

# HSR–Stud Document Classes

Naoki Pross <npross@hsr.ch>

May 5, 2020

## Contents

<b>1</b>	<b>Purpose of these document classes</b>	<b>1</b>
<b>2</b>	<b>Class Options</b>	<b>1</b>
<b>3</b>	<b>Extra Metadata</b>	<b>2</b>
<b>4</b>	<b>Zusammenfassung <code>hsrzf</code> class</b>	<b>2</b>
<b>5</b>	<b>Bericht <code>hsrbericht</code> class</b>	<b>2</b>
<b>6</b>	<b>License</b>	<b>2</b>
<b>7</b>	<b>Implementation</b>	<b>2</b>

## 1 Purpose of these document classes

The following document classes were made by and for the HSR-Stud organization. These classes are intended to be used to create beautiful summaries and cheat sheets. Available classes are:

**hsrzf** For summaries (Zusammenfassung)

**hsrbericht** For reports (Bericht)

## 2 Class Options

**sans** Use Sans-Serif fonts.

**concrete** Use the “Concrete Roman” and “Concrete Math” fonts.

**header** Use the HSR–Stud standard header. The option **noheader** disables the header.

**margin=<size>** Sets up margins to reasonable size.

\* Any other given option is passed to the underlying class (article).

Size	H	V	Size	H	V
huge	45	40	small	20	30
large	35	35	tiny	10	20
big	30	30	minimal	5	20
normal	25	30			

Table 1: Sizes for the `margin` option. All sizes are in millimeters

### 3 Extra Metadata

Thanks to the `titling` package, normal metadata informations are available through the following commands: `\theauthor`, `\thedate`, `\thetitle`. Additionally, more metadata variables have been created for this class, to conserve informations related to the university course.

`\course` The degree programme of the discussed subject. Example: `Elektrotechnik`

`\module` Short name of the module according to the class schedule. Example: `ComEng1`

`\semester` Semester during which the summarized subject was taught. Example: `FS20`

`\institute` Internal institute in which the module was taught. This field is optional. Example: `ICOM`

### 4 Zusammenfassung `hsrzf` class

### 5 Bericht `hsrbericht` class

### 6 License

This work is licensed under a [Creative Commons](https://creativecommons.org/licenses/by-sa/4.0/) “[Attribution-ShareAlike 4.0 International](https://creativecommons.org/licenses/by-sa/4.0/)” license.



### 7 Implementation

```

1 %^^A%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2 %^^A Class Headers
3
4 (*hsrzf)
5 \NeedsTeXFormat{LaTeX2e}
6 \ProvidesClass{hsrzf}[2020/04/05 v0.1 HSRStud Summary class]
7 \hsrzf
8
9 (*hsrbericht)
10 \NeedsTeXFormat{LaTeX2e}
11 \ProvidesClass{hsrbericht}[2020/05/05 v0.1 HSRStud Report class]
12 \hsrbericht
13
14 %^^A%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
15 %^^A Implementation
16 %
17 (*hsrzf | hsrbericht)
18

```

```

19 %% Coding Packages (Dependencies)
20 \RequirePackage{iftex}
21 \RequirePackage{kvoptions}
22 \RequirePackage{etoolbox}
23
24 %% Class options
25 \SetupKeyvalOptions{
26     family=hsrzf,
27     prefix=hsrzf@
28 }
29
30 %% Use header and footer
31 \DeclareBoolOption[false]{header}
32 \DeclareComplementaryOption{noheader}{header}
33
34 %% Use a sans-serif font
35 \DeclareBoolOption[false]{sans}
36 \DeclareBoolOption[false]{concrete}
37
38 %% Configures the geometry package
39 %%
40 %% Possible values:
41 %% - huge      (45mm, 40mm)
42 %% - large     (35mm, 35mm)
43 %% - big       (30mm, 30mm)
44 %% - normal    (25mm, 30mm)
45 %% - small     (20mm, 30mm)
46 %% - tiny      (10mm, 20mm)
47 %% - minimal   ( 5mm, 20mm)
48 \DeclareStringOption{margin}[huge]
49
50 %% Configures the polyglossia package
51 % \DeclareStringOption[]{\lang}[german]
52
53
54 %% Pass other options to the class
55 \DeclareDefaultOption{%
56     \ifx\CurrentOptionValue\relax
57         \PackageWarningNoLine{\@currname}{%
58             Unknown option ``\CurrentOption'\MessageBreak
59             is passed to class ``article' '%
60         }%
61         % Pass the option to package color.
62         % Again it is better to expand \CurrentOption.
63         \expandafter\PassOptionsToClass
64         \expandafter{\CurrentOption}{article}
65     \else
66         % Package color does not take options with values.
67         % We provide the standard LaTeX error.
68         \@unknownoptionerror
69     \fi
70 }
71
72 \ProcessKeyvalOptions{hsrzf}
73
74
75 %% Create new metadata fields
76 \newrobustcmd*{\course}[1]{\csgdef\hsr@course{#1}%

```

```

77 \protected@csxdef{\thecourse}{\hsr@course}}
78
79 \newrobustcmd*{\module}[1]{\csgdef\hsr@module{#1}%
80 \protected@csxdef{\themodule}{\hsr@module}}
81
82 \newrobustcmd*{\semester}[1]{\csgdef\hsr@semester{#1}%
83 \protected@csxdef{\thesemester}{\hsr@semester}}
84
85 \newrobustcmd*{\institute}[1]{\csgdef\hsr@institute{#1}%
86 \protected@csxdef{\theinstitute}{\hsr@institute}}
87
88 \newrobustcmd*{\authoremail}[1]{\csgdef\hsr@authoremail{#1}%
89 \protected@csxdef{\theauthoremail}{\hsr@authoremail}}
90
91 \newrobustcmd*{\maintainer}[1]{\csgdef\hsr@maintainer{#1}%
92 \protected@csxdef{\themaintainer}{\hsr@maintainer}}
93
94 \newrobustcmd*{\contributors}[1]{\csgdef\hsr@contributors{#1}%
95 \protected@csxdef{\thecontributors}{\hsr@contributors}}
96
97 </hsrzf | hsrbericht>
98 (*hsrbericht)
99 %% The report class has some extra metadata
100
101 %% Extra title informations
102 \newrobustcmd*{\subtitle}[1]{\csgdef\hsr@subtitle{#1}%
103 \protected@csxdef{\thesubtitle}{\hsr@subtitle}}
104
105 %% Project informations
106 \newrobustcmd*{\category}[1]{\csgdef\hsr@category{#1}%
107 \protected@csxdef{\thecategory}{\hsr@category}}
108
109 \newrobustcmd*{\project}[1]{\csgdef\hsr@project{#1}%
110 \protected@csxdef{\theproject}{\hsr@project}}
111
112 \newrobustcmd*{\topic}[1]{\csgdef\hsr@topic{#1}%
113 \protected@csxdef{\thetopic}{\hsr@topic}}
114
115 \newrobustcmd*{\version}[1]{\csgdef\hsr@version{#1}%
116 \protected@csxdef{\theversion}{\hsr@version}}
117
118 \newrobustcmd*{\instructor}[1]{\csgdef\hsr@instructor{#1}%
119 \protected@csxdef{\theinstructor}{\hsr@instructor}}
120
121 \newrobustcmd*{\startdate}[1]{\csgdef\hsr@startdate{#1}%
122 \protected@csxdef{\thestartdate}{\hsr@startdate}}
123
124 \newrobustcmd*{\finishdate}[1]{\csgdef\hsr@finishdate{#1}%
125 \protected@csxdef{\thefinishdate}{\hsr@finishdate}}
126
127 %% Author informations
128 \newrobustcmd*{\address}[1]{\csgdef\hsr@address{#1}%
129 \protected@csxdef{\theaddress}{\hsr@address}}
130
131 \newrobustcmd*{\matriculationnr}[1]{\csgdef\hsr@matriculationnr{#1}%
132 \protected@csxdef{\thematnr}{\hsr@matriculationnr}}
133 </hsrzf | hsrbericht>
134 (*hsrzf | hsrbericht)

```

```

135
136
137 %^^A%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
138 %^^A Setup base class
139 \LoadClass[a4paper]{article}
140
141 %% Style deps
142 \RequirePackage{geometry}
143 \RequirePackage{fancyhdr}
144 \RequirePackage{titling}
145
146 %% Insert metadata in the pdf
147 \PassOptionsToPackage{plainpages=false, pdfpagelabels, pdfusetitle}{hyperref}
148 \RequirePackage{hyperref}
149
150 %^^A%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
151 %^^A Setup Style
152
153 %% TODO: fix title
154
155 %% Configure Sans-Serif font
156 \ifhsrzf@sans
157 \renewcommand{\familydefault}{\sfdefault}
158 \fi
159
160 %% Configure concrete font
161 \ifhsrzf@concrete
162 \PassOptionsToPackage{T1}{fontenc}
163 \RequirePackage{fontenc}
164 \PassOptionsToPackage{boldsans,amssymb}{concmath}
165 \RequirePackage{concmath}
166 \fi
167
168 %% configure geometry
169 %% defaults to big
170 \newlength{\hsr@hmarginwidth}
171 \newlength{\hsr@vmarginheight}
172
173 \ifx\hsrzf@margin\@empty
174 \setlength{\hsr@hmarginwidth}{30mm}
175 \else
176 \expandafter\ifstrequal\expandafter{\hsrzf@margin}{huge}{
177 \setlength{\hsr@hmarginwidth}{45mm}
178 \setlength{\hsr@vmarginheight}{40mm}}{
179 \expandafter\ifstrequal\expandafter{\hsrzf@margin}{large}{
180 \setlength{\hsr@hmarginwidth}{35mm}
181 \setlength{\hsr@vmarginheight}{35mm}}{
182 \expandafter\ifstrequal\expandafter{\hsrzf@margin}{big}{
183 \setlength{\hsr@hmarginwidth}{30mm}
184 \setlength{\hsr@vmarginheight}{30mm}}{
185 \expandafter\ifstrequal\expandafter{\hsrzf@margin}{normal}{
186 \setlength{\hsr@hmarginwidth}{25mm}
187 \setlength{\hsr@vmarginheight}{30mm}}{
188 \expandafter\ifstrequal\expandafter{\hsrzf@margin}{small}{
189 \setlength{\hsr@hmarginwidth}{20mm}
190 \setlength{\hsr@vmarginheight}{30mm}}{
191 \expandafter\ifstrequal\expandafter{\hsrzf@margin}{tiny}{
192 \setlength{\hsr@hmarginwidth}{10mm}

```

```

193         \setlength\hsr@vmarginsheight{20mm}}{}
194     \expandafter\ifstrequal\expandafter{\hsrzf@margin}{minimal}{
195         \setlength\hsr@hmarginwidth{ 5mm}
196         \setlength\hsr@vmarginsheight{20mm}}{}
197 \fi
198
199 \newgeometry{
200     left=\hsr@hmarginwidth, right=\hsr@hmarginwidth,
201     top=\hsr@vmarginsheight, bottom=\hsr@vmarginsheight
202 }
203
204
205 %% Configure headers
206 \fancypagestyle{hsrzf}{%
207     \fancyhf{} % clear
208     \fancyhead[C]{\thetitle}
209     \fancyhead[R]{\rightmark}
210     \fancyhead[L]{\leftmark}
211     \fancyfoot[R]{\thedata}
212     \fancyfoot[L]{\theauthor}
213     \renewcommand{\headrulewidth}{.5pt}
214     \renewcommand{\footrulewidth}{.5pt}
215 }
216
217 \fancypagestyle{hsrzf-norulers}{%
218     \fancyhf{} % clear
219     \fancyhead[C]{\thetitle}
220     \fancyhead[R]{\rightmark}
221     \fancyhead[L]{\leftmark}
222     \fancyfoot[R]{\thedata}
223     \fancyfoot[L]{\theauthor}
224     \renewcommand{\headrulewidth}{0pt}
225     \renewcommand{\footrulewidth}{0pt}
226 }
227
228 \ifhsrzf@header
229 \pagestyle{hsrzf}
230 \fi
231
232 </hsrzf | hsrbericht>

```