\crossp}
40 \fi

\laplacian Laplacian of a scalar and vector field.
\vlaplacian 41 \ifost@textvecdiff
42   \DeclareMathOperator{\laplacian}{\div\grad}
43   \DeclareMathOperator{\vlaplacian}{\div\grad}
44 \else
45   \DeclareMathOperator{\laplacian}{\nabla^2}
46   \DeclareMathOperator{\vlaplacian}{\vec{\nabla}^2}
47 \fi

```

3.3 References

```

\skriptum Reference material in the skriptum (lecture notes) of the course.
\sref 48 \newcommand{\ost@skriptum}{\PackageWarning{No \noexpand\skriptum given}}
49 \newcommand{\skriptum}[1]{\gdef\ost@skriptum{#1}}
50 \newcommand{\sref}[1]{%
51   \texttt{\textcolor{OSTBlackberry}{#1}}\nocite{\ost@skriptum}}

\textbook Reference material in the textbook of the course.
\bref 52 \newcommand{\ost@textbook}{\PackageWarning{No \noexpand\textbook given}}
53 \newcommand{\textbook}[1]{\gdef\ost@textbook{#1}}
54 \newcommand{\bref}[1]{%
55   \texttt{\textcolor{OSTRaspberry}{#1}}\nocite{\ost@textbook}}

```

3.4 OST Colors

Define the colors according to the OST corporate design. The code was kindly stolen from H. Badertscher's `OSTColors.sty` [?]. First there are the “primary colors”.

```

56 \definecolor{OSTBlack}{RGB}{25,25,25}
57 \definecolor{OSTBlackberry}{RGB}{140,25,95}
58 \definecolor{OSTRaspberry}{RGB}{215,40,100}

```

Then the “design colors”.

```

59 \definecolor{OSTGray}{RGB}{198,198,198}
60 \definecolor{OSTDarkPurple}{RGB}{107,56,129}
61 \definecolor{OSTLightPurple}{RGB}{208,169,208}
62 \definecolor{OSTDarkGreen}{RGB}{0,126,107}
63 \definecolor{OSTLightGreen}{RGB}{167,213,194}
64 \definecolor{OSTDarkRed}{RGB}{195,46,21}
65 \definecolor{OSTLightRed}{RGB}{243,154,139}
66 \definecolor{OSTDarkBlue}{RGB}{0,115,176}
67 \definecolor{OSTLightBlue}{RGB}{95,191,237}

```

```

68 \definecolor{OSTDarkOrange}{RGB}{209,143,0}
69 \definecolor{OSTLightOrange}{RGB}{253,214,175}

```

And finally the base colors.

```

70 \definecolor{OSTPurple}{RGB}{149,96,164}
71 \definecolor{OSTGreen}{RGB}{29,175,142}
72 \definecolor{OSTRed}{RGB}{232,78,15}
73 \definecolor{OSTBlue}{RGB}{0,115,176}
74 \definecolor{OSTOrange}{RGB}{251,186,0}

```

3.5 Sane Defaults

First, set up hyperref to not look hideous.

```

75 \hypersetup{
76     colorlinks=true,
77     linkcolor=OSTBlack,
78     citecolor=OSTBlackberry,
79     filecolor=OSTBlack,
80     urlcolor=OSTBlue,
81 }

```

Then create a listings style.

```

82 \lstdefinestyle{ost-base}{
83     belowcaptionskip=\baselineskip,
84     breaklines=true,
85     frame=none,
86     inputencoding=utf8,
87     % margin
88     xleftmargin=\parindent,
89     % numbers
90     numbers=left,
91     numbersep=5pt,
92     numberstyle=\ttfamily\footnotesize\color{OSTGray},
93     % background
94     backgroundcolor=\color{white},
95     showstringspaces=false,
96     % default language
97     language=TeX,
98     % break long lines, and show an arrow where the line was broken
99     breaklines=true,
100    postbreak=\mbox{\textcolor{OSTDarkBlue}{${\hookrightarrow}$}\space},
101    % font
102    basicstyle=\ttfamily\small,
103    identifierstyle=\color{OSTBlack},
104    keywordstyle=\color{OSTBlue},
105    commentstyle=\color{OSTGray},
106    stringstyle=\color{OSTBlackberry},
107 }

```

Then we set this style to be default.

```

108 \lstset{style=ost-base, escapechar=`}

```

Change History

v0.1	v0.2
General: Initial version 1	General: Port features of <code>hsrstud</code> . 1

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